AGRICULTURE YEARBOOK

1925

UNITED STATES
DEPARTMENT OF
AGRICULTURE

UNITED STATES
DEPARTMENT OF AGRICULTURE

W. M. JARDINE
SECRETARY

AGRICULTURE YEARBOOK

1925

WASHINGTON
GOVERNMENT PRINTING OFFICE
1926

Organization of the United States Department of Agriculture

Corrected to July, 1926

Secretary of Agriculture	W. M. JARDINE.
Assistant Secretary	R. W. DUNLAP.
Director of Scientific Work	A. F. WOODS.
Director of Regulatory Work	WALTER G. CAMPBELL.
Director of Extension Work	C. W. WARBURTON.
Director of Information	NELSON ANTRIM CRAWFORD.
Director of Personnel and Business Administration	W. W. STOCKBERGER.
Solicitor	R. W. WILLIAMS.
Weather Bureau	CHARLES F. MARVIN, *Chief.*
Bureau of Agricultural Economics	LLOYD S. TENNY, *Acting Chief.*
Bureau of Animal Industry	JOHN R. MOHLER, *Chief.*
Bureau of Plant Industry	WILLIAM A. TAYLOR, *Chief.*
Forest Service	W. B. GREELEY, *Chief.*
Bureau of Chemistry	C. A. BROWNE, *Chief.*
Bureau of Soils	MILTON WHITNEY, *Chief.*
Bureau of Entomology	L. O. HOWARD, *Chief.*
Bureau of Biological Survey	E. W. NELSON, *Chief.*
Bureau of Public Roads	THOMAS H. MACDONALD, *Chief.*
Bureau of Home Economics	LOUISE STANLEY, *Chief.*
Bureau of Dairy Industry	C. W. LARSON, *Chief.*
Fixed Nitrogen Research Laboratory	F. G. COTTRELL, *Director.*
Office of Experiment Stations	E. W. ALLEN, *Chief.*
Office of Cooperative Extension Work	C. B. SMITH, *Chief.*
Library	CLARIBEL R. BARNETT, *Librarian.*
Federal Horticultural Board	C. L. MARLATT, *Chairman.*
Insecticide and Fungicide Board	J. K. HAYWOOD, *Chairman.*
Packers and Stockyards Administration	JOHN T. CAINE, III, *in Charge.*
Grain Futures Administration	J. W. T. DUVEL, *in Charge.*

1925 Yearbook Committee

The Yearbook has been prepared under the general supervision of a committee consisting of L. C. Corbett, H. P. Gould, W. R. Beattie, J. H. Beattie, W. F. Callander, and L. B. Flohr. A. P. Chew served as editorial secretary. E. C. Powell gave editorial assistance.

Foreword

This volume is the fifth and last of a series of yearbooks dealing primarily with the economic aspects of agriculture. The series was started under the direction of the late Henry C. Wallace, who was Secretary of Agriculture from March 5, 1921, until his death on October 25, 1924. In the preceding volumes articles have appeared on grains, livestock, fibers, dairy products, tobacco, forestry, forage resources, land utilization and land tenure, highways, credit, taxation, the poultry industry, and weather forecasting. In the present volume the fruit and vegetable industry is discussed. The Secretary's annual report to the President is likewise published, as well as a comprehensive collection of agricultural statistics.

The articles on fruits and vegetables include historical material relating to fruit and vegetable growing in this country, in addition to the present status of the fruit and vegetable industry, its marketing problems, its geographical distribution, its cultural methods, and the economic factors that determine its development. Considerable space is devoted to plant pests and diseases and to methods of combating them. Recent progress in drying, canning, and pickling is recorded, and attention is given to the problem of utilizing surpluses and by-products of fruits and vegetables. Methods of financing the industry are described and discussed. While not comprising a textbook of the fruit and vegetable industry, the articles are comprehensive and detailed.

In the five years covered by the series of yearbooks now concluded, American agriculture has been harassed with economic problems as never before. Not since the price decline of 1920 has income from agriculture sufficed to allow both a commercial return on invested capital and a fair reward for the farmers' labor, risk, and management. Farmers have been handicapped by disparities between the prices of the things they have had to sell and the things they have had to buy. They have been faced with urgent crop readjustment problems, and with difficulties occasioned by overstocked and demoralized markets. The economic studies contained in this series of yearbooks were expressly intended to assist farmers in coping with such problems and difficulties. There is reason to believe they have accomplished this object. Although the present volume deals with a branch of agriculture that has been less affected than some other branches by the postwar depression, the fruit and vegetable industry is not without pressing economic problems. I hope that this Yearbook may help it to deal with such problems effectively.

W. M. Jardine,
Secretary of Agriculture.

CONTENTS

Page

The Year in Agriculture 1
W. M. JARDINE

Fruits and Vegetables 107
L. C. CORBETT, H. P. GOULD, and W. R. BEATTIE, *Bureau of Plant Industry.*

Relation of the Fruit and Vegetable Industry to Other Farm Enterprises 125
L. C. CORBETT and W. R. BEATTIE, *Bureau of Plant Industry,* and H. R. TOLLEY, *Bureau of Agricultural Economics.*

Nutritive Value of Fruits, Vegetables, and Nuts 133
CAROLINE L. HUNT, *Bureau of Home Economics.*

Fruit and Vegetable Production 151
L. C. CORBETT, H. P. GOULD, T. R. ROBINSON, G. M. DARROW, G. C. HUSMANN, C. A. REED, D. N. SHOEMAKER, C. J. HUNN, J. H. BEATTIE, and W. R. BEATTIE, *Bureau of Plant Industry;* J. B. KINCER, *Weather Bureau;* and L. B. FLOHR, *Bureau of Agricultural Economics.*

Diseases and Pests of Fruits and Vegetables 453
M. B. WAITE, W. W. GILBERT, N. A. COBB, and W. R. BEATTIE, *Bureau of Plant Industry;* F. E. BROOKS and J. E. GRAF, *Bureau of Entomology;* and W. B. BELL and W. L. MCATEE, *Bureau of Biological Survey.*

Horticultural Manufactures 601
L. C. CORBETT, J. S. CALDWELL, WM. STUART, and W. R. BEATTIE, *Bureau of Plant Industry;* and L. B. FLOHR, *Bureau of Agricultural Economics.*

Marketing Fruits and Vegetables 623
A. W. MCKAY, H. W. SAMSON, R. R. PAILTHROP, and L. B. FLOHR, *Bureau of Agricultural Economics;* and L. C. CORBETT, L. A. HAWKINS, J. R. MAGNESS, H. P. GOULD, and W. R. BEATTIE, *Bureau of Plant Industry.*

Federal and State Research and Information Service 711
H. P. GOULD, *Bureau of Plant Industry.*

Horticultural Outlook 719
L. C. CORBETT and W. R. BEATTIE, *Bureau of Plant Industry.*

Miscellaneous Lists 728

Agricultural Statistics 741

Statistics of Grains 743

Statistics of Fruits and Vegetables 859

Statistics of Field Crops Other than Grains 947

Statistics of Farm Animals and Their Products 1033

Foreign Trade of the United States in Agricultural Products 1229

Farm Management and Costs Statistics 1285

Miscellaneous Agricultural Statistics 1356

Index 1515

THE YEAR IN AGRICULTURE

THE SECRETARY'S REPORT TO THE PRESIDENT

WASHINGTON, D. C., *November 14, 1925.*

To the PRESIDENT:

Improvement in the agricultural situation, which became marked in 1924, has continued in moderate degree during the present year. Farmers have not yet reached an economic parity with other great groups of producers, but their position is, on the whole, now the most favorable since 1920.

The heavy net movement of rural population away from farms has been checked. Noteworthy progress has been made in the liquidation of indebtedness among farmers. Purchase of supplies and materials for farm use has been resumed over the country on a scale contributing measurably to general business prosperity.

Agricultural production this year has on the whole been well balanced. The successive surpluses of cattle, corn, hogs, wheat, and various minor crops which so depressed the markets during and following 1920 have been largely worked off. Prices of farm products have in consequence risen to higher levels. The tendency this season has been even toward some expansion in production among certain major enterprises like cotton, corn, spring wheat, and sheep. Indications are that the acreage of winter wheat recently sown substantially exceeds that sown last fall. We have traveled around a fairly complete cycle in agricultural production since 1920.

Measured in terms of income, the economic position of agriculture as a whole promises to be at least equal to, if not slightly better than, that of the last year. Considerable improvement over previous years was manifested by the income from agricultural production for the crop year 1924–25, particularly in the areas selling wheat and hogs. Gross income from grains amounted to approximately $1,900,000,000, compared with $1,400,000,000 in the crop year 1923–24. Gross income from meat animals amounted to approximately $2,600,000,000 compared with $2,200,000,000 in 1923–24. Taking into account all farm production, the crop year 1924–25

NOTE.—When this report was written, the latest figures available were based on crop prospects November 1, 1925. They consequently differ somewhat from the figures given in the statistical section of this Yearbook, which were issued in December and include some revisions made on the basis of the preliminary total of the 1925 Census of Agriculture.

represented an advance in total gross income from $11,300,000,000 to $12,100,000,000, or an increase of 7 per cent. These incomes are well above those earned during the depression, but below the earnings of normal years. It is quite likely that the reduction in the wheat crop this year may not be sufficiently compensated by higher wheat prices. The smaller volume of livestock marketings, however, may be more than offset by higher prices, even to the extent of covering the reduction in the return from grain crops. For agriculture as a whole, at best only a moderate increase in income may be expected for the crop year 1925–26 above the $12,100,000,000 gross income of the past season.

Farmers are receiving better prices for their products than at any time in the past five years. The average of all farm prices for October was 143 per cent of the pre-war average as compared with 138 per cent in October, 1924. The real significance of this improvement in prices is better indicated by the relation of this change in prices of farm products to the changes in the wholesale prices of nonagricultural products. The purchasing power of the prices of farm products in terms of the prices of nonagricultural products has risen from 66, the lowest point of the depression period, to 87 in October, compared with the pre-war average of 100.

The current crop season has, as usual, shown some contrasts. In some sections there is distress. In others, crops are good and prices higher than at any time since 1920. In the great area from northern South Dakota to the Rio Grande and west to the Rockies, drought seriously reduced crop yields. The same is true in the area extending from the Ohio and Potomac Rivers southeast to central Georgia and east to the Atlantic. In certain restricted portions of these areas, the drought broke all records and farmers face the difficulties that follow when practically all crops fail.

Outside of the 15 States chiefly affected by drought, crop yields in 1925 were good, but they were not quite large enough fully to offset the reduction in the drought-stricken areas. Because of this, yields in the country as a whole were slightly below the average during the last 10 years.

For the growers of winter wheat this has been a season of disappointment. A fairly large acreage was planted, but the area killed by unfavorable weather conditions during the winter amounted to nearly 10,000,000 acres, or 22.5 per cent of the area sown. With the exception of 1917, this is the heaviest abandonment on record. As many of the fields left for harvest had thin stands and the crop also suffered from lack of moisture in the spring, the final harvest averaged only 12.7 bushels per acre, the lowest average yield since 1904.

Spring wheat looked very promising at first, but a correspondingly heavy yield was prevented by injury from rust, and the harvest was 13.3 bushels per acre. This is about 1 bushel per acre above the five-year average, but 2.6 bushels per acre below the splendid crop of 1924. In comparison with last year, however, the reduction in yield was offset by the large increase in the acreage planted in the Pacific northwest, where spring wheat was substituted for the winter wheat killed by the unusual cold.

Of all wheat, winter and spring varieties combined, the country harvested a total of 697,000,000 bushels, or 175,000,000 bushels less than in the preceding year. The crop was the smallest since 1917.

In proportion to population it was the smallest wheat crop since 1890. Furthermore, of this year's crop nearly 67,000,000 bushels were durum, a variety which is rarely used for bread flours.

The corn crop of some 3,013,000,000 bushels was nearly one-fourth larger than that of the previous year and of much better quality, but was less than the average quantity harvested in the preceding four years. In the central portions of the Corn Belt and practically everywhere north of the Ohio and Potomac Rivers, an excellent crop was obtained, but corn was nearly a failure in the Southwest, and the average yield was low in nearly the whole of the Cotton Belt and in some of the States along the western border of the Corn Belt.

A total of 1,470,000,000 bushels of oats and 227,000,000 bushels of barley were harvested, these totals being respectively 11 per cent and 25 per cent above the average production of the past five years.

The hay crop of 1925 was only 98,100,000 tons, the smallest since 1918. Allowing for 15,700,000 tons on hand May 1, 1925, and for probable holdings of, say, 9,000,000 tons next May (chiefly in sections where the 1925 crop was good), the quantity fed will probably be about 105,000,000 tons. A year ago the crop was 112,500,000 tons and the quantity used was close to 110,000,000 tons.

The cotton crop of 1925 is expected to be 15,386,000 bales and ranks with the crops of 1911 and 1914 as one of the three largest on record. No crop since 1914 has approached it in size. A record acreage and lack of excessive moisture during the growing season, with accompanying slight boll-weevil damage, were important factors in producing this crop. Good yields were obtained generally throughout the belt with the exception of south-central Texas and the Piedmont areas of the Carolinas and Georgia. The quality of the crop was materially lowered by weather damage during the latter part of the picking season. Prices generally are lower than a year ago, but for the belt as a whole, this year's income from cotton seems likely to equal that of last year.

The flaxseed crop of 22,300,000 bushels is much below the quantity harvested last year because of sharp reductions in both acreage and yield, but the crop was about 50 per cent greater than the average production of the preceding five years.

Buckwheat was a fairly good crop, and rice production was not far below average. Rye, sugar beets, and clover seed all gave low yields.

The potato crop of 346,500,000 bushels was the smallest since 1919, and in proportion to population it was even smaller than the crop of that year. Although the 1925 crop was 24 per cent less than that of the previous year and was of unusually poor quality, the quantity actually utilized for food may not be proportionately decreased because the 1924 crop was greatly in excess of domestic needs and many million bushels were fed to stock or used for starch or other low-value purposes. The shortage has, however, been sufficiently great to cause a substantial increase in the price of potatoes and probably some increase in the demand for substitute foods. The low production was owing partly to a reduction in acreage following several years of excessive production and low prices as well as to severe losses from freezing which occurred before all the crop was dug.

The sweet-potato crop amounted to only 81,100,000 bushels. A large acreage was planted but on account of drought the yield was

only 80 bushels per acre. With the exception of last year the yield per acre was the lowest for 15 years or more and the production the lowest since 1916.

In the range States pastures and ranges are now very good, and the demand for both feeder and fat cattle has inspired greater confidence in the future. The prices of lambs and wool are relatively high. In practically the whole area west of the Rocky Mountains crops have been good, and conditions are vastly better than they were a year ago.

Certain sections that suffered losses in previous years have this year enjoyed much needed profits. Some Maine potato growers are hoping to pay off fertilizer bills of several years' standing. Louisiana and Mississippi and some of the Gulf coast sections of Georgia and Alabama will make up part of their recent losses from the boll weevil.

Fruit and vegetable production was, in general, very moderate, chiefly because of drought and a reduced acreage planted to vegetables. Car-lot shipments of fruits and vegetables were about equal to the very heavy movement of the 1924 season, and apparently an unusually large proportion of the crops was successfully marketed. Prices were generally higher than in the preceding season through the greater part of the shipping movement, although for certain products there were periods of oversupply and depression.

Foreign demand for apples, the leading fresh-food export, has been active in each of the last two seasons, the movement showing double the volume of preceding years. For the producers of fruits and vegetables as a whole the year was more satisfactory in a financial way than any other recent season.

The Wheat Situation

The most significant fact about our wheat situation is that with a large world crop the United States apparently has little more than enough wheat to meet domestic requirements. The wheat crop of the Northern Hemisphere, outside of Russia and China, is estimated to be 11 per cent greater than the 1924 crop. It is larger than the pre-war average of production in the same countries, but not equal to the record crop of 1923. Russia is reported to have some wheat for export. Although it is not expected that Russia will contribute as much wheat for export as before the war, it is possible that she will export more wheat this year than she has exported in any other year since the war. Prospects are also good for the wheat crop in Argentina, but a short crop in Australia may offset the prospective increase in Argentina.

The world's supply of rye is also an important factor in the wheat situation. The rye crop, too, is much larger than last year. Estimates in the Northern Hemisphere outside of Russia amount to 981,000,000 bushels, as compared with 711,000,000 bushels last year. Russia is reported to have a good crop of rye. The effect of a good crop of rye in Russia is to encourage exports of wheat and the effect of good rye crops in Germany and Poland is to reduce the import demand for wheat.

The influence of this increase in production of wheat and rye as compared with last year is offset to some extent, however, by lower stocks at the beginning of the year and by the location of the in-

creases in production. At the beginning of the year European stocks of old wheat were reported to be very low and the stocks in exporting countries as well as the quantity of wheat afloat were very much lower than at the beginning of last year. Most of the increases in production of both wheat and rye are in Europe, where increased production will cause some increase in consumption. Latest estimates indicate that the total European crop of wheat outside of Russia and a few unimportant producers not yet reported is 323,000,000 bushels greater than last year and that the total European rye crop outside of Russia and a few small producers is 281,000,000 bushels greater than last year. Records of past years indicate very clearly that the European import requirements will not be reduced nearly so much as this increase in production. The fact remains, however, that the world's supplies for the year appear to be somewhat larger than last year in relation to the world's demand.

The situation in the United States is markedly different from what it was last year. The total production of wheat is but slightly greater than the quantity utilized in the United States last year. Out of an estimated production of 873,000,000 bushels last year, the balance of exports amounted to 252,000,000 bushels, leaving 621,000,000 bushels in the United States. In addition to this balance about 44,000,000 bushels were drawn from stocks, indicating a total utilization in this country of approximately 665,000,000 bushels. Should the same quantity be utilized in the country this year, there would be only about 32,000,000 bushels of wheat for export without further reduction of stocks.

Considering the production of the various classes of wheat and the other conditions that affect the marketing of our wheat, it is apparent that we shall export, and we are exporting some wheat. More durum wheat has been produced than is needed in the country. There is also some wheat on the Pacific coast for export or for shipment to eastern States. It appears, on the other hand, that not enough good hard red winter and soft red winter wheats have been produced to meet the usual mill, feed, and seed requirements of these wheats. The mill demand for these wheats, as well as for the hard red spring wheat, is in part for flour exports. It seems, therefore, that we may export durum wheat, some of the soft wheat from the Pacific coast, and about the usual quantity of flour. There may be some exportation of other wheats in the beginning of the season which will have to be offset later by imports.

The shortage in suplies of several classes of wheat may place the United States on an import basis at least for a greater part of the year. The surplus of durum wheat will have to meet competition of wheat from North Africa and Russia in Mediterranean markets, and the price of that wheat has already fallen as low as $1 per bushel in sections of North Dakota in the middle of August. The prices of other wheats are now too high compared with world markets to permit of exports on the basis of these prices. The prices of wheat for December delivery in Chicago, Minneapolis, and Kansas City are nearly on a par with the price in Liverpool and considerably higher than in Winnipeg. Canada is the nearest source of imports. Both the futures and cash prices for wheat delivered at Port Arthur are now considerably below prices in Chicago and Minneapolis. A

small quantity of wheat has been imported, but the margin is not yet sufficient to encourage heavy imports, duty paid. It is probable, however, that as high-grade milling wheat becomes scarcer in the United States, the price margins will widen. Canada has a large supply of hard red spring wheat and a small quantity of soft red winter wheat, so that the relation of prices in the United States to the world-market level may be worked out through the relation of Canada to the world-market level, plus approximately the tariff duty.

Farmers received for their wheat at the beginning of the season prices considerably higher than those of last year. Last year, however, on account of a small world crop, prices moved rapidly upward from the beginning of the season until February. We are facing a different situation this year in that the world crop is much larger. In many parts of the country the higher prices thus far received are not sufficient to offset the reduction in the crop yield, so that farmers may not receive as great a return from this year's crop as they received from last year's.

Looking ahead, according to the "intentions-to-plant" report, high prices have encouraged farmers to consider increasing the wheat acreage of the United States. In planning wheat production the situation both in the United States and in the whole world should be considered. Even with the same acreage as last year, a good average yield would place the United States on an export basis for most if not all classes of wheat. The trend of production in many countries that compete with the United States is upward. Production in European countries affected by the war is rapidly approaching pre-war status. Russia, a large exporter before the war, is recovering. The wheat-producing areas of Argentina, Australia, and Canada are now 53 per cent above pre-war average, and these countries have not yet reached their limit. Under these conditions, only poor crops in important foreign wheat-producing countries can result in a situation comparable to that of last year, when the farmers of the United States had a good crop which they sold at high prices.

The Cotton Situation

The 12 months ended July 31, 1925, brought to the world perhaps the best balance between cotton supplies and consumption since the outbreak of the war. Cash proceeds were well distributed throughout the Cotton Belt. The prospect is for a 1925 crop materially larger than that of 1924. Indications are that the grade of the crop will probably be very much lower, and that the cash proceeds, owing to sectional damage caused by drought, will be less generally distributed than in 1924.

From a production standpoint, the results of the 1924 crop were so encouraging that in the spring of 1925 more than 46 million acres were planted to cotton. This was the largest acreage in the history of the country. The increase was greatest in the extreme western part of the Cotton Belt, where large areas of range land have been broken up and devoted to cotton cultivation, and where drought prevented the seeding of the usual acreage of grains. Although growing conditions have been less uniformly good than in the previous year—drought having brought disaster to certain sections

of the Southeast and Southwest—they have been extraordinarily favorable in many sections and the third largest crop in the country's history is expected. The department's forecast on November 9, 1925, was approximately 15,386,000 bales.

At present prices this production would represent a total value about equal to that of 1924. Drought and generally dry weather caused early opening of bolls in many sections, and early rains have lowered the grade of much of the crop. This condition has been somewhat accentuated by a scarcity of picking labor in certain localities, because of which some cotton has remained exposed in the field.

The large crops of 1924 and 1925 have done much to allay fear that the boll weevil and other checks have curtailed the ability of this country again to produce an adequate supply of cotton. Occasional suggestions that it may produce a series of crops large enough to depress prices below the point of profit are tempered by a realization that the use of cotton in industry is increasing, that the world appears to be regaining its pre-war capacity to consume cotton and that in the present and preceding seasons weevil depredations have been unusually light. Our production of cotton is still somewhat less than it would have been had it followed the trend of the 30 years preceding the World War.

The increased crops of 1924 and 1925 have been coincident with increased cotton-consuming power in Europe, following stabilization of currencies and credit conditions. This improvement was shown in exports from the 1924 crop more than a third larger than the average of the preceding five years. Exports for the first months of the 1925 season were even larger than in 1924, though this may have been owing in part to the earliness of the season.

Domestic business conditions also showed improvement, being supported by general improvement in domestic agricultural conditions. Domestic mill consumption sharply increased toward the latter part of the season, and seems to promise a good domestic demand for the 1925 crop.

Satisfaction was expressed by manufacturers over the relief they obtained by the 1924 crop from an acute shortage of raw material, although world consumption of American cotton for the crop year was only about half a million bales less than the production. Stocks in this country, moreover, were only about 100,000 bales larger on July 31, 1925, than a year before, and this quantity at current rates of domestic consumption meant a difference of less than a week's requirements of our mills. With a crop of 15⅓ million bales in 1925, it is possible that there may be some further restoration of stocks which as yet are considerably below pre-war quantities.

The anticipation of a crop in 1925 larger than the crop of 1924, together with the slight increase in supplies at the beginning of the season, has been naturally accompanied by somewhat lower prices. The average price for the 1924–25 season in 10 designated spot markets was 24.22 cents a pound. This price represented a reduction of 5 or 6 cents, or about 20 per cent from that of the preceding season. On the other hand, the purchasing power of cotton in terms of all other commodities was calculated for August, 1925, at 116 per cent of the average purchasing power in the five years

preceding August, 1914. Although this represents a reduction over the immediately preceding years, it is nevertheless a price that compares favorably with that of other crops grown in the South.

It should be noted, however, that production outside the United States has increased rapidly in the last two seasons, as a result, no doubt, of the stimulus of favorable economic and weather conditions rather than of concerted effort, though there has been much of the latter. A further increase of foreign production will bear careful study, since it may lead to a competitive situation in which the advantage will rest with the producer whose costs of production are lowest or who produces cotton of a quality most in demand. Under such conditions, the shorter staples grown in this country would probably feel the competition of cotton grown with cheap labor in India, China, and elsewhere.

The department is giving close attention to the possible competition which foreign cotton production may force upon our short staples. It is particularly concerned with cotton breeding and testing, so that a more general production of prolific cotton of high spinning quality may be facilitated. Studies have been made of production costs in 15 counties typical of as many distinctive areas in the Cotton Belt. Scientific investigation has been made of the less obvious properties of cotton fibers which contribute to their spinning value. The results of this work have been made available to breeders of seed and to other cotton growers. Spinning tests are being carried on to determine the relative waste content and the strength and evenness of yarns from cottons of various varieties, and from cottons of the same varieties grown under various conditions of soil and climate. Tests of the same sort have been made of cottons of different grades. These tests have demonstrated the relative superiority of higher grades over lower grades, from the standpoint of waste percentages and values, yarn strength and evenness, bleaching, finishing, and mercerization properties, and efficiency of machine operation.

Concurrently the work of quality standardization has been carried forward. New agreements have been negotiated with foreign markets within the year, which assure the use of the grade standards throughout the world, thus solidifying their establishment and adding to their usefulness in our own country. The staple standards have also been reviewed in the light of past experience and certain slight modifications projected in the physical representations, all of which are calculated to make them more workable and dependable as measures of length. There are few problems of an economic nature, either in cotton production or distribution, to which fixed and accepted standards of quality are not fundamental.

The Livestock Outlook

Livestock producers found themselves in a rather more favorable position this year. Hogs averaged more than 60 per cent higher in price during the first half of 1925 than in 1924. At times they brought nearly double the 1924 price. Top-finished and heavyweight cattle sold up to $16.35 per hundred pounds at Chicago. This was the highest price registered since 1920. The average price for

lambs in August was $1.50 higher than in 1924. It was the highest for that month in six years; and three-eighths blood wool averaged more tan 50 cents a pound. Lessened supplies were partly responsible for the advance in hog prices. The short corn crop of last year, however, compelled the feeding of relatively expensive grain, so that producers did not obtain an increased net income proportionate to the increase in hog prices. The supplies were not reduced relatively so much as the prices increased, and during a part of the year a decrease in the number of hogs marketed was offset to some extent by an increase in average weights.

Marketings of cattle, calves, and sheep were heavier during the first half of 1925 than in the corresponding period of 1924. Indications are that the total quantity of meat produced in 1925 will be nearly as great as in 1924, and the gross returns from its sale the highest since the speculative period of 1919.

One of the important developments of this year has been an advance in cattle prices. A gradual improvement has been shown in the cattle market since December, 1921, but at times this improvement was so slow as to be almost imperceptible. It took the rapid improvement of 1925 to convince cattlemen that the tide had definitely turned.

In parts of the range country there has been a marked tendency toward lower production. Some cattlemen have gone out of the business. Others are keeping fewer but better cattle. There is, however, no beef shortage as yet, although heavy runs of cattle and calves are tending to reduce basic supplies. Receipts of cattle and calves at public markets during August, 1925, were the heaviest on record for that month. Prices advanced in spite of increased marketing. Receipts at central markets have been increased by contributions from the dairy industry, which every year is supplying a larger proportion of our beef and veal.

Although top cattle prices at Chicago in August were $2 higher than they were a year previously, the average of range-steer prices for the same month showed advances of only about $1. Stocker and feeder prices in August were only 70 cents higher than in August, 1924. These facts may somewhat temper enthusiasm over the upturn in the cattle market. Higher fat-cattle prices, however, always stimulate the demand for feeders, and a good demand for feeders reacts favorably on the market for range cattle. It would seem, therefore, that eventually all branches of the cattle industry should feel the benefit of the better price situation.

Reduced hog marketing is helping the cattlemen materially. They have also been benefited by good forage conditions over most of the range country, although some sections have had severe drought.

Sharp curtailment of hog production resulted from the unfavorable relationship which existed between hog prices and corn prices in 1924. Fewer sows were bred in spite of a sharp upturn in hog prices last fall. As a result market receipts of hogs in August this year were 20 per cent less than in August, 1924. They were 15.6 per cent below the five-year August average. In the first eight months of 1925 hog receipts dropped 19 per cent from the total of the corresponding period in the previous year. Moreover, the average weight of hogs marketed in the early part of 1925 was below

normal. Later, however, advancing prices presumably influenced growers to market fewer hogs.

There is now a marked tendency toward feeding to heavier weights. If this continues, the reduction in pork produced will be much less than the decrease in the number of hogs. Although hog prices broke sharply in August, they were still considerably higher in September than in the same month of 1924. Our foreign trade in pork products, although less than during the peak war years, was fairly satisfactory. Altogether, the hog situation in 1925 was one of improvement.

For the last two years the sheep industry has been perhaps the brightest spot in the livestock situation. Sheepmen will close their books this year with a very favorable showing. This prosperity has naturally drawn to it many new producers, including some inexperienced sheep raisers. Sheepmen should bear in mind the tendency of their business to go from one extreme of production to the other and should guard against overexpansion.

The average price of lambs in August was $1.60 higher than in the same month of 1924. For the first eight months of the current year the average price of lambs showed a net advance of $1.13 over 1924. As a matter of fact, during the past two years lambs have sold at nearly double the pre-war price. They have almost equaled the average prices that ruled during and immediately after the war. Attention to scientific methods of production, and prudence in expanding the number of sheep on farms and ranches, should help to maintain the sheep industry in its present prosperous condition.

The efforts of the department to work out a standard system for classifying and grading both live animals and meat have found favor among representative stockmen and dealers. This is one important move in the direction of greater marketing efficiency.

The department has worked out a schedule of standards for meat covering beef, veal, lamb, mutton, and pork, which have been accepted to a gratifying extent by the wholesale and retail meat trade, and by the consuming public. It has also established a meat-grading service.

Wool

A 5 per cent increase in wool production and a million more sheep on farms in 1925 than in 1924 are proof of returning confidence in the wool-growing industry of the United States. The favorable position of the industry at the present time is likely to encourage further expansion during the coming year. Wool growers generally were seriously affected by the postwar depression of 1920 and 1921, but the relatively good prices obtaining during the years 1923, 1924, and 1925 have enabled them for the most part to recover or to complete the readjustments the depression necessitated.

The fall and winter of 1924 saw a remarkable rise in wool values, but wool growers, with the exception of those marketing their clip late in the season, benefited little at the time. The advance, however, did create a keen demand for the 1925 clip, and contracting for the wool at high prices was carried on with vigor and energy from six to eight months prior to shearing. Wool values declined rapidly in the early part of 1925, reaching their low point in May.

Nevertheless, the wool-growing industry of the United States should continue for some time on the substantial basis it now occupies, although fluctuations in prices during the coming year are not unlikely.

Dairying

The dairy situation is more favorable than it was a year ago. Production is less than last year, consumptive demand has been good, and the storing season closed without burdensome surpluses. Prices of all dairy products are higher and have followed a more normal trend.

Production in 1924 was heavy. It was stimulated by ideal weather and by some increase in the number of cows. Production in 1925 will be less. Prices are higher. On September 1, 1924, the normal peak date for storage holdings, butter stocks were at a record high mark. These stocks were cleared before the 1925 producing season began, yet they exerted a depressing influence throughout the fall and winter. September 1 this year found stocks on hand more nearly in line with prospective requirements. Fall production did not seem likely to be unusually large. The position, in short, was statistically more favorable to producers.

The foreign situation has strengthened domestic markets. Except for exports of condensed and evaporated milk, outlets for domestic production of dairy products are very largely confined to our own markets. There is always the possibility, however, of our domestic supply being supplemented by imports from Denmark and from countries in the Southern Hemisphere, which are forging ahead rapidly as sources of supply. The European demand has been sufficient this year to hold prices in European markets at levels which, together with our own tariff barrier, have prevented imports of any consequence.

Poultry

From the producers' viewpoint the egg situation this year has been fairly satisfactory. Apparently production has been about the same as last year, whereas egg prices, stimulated by the previous profitable storage season, were considerably higher during the spring and summer than a year ago and have continued higher as far as fresh eggs are concerned. Storage-egg prices, however, because of larger accumulations in the warehouses and an unsatisfactory movement during the early fall, are lower.

The widespread disease situation last fall and winter, with its attendant embargoes on shipments of live poultry, had a most disturbing effect on the poultry industry. Consumption was restricted and stocks of poultry in storage piled up to such an extent that the disposal of a considerable proportion at a profit was impossible. Poultry prices to producers have been fairly well maintained, however, and with consumption and storage stocks at a more normal level, the situation is considerably improved. There appears to be about a normal supply of poultry on farms this year.

Foreign Market Situation

Our agricultural exports for the year ended June 30, 1925, were 21 per cent greater in volume than in the previous year and 26 per

cent greater than the average for the five years just preceding the outbreak of the World War. The value of these exports was more than double the value of the agricultural exports of any pre-war year and greater than that of any year since 1921.

The increased demand was due in part to smaller crops, in part to increased purchasing power in foreign countries. A shortage in European wheat crops greatly increased the demand for overseas wheat. A shortage in the Canadian crop left the European market largely to us. Accordingly we were able to sell in the year ending June 30, 1925, more than 169,000,000 bushels of wheat, including flour, in Europe at prices considerably higher than the prices obtained for a much smaller quantity (69,000,000 bushels of wheat, including flour) the previous year.

On the other hand, exports of pork and lard fell below the previous year's figure. This decline was owing mainly to decreased production in the United States and increased production in Europe. Substitution of other products, such as Argentine beef for pork, and butter for lard, had also something to do with it.

The European market for Argentine beef has been strong. This has lessened the probability of Argentine shipments to the United States—an obvious benefit to our own beef-cattle industry. In like manner our domestic markets have been almost freed from foreign butter, chiefly as a result of increased exports of Danish butter to Germany. Our net imports of dairy products in the last year were the smallest in several years.

Foreign competition continues to grow stronger in some lines of farm production. The wheat area of Canada has increased from a pre-war average of 10,000,000 acres to 22,000,000 acres in 1925. There are still large areas in Canada suitable for wheat production. Australian wheat area has increased from a pre-war average of 7,600,000 acres to 10,800,000. Argentina reports having sown a record acreage. The wheat area of these three countries together is now about 53 per cent above the pre-war average. Dairy production continues to expand in the Southern Hemisphere. New Zealand and Australia have just finished a season of record output. The production of these two countries has expanded greatly since the war. They still have room for expansion. Argentine dairy production has also increased considerably since the war. The further development of the western Provinces of Canada and the recovery of Europe are adding to the world's supply. Siberia, a large exporter of dairy products before the war, is also recovering.

It is well to note that increased purchasing power in European countries may not always result in an increase in the demand for American farm commodities. As European agriculture recovers there will be a tendency for European countries to reduce imports of the crops that they produce. The larger crops of grain harvested in Europe this year will undoubtedly have this effect. The European market for cotton, however, will probably be maintained as long as business conditions in Europe remain good.

Our agricultural production this year will probably not provide for the year a volume of exports so large as that of last year. Of wheat, one of our most important items for export, we have at most only a small quantity in excess of our domestic requirements. Present indications are that the cotton crop will furnish for export more

than last year. The number of hogs has been so much reduced that the pork and lard exports are likely to remain low. Of some other products, such as tobacco, apples, and many minor items, we may continue to export about the same quantity as last year. It should not be overlooked, however, that the trend of exports of many of our products for the last 15 years before the war was downward. This was owing largely to the fact that our industrial population was increasing more rapidly than the production of many of our agricultural products. A reduction in our agricultural exports would therefore be in line with pre-war tendencies.

Farm Credit Situation

Good crops and increased prices have materially improved the financial position of our farmers. In some regions, particularly in the Corn Belt, where commitments for high-priced land and farm improvements reached heavy proportions, and in the cattle country, where livestock growers suffered almost unbelievable losses, large numbers are still confronted with financial problems, the solution of which will tax their best efforts.

Substantial progress has been made in improving the rural-credit situation through legislation setting up machinery for both short and long time credit. Much remains to be done, however, to make the new agencies effective; they must be brought to the farmer so that he can avail himself of their facilities. Particularly is this true of the intermediate credit bank system, its rediscounting privileges having been utilized, in most areas, only to a limited extent. The intermediate credit banks have assumed a very important rôle in financing cooperative marketing organizations, and there is every reason to believe that they may fill just as important a place in financing the individual farmer where local capital is inadequate.

There are many regions where the small farmer, particularly, is at a disadvantage. He is compelled to pay high interest rates for short-time loans, to which additional commissions are frequently added. Crop liens and chattel mortgages often interfere with the marketing of his products to best advantage. This is a situation which also affects the development of cooperative marketing. The organization of local agricultural-credit corporations to make available additional credit through the rediscounting facilities of the intermediate credit bank system, should materially improve these conditions. Where local banking facilities are adequate, the organization of new rediscount corporations should not be encouraged, as the new intermediate credit system was intended to supplement rather than compete with existing banking machinery.

The depression revealed weaknesses in our agricultural credit facilities which intensified the difficulties of farmers and stockmen. As agricultural conditions have improved, the credit problem has become less pressing. A sound credit structure, however, is no less important now than in the past. We should, therefore, devote ourselves to repairing and putting in shape our agricultural credit machinery so that it may be in a position to carry farmers through agricultural depressions that may come in the future.

It should be borne in mind, also, that in many regions a lack of confidence in agriculture has retarded expansion and farm improve-

ments. Farmers under these conditions have been devoting themselves to the liquidation of existing indebtedness rather than seeking additional loans. This, naturally, has led to a smaller demand for credit. With a renewal of confidence in farming conditions it is likely that weaknesses in local credit facilities will become apparent.

The credit situation in certain areas has been seriously complicated as the result of numerous bank failures. Impaired confidence in the banking situation and in the stability of agriculture has caused banks to maintain extremely high cash reserves and has resulted in a shift of banking funds from agricultural investments to Government and industrial securities. This is illustrated by the fact that in some rural communities the percentage of deposits represented by cash or Government obligations reaches 75 to 80 per cent of the total deposits. When confidence is again restored in these regions a more stable credit situation will follow.

II. Economic Problems of Agriculture

Agricultural Surpluses

Agriculture can not make its adjustments in production to demand as rapidly and accurately as can industry. It is handicapped by weather conditions, by animal and plant pests, by limitations of soil and climate, by fixed periods of growth, by slow turnover, and by other more or less uncontrollable influences. A great deal has been done and can be done toward adjusting production to anticipated market requirements. Nevertheless, surpluses of agricultural commodities will be produced from time to time, no matter how prudently farm crops and livestock may be regulated in accordance with forecasts of supply and demand. Nature will give us bountiful yields in some years, even though acreage may have been cut down. In short, nature may upset the best-considered plans for establishing a harmonious balance between production and consumption.

What can be done toward handling unavoidable surpluses, which are so disastrous to a stabilized agriculture, when they occur unavoidably? This is one of the major economic problems of the Nation. It is well known that small surpluses exercise a depressing effect on prices altogether disproportionate to their amount. Measures to regulate the movement of surpluses into consumption so that unnecessary price fluctuations can be avoided and speculative hazards lessened are urgently needed.

It is to the interest of the entire community that agriculture should not be periodically depressed by overproduction and low prices. Business, indeed, has almost an equal interest with agriculture in preventing undue fluctuations in farm commodity prices. Whatever benefit low farm-commodity prices may temporarily seem to bestow on the consumer are eventually offset by a movement the other way. Stabilized production and marketing of agricultural products are clearly in the public interest.

Perhaps an analysis of the surplus problem will help us to decide what the nature and the principles underlying these measures should be. In the first place, we should clearly recognize what the surplus is. It may be a useful and necessary carry over from one producing season to another, part of which is involved in the process of manu-

facture and distribution and part of which is the national reserve against fluctuating seasonal production. It may be overproduction beyond the domestic and world demand. From a purely practical point of view there is the possibility of developing marketing methods which will prevent the carry over from depressing prices to unfair levels.

In the field of production there is one important thing that Government agencies can do. They can furnish farmers with a background of economic information which will serve to guide intelligent programs of production. The Department of Agriculture is already undertaking to collect and disseminate accurate information on production, movement, prices, and consumption of farm products.

The department's work along these lines is being rounded out to a comprehensive service. It compiles and disseminates the data on intended plantings of both spring and fall crops. It makes careful pig surveys, indicating farrowings and the pig crops in expectation. It is beginning similar calf surveys and will shortly cover the whole livestock industry. It issues timely statements on the outlook for production in each of the important lines. This is not an academic service. It is a real stabilizing force. The department has been forecasting the corn-hog situation accurately for a considerable period. Those swine producers who heeded its warnings in the spring of 1923 and its encouragement in the fall of 1924 have made money both ways by doing so. Those potato producers who heeded its advice not to reduce acreage too much last spring have profited thereby. Next summer will come the danger again of too great a potato acreage. The wheat situation would give promise of greater stability next year if there were more general adherence to the cautions clearly sounded in this fall's outlook. In stabilized production and in avoidance of wide swings lies the greatest assurance of profitable adjustment to the markets.

The Department of Agriculture is vigorously developing this service of supplying farmers with basic information by which orderly production may be guided. Through its Extension Service and in cooperation with State agricultural departments and colleges of agriculture it is perfecting and localizing the machinery of dissemination. In time this program will contribute measurably to reduce the fluctuations of unbalanced production.

In the field of distribution, public agencies should—as they already do—help the surplus problem at many points. In this field, again, the Government can provide essential background information as a guide to orderly marketing. The Department of Agriculture's forecasts and estimates of crop and livestock production are already the accepted data of trade. Its market news service covers the movements and prices of every important farm product.

A comprehensive system of standards of grades for farm products should be set up. The Department of Agriculture has made considerable progress on this project. It has already secured establishment of standards and grades for a number of major crops. Its cotton standards are accepted in the world's markets. Such action reduces hazard in marketing and diminishes the margin between the farmer and the consumer.

Warehouses and terminal storage facilities should be made adequate and stored farm products given a credit status on a par with other commodities. The act permitting Federal licensing of warehouses illustrates what can be done. Cold storage and merchandising dependent thereon can be developed beyond present limits.

Many developments will be possible in the credit structure. The system of intermediate credit is a case in point. The intermediate-credit machinery, one of the greatest accomplishments for agriculture, still needs extension, however, to fit the needs of various perishable crops. Some phase of our credit machinery must be evolved that will permit much broader storage of nonperishable crops.

There are therefore manifestly two general avenues of approach to the surplus problem. One is through better management of production, and the other through marketing and distribution. In the latter field we have three major issues, the problems of storage of a given harvest pending consumption during the year or season, and the problem of storage for the carry-over. We have in all storage questions immediately the problem of credit. Beyond these two questions of storage and credit we have the third problem, and that is orderly control of the stream of supplies to the consumer. We can solve the first two of these issues by better provision of facilities, but we can only solve the third by collective action.

It should be stated, also, that the provision of storage and credit must be differentiated as to application in the different kinds of products. In order to approach the problem from a practical standpoint it is essential to distinguish between the situations which arise in the three great groups of perishable products, nonperishable products, and livestock. This it will be noted is a purely arbitrary grouping.

While there is a great deal that can be done in adjustment of production in perishables such as fruits, vegetables, and dairy products, there also is the enlarged opportunity of restricting the flow of current products into the market by better standards and grades and by the diversion of the surplus, which then will be composed largely of inferior qualities, into by-products. All this implies organization, which already has made great headway in these commodities. There is also the possibility of broadening consumption of certain foods with benefit to all concerned.

Similarly in the case of nonperishables, like grain and cotton, something can be done in the field of better organized production and in the provision of enlarged storage and credit facilities.

As for the third general group—livestock—the major emphasis should be on the production end, although something can be done in the distribution field. It is frequently impossible to gauge the situation perhaps years in advance, and in such cases the distributive machinery may be made to function more effectively than at present. While better direction of production offers definite possibilities in both perishable and nonperishable groups, it offers the most effective solution in the livestock problem.

In the problem of control of the stream of products to the consumer we enter upon our most difficult field, a field which, as I have said, requires collective action. I believe farmers through their organizations have a most powerful instrument to control the move-

ment of surpluses into consumptive channels. In my judgment the activities of Government agencies in connection with the surplus problem should supplement and assist rather than control and direct the efforts of the farmers themselves and their associations. To accomplish this may call for enabling legislation. It should be borne in mind, however, that any plan built around cooperative associations should be based upon the ability of the existing and potential cooperative associations to handle surplus crops. Otherwise their initiative and usefulness might be seriously impaired or destroyed.

It seems to me that there is plenty of room for action here without injuring the rights of the consumer by any development of trading practices in restraint of trade. Farm production is so extensive and varied, so dependent on nature, that restriction of it to the point at which the consumer's interests would be menaced is a remote possibility.

A measure of the progress already achieved in this direction is the fact, mentioned elsewhere in this report, that nearly one-fifth of our agricultural business, or $2,500,000,000 worth, was done this year through farmers' business organizations.

Even if direct Government interference in the channels of trade were to be tolerated by the consuming public, it would, in my judgment, lead to heavier production and ultimately an aggravation of the whole problem. Government buying and selling, if successful, would smother the cooperative movement because it would eliminate the incentive for collective action. It does seem essential, however, that this issue should receive broad recognition as a problem of national importance and, second, that public agencies should make every proper effort to cooperate in sound workable programs looking to its solution. The discussion of the problem of surpluses is entering more and more upon common ground, and I look forward to an agreement upon the principles of a solution along the broad lines here suggested.

Agricultural Cooperation

The most distinct and significant movement in American agriculture in this decade is the almost universal trend toward cooperation in the marketing and distribution of farm products. It is in no sense a regional or sectional movement, for it exists in all sections and is participated in to some extent by producers of practically all kinds of farm products.

There has been some cooperation by farmers in the United States for many years, but within the last two decades, and particularly during the last decade, the movement has assumed proportions which indicate that it is a response to a fundamental and universal need of present-day American agriculture. It is highly significant from all points of view that the best minds in agriculture, without regard to region or commodity, are unanimous in the opinion that group action in marketing must be added to individual efficiency in production if the high standards of American farm life are to be preserved and agriculture is to maintain its proper place in our national life.

Vast problems are involved in the changes in agriculture and in commerce and industry which this movement is bringing about.

They are broader than any one class and vitally affect all classes, hence they are a proper concern of the Government.

It is the traditional policy of our Government to foster agriculture as the most essential of our industries, but without in anywise seeking to dominate or direct it. This policy must be our guide in dealing with these new problems.

Although cooperative marketing is a farmers' movement, it is not in any proper sense a selfish class movement and holds no menace either to consumers or other business interests. Agricultural production is essential to national welfare, and the only guaranty of an adequate and dependable supply of agricultural products is a prosperous and contented agricultural population. It is obvious to any thoughtful mind that this happy result can not be obtained by agriculture unless it avails itself of the efficiencies and economies of organization and specialization which characterize other industries in this day. Consideration alike of intelligent self-interest and public welfare must prompt other classes to support wise and intelligent efforts of farmers to place their important industry upon a basis of stability and prosperity.

Agricultural cooperation, as we understand it at the present time, is simply an extension of the principle of mutual helpfulness that exists between many groups engaged in industry, commerce, or agriculture. It is, however, a very definite extension of that principle. In a cooperative-marketing organization, the members do not contribute their services in the informal way in which one farmer may help another in harvesting or threshing. They take another step and contribute capital to finance a joint business enterprise, and enter into agreements which specify the duties of each member. When this occurs, cooperation takes on a more or less definite legal status, and meets problems similar to those of other business organizations. There are also special problems confronting cooperative organizations because they deal not only with marketing but with the farmers' production practices, as these practices affect marketing.

Business agriculture to-day demands that we bring about a better balance between production and distribution. American farmers can more effectively apply modern business methods to their business and effect integration in the production and distribution of agricultural products by banding themselves together in cooperative groups. In other words, I believe cooperative marketing to-day is an economic expression of group life in farming and is a natural development of business agriculture.

To place our agricultural production on a stable and profitable basis we must recognize the inseparable relation between production and marketing. The working out of a more efficient marketing system must go hand in hand with an intelligent adjustment of production to market demand in a more orderly manner so as to avoid periods of overproduction with great loss and periods of underproduction with prices unsatisfactory to the consuming public. That agricultural production may more readily become responsive to the market demands, the farmers will have to organize for marketing through the development of sound farmer owned and controlled cooperative associations.

I view cooperation in agriculture as a business agency serving the producers both as an intelligent guide in their production program and an effective instrument for merchandising farm products. Instead of thinking of cooperation among farmers as a producing proposition or as a selling proposition, we need to think of cooperation as a business form or organization that penetrates our whole agricultural industry. By this I mean cooperation, in an educational way, must reach back to production practices and forward through efficient business organization to marketing practices. It is from this concept that I look upon cooperation as a "business form or organization" adapted to the farming industry.

The chief aim of cooperative marketing is not to obtain for the producers the profits of independent merchants, but rather to contribute to and effect better merchandising methods than previously were employed in marketing farm commodities. Proper grading of farm products and standardization of grade and pack, which are essential to efficient merchandising, can be effected much more readily when farmers are organized into groups. Standardized grades facilitate trading, create confidence, and stabilize market conditions. These fundamental marketing functions, properly performed by producers, through cooperative action near the point of production, make it possible to reduce the cost of getting these commodities to market and are also a means for an intelligent use of supply, which will aid in stabilizing markets, avoiding gluts and reducing wastes.

The business transacted by cooperative buying and selling organizations will be, conservatively estimated, $2,500,000,000 during 1925—approximately one-fifth of the total agricultural business. A movement of this magnitude, with its tremendous economic and social significance, must be analyzed and guided so that its highest possibilities may be realized. Cooperation, although firmly established, is in its infancy in this country, as compared with other economic and social institutions. This is another reason for analyzing and studying the cooperative methods and experiences accumulated to date. Actual experiences need to be collected and expressed in plain language in order that they may serve as guideposts for the future. This the Department of Agriculture has been doing since 1913, when it began some fundamental research in cooperative marketing.

The department's work to date indicates that during the past 10 years cooperation has been evolving from the local type of organization into associations and federations covering large areas and handling business totaling millions of dollars annually. Although 95 per cent of the cooperative associations are still local organizations, approximately one-third of the total business at the present time is carried on by 100 of the federations and regional organizations. They, from a business point of view, are the dominant factors in cooperative marketing.

The tendency toward combinations in the business world has had an influence on the creation of large cooperative marketing organizations. The average business of cooperative associations more than doubled between 1913 and 1922, increasing, for the organizations of which the department has record, from $100,000, in round numbers, to $216,000 per association. The business of tobacco marketing

associations increased from an average of $141,968 in 1913 to $7,606,125 in 1922; cotton associations, from $191,112 to $3,405,765; dairy marketing associations, from $50,296 to $166,683; and fruit and vegetable organizations, from $153,336 to $284,081. These figures do not take into account the business done by the federations of which many fruit and vegetable and dairy organizations are members.

This increase in volume of business has resulted in progress in methods of operation and merchandizing. It has brought about, on the whole, economies in operation, a greater insistence on standardized products, easier financing, and has encouraged capable executives to enter the service of cooperative associations.

Another important problem of cooperation is the development of a cooperative spirit or understanding throughout the rural communities. It will be of little value to set up large and efficient cooperative business organizations if they are not understood and supported by those whom they seek to benefit.

It is universally recognized that the future of cooperation depends upon the knowledge which the individual producer has of its possibilities and limitations. He must take a long-time view of the movement. The producer must learn to test his association, not by the price advantage it may offer him this year, but by the services through which it may contribute to the stabilization of production and distribution. Our agricultural colleges and other State and Federal institutions must broaden their curricula to include cooperative education—a form of education that will aid the members, officers, directors, and officials to a more thorough understanding of the function and meaning of cooperation.

There is also a real need for a better understanding and appreciation of the cooperative movement by the general public. Farmers cooperatives must find and fill their place in the agricultural, commerical, and industrial life of the Nation. To this end each interest must be brought to know, understand, and cooperate with the others.

Increasing Farm Efficiency

Let us not forget that after all the foundation of a prosperous agriculture must always lie in efficient and rightly adjusted production. Marketing can not be separated from production. Fitting production to the needs of the market, moreover, implies more than merely furnishing products in suitable volume. Consumers are interested in quality as well as quantity. Farmers lose millions by offering products that the market will take only at a discount. They many times lose by not maintaining a proper balance among their different enterprises, but not raising good types of livestock, by not sowing the best available seed, by not making a correct choice of crops, by not employing the right size and type of machinery, and by not managing their business to the best advantage. Probably the farmer can do more for himself on the farm than anyone can do for him off the farm.

Efficiency in farm production is a complex thing. It is not enough to produce crops at the lowest possible cost. Nor yet does it suffice to have various farm enterprises in their right relationship to one another. This may all be accomplished without insuring a profitable

agriculture. Efficiency in cutting costs and in keeping a proper balance among different farm enterprises frequently benefits the consumer more than it benefits the producer. This happens when increased facility in production leads to an increased volume of production irrespective of market needs. It is easy to see how this comes about. Not all farmers increase their efficiency at the same time and in the same degree. Those who are in the lead have an advantage over the rest. These men are of course tempted by their special profits to increase their output. As the general average of efficiency increases and production costs go down, agriculture as a whole tends to increase its production until the benefit of its lower costs is wiped out by lower prices. Obviously the only remedy for this difficulty is such an adjustment of acreage and of the output of animal products as will prevent increased efficiency from being immediately translated into increased volume of goods.

Decreasing Production Costs

One way in which producers can increase their effectiveness is by decreasing their costs of production. In every region there are some men producing at much less cost than the great majority of their neighbors, whereas others are producing at costs much above the average. The men who produce at low cost do so because they have learned just how to use their resources and their labor, and just what methods to use to produce most efficiently. Thus in the Corn Belt some men use 20 hours of man labor and 40 hours of horse time to produce 50 bushels of corn, whereas other men, who employ their labor more efficiently, obtain the same product with only half as much labor. The same variation in labor efficiency has been found among wheat growers, cotton growers, tobacco growers, and others. These differences are due not only to the use of labor-saving machinery, but to the fact that some men follow practices with regard to the use of fertilizer, improved seed, time of conducting operations, and methods and practices in production that make every hour of labor count.

In livestock production, too, there are equally great variations in efficiency from farm to farm, and equally great opportunities for cutting costs on many farms. Some men incur high costs by using inferior stock or feeding improperly. Others use good technical methods so far as feeding and care go, but incur extra expense by failing to adjust their rations to changing prices. The combination which is most economical at one time may be very expensive at another. Farmers need to be ever alert to make sure that they are using the most economical practices possible for each change in prices.

III. Legislation

In spite of all the improvements since 1921, conditions on the farms are not yet satisfactory. Much remains to be done to put agriculture on a prosperous basis. The purchasing power of farm products in October was still 13 per cent below its pre-war level. A 13 per cent decline in the buying power of farm products occurring suddenly in normal times would be a calamity. Agriculture is convalescent now after a severe illness. We must not focus all

our thought upon the improvement effective since the crisis of 1921. Part of our attention must be directed to further improvement.

I believe our national policy should reckon with the fact that agriculture is not yet restored to equality in the general economic situation. Whatever responsibility for this situation rests with public agencies must be fully recognized. Much helpful legislation has been passed during the last five years. More can be done.

Farmers have been helped tremendously by the Federal farm loan act, whereby mortgage money is made available to them on better terms than were ever granted before. They have been assisted by the agricultural credits act of 1923, which provides a system of intermediate credit tending to relieve commercial banks of a type of farm paper that they are not well adapted to handle.

They have been assisted in orderly marketing by the administration of the Federal warehouse act, which makes Federal warehouse receipts acceptable as loan collateral in the principal money markets.

Legislation passed in recent years has defined the rights and privileges of cooperative associations and promoted their development.

Tariff legislation has been useful, particularly to dairy farmers, fruit growers, and hard-wheat farmers, sheep raisers, flax raisers, and sugar beet and cane producers.

Conditions in the livestock trade have been improved by the administration of the packers and stockyards act.

Four subjects stand out prominently as suggesting a need for legislative or administrative action—freight rates, taxation, the utilization of the public domain, and cooperation. I will discuss each of these problems in more detail later in this report. Here I merely wish to point out that in two of them, freight rates and taxation, remedies for existing evils are absolutely dependent on action by Government authorities, and that the third subject, cooperation, offers very large possibilities for useful advisory action by Government agencies acting under legislative authority.

The expansion of our farm-land area may require legislative action. I am opposed to bringing new areas under cultivation until we have found a market for the products we are now producing. There are two things the Government may do to prevent injudicious expansion of farm land. It may regulate its own land-settlement projects wisely, and it may discourage undesirable private projects. There is a field here for useful and legitimate Government activity for the protection of agriculture and the promotion of the general welfare. I am as strongly in favor of such activity as I am against attempts to determine economic law by means of legislation.

Certain recent legislation will be of definite benefit to agriculture. One significant measure enacted during the last session of Congress was the Purnell Act, authorizing additional endowments for the agricultural experiment stations. This measure will mark a new epoch in the history of the experiment stations. It will eventually treble the Federal appropriations for their support, with a corresponding breadth of research conclusions along economic lines made available to farmers.

In addition to the amounts now received by the agricultural experiment station, the Purnell Act authorizes additional appropriations

of $20,000 for the fiscal year ending June 30, 1926; $30,000 for the fiscal year ending June 30, 1927; $40,000 for the fiscal year ending June 30, 1928; $50,000 for the fiscal year ending June 30, 1929; $60,000 for the fiscal year ending June 30, 1930; and $60,000 for each fiscal year thereafter. This money is to be paid to each State where experiment stations are now established, and is to be used only for research and experiment. Supervision of the work done under the Purnell Act is intrusted to the Department of Agriculture, which is fully alive to the opportunity thus afforded for close cooperation between research and extension forces in Federal and State organizations. Passage of the Purnell Act was recommended by the President's agricultural conference.

Another recommendation of the conference that was enacted into legislation was a proposal that the Federal farm loan act and the agricultural credits act of 1923 should be amended to give agricultural credit corporations chartered by the United States the same privilege to rediscount paper with the Federal intermediate credit banks that is now given to credit institutions chartered under State laws. This measure is expected to foster the organization, particularly in livestock territory, of properly capitalized agricultural loan companies. A larger number of soundly organized, adequately capitalized, and properly managed loan companies operating under Federal supervision and enjoying access to the rediscounting facilities of the Federal intermediate credit banks seems very desirable. Such institutions would greatly improve the credit facilities of livestock breeders.

A third recommendation made by the President's conference related to livestock grazing on the national forests. It urged that until a uniform plan of leasing is agreed on there should be no increase in the fees charged. Congress accepted the recommendation and passed an act authorizing the Secretary of Agriculture in his discretion to waive any part or all requirements in respect to grazing fees for the use of national forests in drought-stricken regions during 1925. Simultaneously, it was announced that there would be no increases in the grazing fees charged on the national forests for the years 1925 or 1926.

Measures were also passed amending the Clark-McNary Reforestation Act and facilitating the work of the Forest Service; authorizing a forest experiment station in California; providing for a general utility topography survey of the United States; and creating an Alaska game commission.

Freight Rates

I believe that we must have substantial readjustments in freight rates. High freight rates constitute one of the many causes that have contributed to the depression in farm prices, especially in areas distant from the market. It is generally conceded that the entire freight-rate structure needs overhauling. Freight rates the country over have grown up in a haphazard way and as a result of all sorts of local considerations. It is my opinion that a careful study should be made of the entire freight-rate structure. On the basis of such a study it should be possible to make rate adjustments that take into account the market value of farm products as reflected over a

reasonable period of years and likewise the influence of freight rates on the economic development of different regions and of the country as a whole. I realize that adequate income to the carriers must be fully reckoned with as a factor in rate making, because efficient and adequate railroads are indispensable to a profitable agriculture.

There have been only minor changes in the freight rates on farm products in the last year. Our index showing changes in freight rates of 50 representative agricultural commodities stood on January 1 at 158.2, or 58 per cent above the 1913 level. Since then there have been no changes great enough to affect the index.

The Hoch-Smith resolution, passed at the last session of Congress, directs the Interstate Commerce Commission to effect such lawful changes in the freight-rate structure as will promote the freedom of movement of agricultural products affected by the depression, including livestock, at the lowest possible rates compatible with the maintenance of an adequate transportation service.

In response to this order the Interstate Commerce Commission has initiated proceedings to determine among other things what products of agriculture, including livestock, are affected by the depression and what, if any, reductions may lawfully be effected in the rates of charges on products of agriculture.

Meanwhile the railroads have introduced a petition asking for a 5 per cent increase in all rates west of the Mississippi. These two cases are now being heard together, and one of the main points of contention is the farmer's ability to stand higher rates.

In relation to pre-war conditions, the prices of farm products are not yet on a par with freight rates. The level of farm commodity prices in September was 144 per cent of the pre-war average, whereas freight rates on agricultural commodities were 158 per cent of the pre-war average. Moreover, the prices of agricultural products fluctuate greatly from year to year, whereas freight rates are stable and are not frequently changed. The burden of the post-war increase in freight rates fell heavily on agriculture because the rates were increased just as agricultural prices started downward and remained high while agriculture was undergoing a very severe depression. The ability of agriculture to pay transportation charges should not be reckoned on the conditions of any given year, but on probable future conditions, unless freight rates can be made more flexible, being raised when prices are high and lowered when they decline, within reasonable limits.

The Farmer's Tax Problem

The recent general improvement in farm earnings has been accompanied by a slight reduction in farm taxes. Recent reductions in farm taxes seem insignificant, however, when compared with past increases. Farm-land taxes in Missouri averaged 8 cents per acre in 1881; in 1924 they were 40 cents. The average tax in North Dakota was 23 cents per acre in 1916 and 48 cents in 1924. Texas farmers paid 9 cents per acre in 1914 and 20 cents in 1923. Similar increases are found almost everywhere. They have been accompanied by better roads and schools and more efficient public service in all its branches. The essential nature of many of these services assures them of continued popular support at whatever cost to the public.

Presumably it is no more possible to bring about a return of the low taxes of even 10 years back than it is to stop progress in any other field. But unless a more equitable distribution of the tax burden can be brought about, the agricultural industry may expect recurring periods when taxes will consume an undue proportion of farm income.

It is now generally recognized that excessive taxation of industrial earnings slows down production, discourages investments in productive enterprises, and generally stifles the prosperity of the country. These effects are felt by the industrial portion of the country as the result of taxes which are levied largely on the basis of earnings, and which are lighter when earnings are least. Fifty-one per cent of the total taxes paid by construction companies in 1923 were income and excess-profits taxes paid to the Federal Government alone. The percentage for manufacturing corporations was 49 and for wholesale and retail concerns it was 46.

Farm taxes, on the other hand, are chiefly general property taxes, levied by the States and the local units on the basis of capital value, and they bear little or no direct relation to current farm earnings. Only 29 out of every thousand farmers paid any Federal income tax at all in 1923. Since farm taxes can seldom be shifted to the consumers of farm products in the form of higher prices of products sold, it must be clear that the taxes now being levied on agriculture are more capable of exercising a depressing effect than are the taxes on almost any other class.

Investigations by the department bear out this belief. In 1922 State and local taxes took 59.6 per cent of rents from 23 farms studied in Monroe County, Ind. In Wells County, N. Dak., taxes on 63 surveyed farms amounted to 85 per cent of the rents for 1923. It is a matter of common knowledge that during the disastrous period from the close of the war to 1924 there were many farmers in all parts of the country who failed to "make their taxes."

It is true that the same factors which lead to high ratios of taxes to farm rents in some years also cause extremely low ones at other times. The wide differences from year to year in the relation of farm taxes to the earnings of the taxed property illustrate the need of a closer relationship between property earnings and property taxes. If property is to continue to bear a large share of the taxes levied by the States and minor political divisions, greater consideration should be given to differences in earning power which exist between classes of taxable property when tax assessments are being made.

But there is no justification for taxing only property. The great volume of income from other sources, which now escapes taxation for State and local purposes in many parts of the country, could well be called upon to assume some part of the total tax load. Income and inheritance taxes, levied by some of the States, now reach many of these classes, although in varying degree. Other special forms of taxation have been devised to supplement further the property tax and to obtain a more even distribution of the tax burden over the whole people. Broadening of the sources of tax revenue is a matter of great concern to the farmer, although conditions within States vary so widely that no particular form of taxation could be considered of equal value in all places.

Supplementary tax revenues of the types referred to are usually applied to defray the ordinary expenses of the State central governments. Counties, townships, and other local districts, exclusive of incorporated places, on the other hand, obtained 97 per cent of their tax receipts from the property tax in 1922. It is difficult to explain why tangible property should bear almost the entire local tax burden besides contributing a substantial share to the general expense of the State governments. A few of the States have adopted the practice of returning a part of their income, inheritance, and other special taxes to the local districts in which they were collected. The State of New York, for example, returns 50 per cent of its income tax in this manner. Wisconsin has a similar practice. The further spread of this practice will prove particularly beneficial to those farmers who live in local districts which include a considerable scattering of urban wealth, and in which urban populations largely determine the types and standards of public service to be maintained.

One of the most important factors which contribute to the excessive taxation of agriculture is the tendency of many States to improve the public schools and public roads largely at the expense of the local districts. Indiana farmers paid 66 cents out of each tax dollar to the counties and townships for these uses alone in 1923. Investigations in Boone County, Mo., show that 56 per cent of all farm taxes went for the same purposes in that locality in 1925.

Both the highway and the public school have outgrown their early local surroundings. The motor vehicle has made a State and national problem of the public road. School standards have been pushed forward step by step in all of the States by means of general laws.

The time has come when the States should face the highway and school problems frankly, and determine upon methods of financing which are consistent with the benefits which those institutions confer upon the State as a whole.

The Government's Relationship to Cooperative Marketing

The relationship of the Government to cooperative associations may be loose and informal or close and authoritative. It may range all the way from a mere let-alone policy to one of thoroughgoing supervision and minute regulation. Neither extreme, of course, is within the range of practical policy. The Government is already performing services for cooperation that put the let-alone policy out of consideration.

On the other hand, it is not proposed in any responsible quarter that the cooperative movement should be hampered by Government regulations. Cooperation in the United States has developed from the needs and experiences of the farm people. The weight of experience in this country shows that it should begin as an economic movement of the rural communities and that it should be free to develop in accordance with their needs and the opportunities for service. The experience in European countries also points to this fact. It is improbable that the Danish Government, for example, at any time during the history of the cooperative movement in that country could have developed a plan of cooperation as admirably adapted to the needs of the Danish farmers as is the present system. Neither

is it likely that the Danish Government by decrees or regulations could have made cooperation the important part of the national life that it has come to be through spontaneous, untrammeled growth.

It seems obvious that supervision and control are not desirable. Cooperative associations are business concerns. Like other business concerns they must eventually stand or fall by themselves. They can not fairly be asked to accept a degree of regulation and control from which private distributing agencies are exempt. Removing responsibility for their actions from the cooperative associations themselves to the Government might be fatal to their efficiency. It would certainly not encourage men of executive ability to seek managerial positions in the movement. Efforts to regulate cooperation minutely by law or by administrative edict would cripple the initiative of the cooperative associations and force them into a rigid mold when their greatest need is flexibility. Excessive regulation might smother the movement.

What the department is already doing indicates the nature of the service it can give to cooperation. It is studying marketing problems and making surveys indicating what are the prospects of various cooperative projects. It is examining the causes of success and failure in cooperation, and giving counsel to association boards of directors and managers. It is helping by counsel and advice groups of farmers to develop effective organizations and to plan wise merchandising policies. It is popularizing the use of uniform and up-to-date accounting systems and office records among cooperative associations. It is analyzing marketing operations to reveal their strong and weak spots and assisting associations in developing their own methods of market analysis. It is aiding cooperatives to extend their markets at home and abroad. It is acquainting American cooperators with the experience of cooperators in other countries. It is furnishing market-news services, and establishing commodity grades and standards to facilitate trading. It is helping producers to correlate their production plans, so that the hills and valleys of production can be leveled out to some extent.

What the Government can do further to assist the cooperative movement depends upon the funds available for such work and the demands of the cooperative associations. The department stands ready to extend its services to the full extent of its present facilities, and to recommend such enlargements of its research work and services as shall appear advisable after consultation with the cooperative organizations and a careful survey of their needs. The direction which further services should take can best be indicated by considering the problems confronting cooperative associations at the present time.

The personnel of the Bureau of Agricultural Economics is studying the problem of marketing and distributing farm products. To put the information in a form in which it will be immediately available and useful to the cooperative organizations requires a type of extension workers which the bureau does not have at the present time.

One possible means of further service to the cooperatives, therefore, is the employment of commodity specialists, who would be

familiar with the needs of the cooperative organizations on the one hand, and with the research and service work of the department on the other hand. These men would form a contact between the associations and the department, and would disseminate current crop and market information, and information regarding price trends, conditions of supply and demand, and other useful information. At the same time, they would be instrumental in guiding the research work of the department toward a closer study of the special problems of cooperative associations.

The business organization and management of cooperative associations will always be of paramount importance. The business analysis studies that have been begun could be profitably extended. This is in line with the practice of large corporations which are devoting considerable sums to research in the fundamental problems of merchandising, production, financing, and management. If the cooperative associations are to reach the same plane of efficiency as private organizations, it is desirable that they have the advantage of similar studies. The department can not undertake to do this work for the cooperatives, but it can, very properly, outline the field and develop methods in this important and difficult undertaking.

A third problem, not the least important, is the dissemination of knowledge to farmers regarding the principles and aims of cooperation. This is important to forward the development of sound cooperation. The department can make an important contribution in this field. The employment of specialists in cooperative education, to work with State agricultural colleges, State boards of agriculture, and the cooperative associations in promoting the knowledge of cooperative principles and practices, should be helpful in developing a sound point of view toward the movement.

I have indicated only some of the larger problems in which the department can properly render assistance. There are others of almost equal importance and still others will arise as cooperation advances. It is hoped that the department's services to cooperative associations will establish a closer relationship between the organized farmers and the State and Federal agencies engaged in scientific research in the field of agriculture. These agencies can serve all producers by a special effort to make their services and the results of their research available to the organized groups.

Agriculture and the Public Domain

The existing policy with respect to land utilization on the public domain has had much to do with the troubles of western agriculture in the past few years. Permitting the public domain to be sporadically occupied by homesteaders in holdings of uniform size with little reference to the capacity of such a holding to maintain a family except as determined by the inexperienced settler, has added greatly to the unnecessary loss and misery attending the process of agricultural expansion, has contributed to the undue development of cereal production from which our established farmers have suffered, and has greatly complicated the problems of the range industry.

Furthermore, allowing the unappropriated and unreserved lands of the public domain to be used as a grazing commons has greatly

increased the instability of the livestock industry of the West. That portion of this great industry dependent upon the public domain, involving an investment of hundreds of millions of dollars, is engaged in a competitive struggle to obtain the limited grass on the public lands on the principle of "first come, first served." It is true that some of the stockmen have been so fortunate as to secure practically exclusive control of the use of certain areas of the public domain through the ownership of strategic locations for water supply, or through other favorable conditions, but the great majority have no such immunity from cut-throat competition.

Under such conditions there is a premium on destructive and wasteful use. Each man tries to get his stock on the young and tender grass ahead of his competitor and close-graze it till the last sprig is gone. It is impossible to maintain a reserve supply of forage against a dry season. It is equally impracticable to coordinate properly the seasonal use of the range on the national forests or other lands with that on the unreserved public domain.

As a result of these conditions the public range lands are steadily deteriorating in usefulness. While potentially a valuable national resource, the forage is being destroyed by improper use. Moreover, the denudation of the land has greatly increased erosion and has intensified the destructiveness of floods. Experiments, investigations, and practical demonstrations have shown that denuded range lands can be restored under a system of regulated grazing which will arrange for the right number and class of stock at the proper season of the year, provide for the even utilization of the range and permit the most valuable species of forage to mature seed. However, it is impossible to employ such methods of utilization on the 180,000,000 acres of unallotted and unreserved public domain under our existing land policy.

For a number of years interested persons and agencies have agreed that a far-reaching change of policy is imperative. Indeed, each year for the past two decades some form of legislation relating to this problem has been introduced in Congress, but because of the diversity of opinion owing to the varied conditions in different parts of the West, no far-reaching legislation has been passed. At the present time a congressional committee is giving the problem careful study, and it is for Congress to determine the exact form of policy which shall be developed. Indeed, the exact form of policy or the decision as to what agency shall be charged with its administration are comparatively unimportant provided that the problem shall be settled in such a manner as to promote an adequate utilization of the public domain and a stabilization of the range industry. In order to accomplish these purposes it will be necessary to recognize certain basic facts and principles:

1. It is uneconomic to permit homesteaders to take up land at random on the public domain. Such a policy works havoc in the established grazing industry, and at the same time encourages settlers to undertake a farming enterprise impossible of success. Much of the homesteading has been merely for the purpose of selling out to ranchmen, forcing the latter to increase their capitalization unduly, sometimes in the face of falling prices for livestock or credit strin-

gency. Careful selection should be made of such portions of the public domain as afford a reasonable promise of successful farming, not in scattered holdings where the possibilities of developing a satisfactory community life are remote. The remainder of the public domain should be definitely devoted to the range industry until such time as changing physical or economic conditions justify a different form of use.

2. In many localities the public domain is only one segment of the circle of year-round provision of feed for livestock. It must be adequately coordinated with the use of the summer pasturage of the national forests, as well as with the provision of winter feed on lands capable of raising crops. As my predecessor expressed it in his annual report for 1923: "Unregulated spring range has become the neck of the bottle. Winter feed and summer pasturage are available for more stock than can be subsisted during the interval unless the spring range on the open domain can be protected from overgrazing and utilized in a coordinated way with the other and stable factors in the round of the year." The economic stabilization of the livestock industry should be promoted by providing adequate reserves of pasturage against recurring years of drought by a reasonable degree of elasticity in grazing fees or in rentals, and by the utmost practicable stability of tenure consistent with the public interests involved.

3. The privilege of grazing based upon prior use and occupancy and the ownership of improvements on adjacent property employed in connection with the public range should be fully recognized and carefully conserved. Attention should also be devoted to providing sufficient pasturage for the requirements of homesteaders and other farmers in the vicinity of the range. Suitable provision should be made for necessary ingress and egress, and for the movement of livestock, also for prospecting, locating, developing, and patenting mineral resources.

4. So far as practicable the principle of local option should be observed in extending regulation over the public domain, and the policy of local self-regulation should be employed in developing a uniform program consistent with the larger public interests involved.

IV. The Department of Agriculture: General Administration

The business policy of the department is to insure value received to the taxpayers for every dollar spent for Federal activities. The cooperation displayed by members of the department in carrying out this policy is gratifying. Typical instances of economies effected, better business arrangements established, etc., during the year have been reported to the Budget Bureau and will be found in the annual report of the director of that bureau for 1925, pages 109–118.

An important reorganization of the central business administration of the department has been effected to concentrate authority and responsibility, establish better and more economical administration, and eliminate duplication of work and superfluous or overlapping procedure. Under the new arrangement an officer of the department has been designated as director of personnel and business administration, to supervise and coordinate all departmental business

activities, including personnel administration, budget, fiscal and accounting matters, purchasing of supplies and equipment, traffic, housing, etc.

As a part of this plan nine offices which formerly reported directly to the Secretary have been consolidated into one organization designated as the Office of Personnel and Business Administration. The branches consolidated were (1) the office of personnel; (2) the salary classification office; (3) the office of budget and finance; (4) the divison of accounts and disbursements; (5) the office of accounts serving units under the office of the Secretary, office of publications, office of experiment stations, agricultural extension service, and bureau of home economics; (6) the division of purchases and sales; (7) the office of the traffic manager; (8) the office of personnel and fiscal inspection; and (9) the office of the chief clerk of the department, and subsidiary units, which include the mechanical shops, building maintenance, department post office, telegraph and telephones offices, section of mail and files, and similar units.

The new arrangement has been in operation a sufficient time fully to justify its establishment and to demonstrate its value in facilitating business. It has already resulted in a material saving in personnel and salary expense. Further improvements and reductions in such costs are in prospect.

Central Units Merged

In a similar manner the office of publications and the press service, the two central units of the department engaged in information and publication work, have been brought together in one organization which has been designated as the office of information and placed under a director of information, who is charged not only with the administration of this unit but also with the general supervision and coordination of the information and publication activities of all branches of the department. This arrangement has resulted in a much more efficient and satisfactory handling of the work and in a reduction in operating costs.

In connection with the reorganization of the central business administration of the department, assistance has been given during the year by the United States Bureau of Efficiency, which, at the request of the department, has assigned several members of its staff to make detailed studies of present methods of operation, with a view to suggesting such further changes as may be beneficial. It is necessary that the departments have an agency of this type which can be called on to furnish trained investigators for the purpose of conducting investigations upon which improvements in operation may be based.

On June 30, 1925, the department had on its rolls approximately 20,500 employees, of whom 4,800 were located in and 15,700 outside of Washington. The turnover in the personnel during the fiscal year 1925 was 11.49 per cent, or 2.32 per cent less than for the preceding year. The application of the salary classification act has brought about a material improvement in the employment situation in the department. Progress has been made in establishing more

uniform rates of pay for equal work, but some inequalities still remain which can not be satisfactorily adjusted until additional funds are made available for this purpose. The following, in so far as practicable, of the general policy of filling vacancies by advancement from within the ranks and the granting of a reasonable number of promotions on the basis of demonstrated efficiency and productive service has had a very salutary effect on the morale of the employees of the department as a whole.

Housing Situation

The housing situation of the department continues to be deplorable. More than 40 buildings widely scattered over the city of Washington are still occupied by departmental activities. This seriously interferes with the administration of the work of the department and is extravagant rather than economical. Aside from the better administration and supervision to be gained by properly housing the departmental activities material economies in guarding, cleaning, messenger service, and trucking service could be effected if the department were housed in fewer buildings more closely related to each other and to the central administration.

A committee headed by the Assistant Secretary, which I appointed to consider the problem, has reported in considerable detail upon the department's housing requirements, with specific recommendations for meeting the situation. The suggestions contained in this report are receiving my careful consideration, and it is hoped that they may prove of value not only in meeting the needs of the Department of Agriculture but also in connection with the general subject of Government housing in Washington. In brief, the report recommends the construction of the long-delayed central building connecting the two existing marble wings which were erected in 1908, and at the same time the erection of a large structure upon Government-owned land at the north end of the department's reservation. On the basis of meeting present needs it is believed that the adoption of these recommendations would provide adequate housing for the department.

V. The Department of Agriculture: Economic Research and Administration

The farm population of the United States decreased approximately 182,000 during 1924, according to the estimates based on a survey of 25,000 representative farms recently made by the department. This is a drop of 0.6 per cent during that year, the estimated farm population on January 1, 1925, being 31,134,000 compared with 31,316,000 on January 1, 1924. This estimate includes not only the agricultural workers, but all men, women, and children living on the farms on that date.

The movement from farms to cities, towns, and villages in 1924 is estimated at 2,075,000; the movement to farms was 1,396,000, making a net movement from farms of 679,000 persons, or 2.2 per cent. Births among the farm population during 1924 are estimated at 763,000 and deaths at 266,000, making a natural increase of 497,000,

which reduced the loss due to the cityward movement to 182,000 or 0.6 per cent.

A similar estimate made two years earlier for 1922 showed a loss in farm population of 460,000 as against 182,000 in 1924. The gross movement from farms to cities in 1922 was 2,000,000 compared to 2,075,000 in 1924, a slight increase. The gross movement back to the farms in 1922 was 880,000 compared to 1,396,000 in 1924, a very decided increase. The net movement from farms to cities in 1922 was 1,120,000 or 3.6 per cent and in 1924, 679,000 or 2.2 per cent.

Two geographic divisions, however, the New England and South Atlantic States, showed an increase in farm population for the year 1924, of 0.9 per cent and 0.2 per cent, respectively. All other divisions showed decreases, the Mountain States leading with a loss of 2.8 per cent.

The decrease in farm population due to the cityward movement, not taking into account births or deaths, was highest in the Mountain States, 4.3 per cent, followed by the Pacific and west South Central States. In all other divisions, except New England, the percentage of decrease due to the cityward movement was equal to or less than the average for the whole United States (2.2 per cent). New England alone showed a gain of 0.3 per cent, since more people moved from cities to New England farms than left farms for cities.

The movement from farms to cities was found to be at highest rate in the Mountain States, 13.8 per cent, followed by the Pacific, New England, Middle Atlantic, and east North Central States in order. In the movement to farms from cities, the Mountain States, again lead with 9.5 per cent, followed by the New England, Pacific, Middle Atlantic, and east North Central States.

Movements of population from the farm to the city and from the city to the farm are an important index of the agricultural situation. A glance at these movements during the last five years throws light on present tendencies.

Apparently in 1920 there was a net gain in total farm population of approximately 500,000. The total in 1919 according to the census had been 31,614,269. Unusual prosperity in 1920 apparently restrained the customary flow to the cities of young people between the ages of 20 and 25. Moreover the annual movement of prosperous retiring farmers to town was offset by the arrival of city people drawn to farming.

In the following year an opposite tendency was manifested. The collapse of farm commodity prices in 1921 was accompanied by an unusual movement of population to the cities. As a result, the net increase of farm population during the year was only 200,000.

In 1922, according to a survey made by the department, the net movement of persons to cities reached the 1,000,000 mark, and there was a net loss in the farm population of 460,000 persons.

The loss of farm population continued in 1923, causing a net decline equal to and perhaps exceeding that of the preceding year. Apparently, however, the movement reached its height in 1923.

As the figures above quoted show, a survey made in 1924 indicates that although the forces tending to drive people to the cities were still strong, opposing forces were sending back from the cities a

larger number than formerly, so that the net loss of farm population for the year was reduced to 182,000.

Opinions as to the make-up of the return movement of population to the country in 1924 are necessarily speculative. Doubtless the return flow included many farmers who had sold farms in recent years but had been obliged to take them back because the intending purchasers were unable to maintain their payments.

Others were probably farm owners who found after a year or so of trial that they could not afford to live in the city on the rents from their farms. Probably also there were many former farm tenants and laborers who had not found their expectations of city life fulfilled. It seems that the trend of farm population is now returning to normal.

In normal times there is a constant interchange of population between the country and the city. As farmers retire to cities, so city people retire to farms. Laborers move back and forth from farm to city and from city to farm. On the other hand, a stream of youth of both sections representing the farm-reared human surplus moves permanently from the country to the town. It would seem that all agencies working for the general welfare, whether rural or urban, should do what is possible to reduce to a minimum the inevitable dislocations caused by this interchange of population. There is a natural balance of population between the farm and the country which can not be violently disturbed without heavy loss in economic and human values.

The Farmer's Cost of Living

A study made of the cost of living among 3,000 widely scattered farm families indicated that the average total value of goods and services used per family in one year was $1,504. Of this value, $634 was furnished by the farm in food, fuel, and housing.

Among the several items of living, food took 41.2 per cent of the expenditure; clothing 14.7 per cent; housing 12.4 per cent; health 3.9 per cent; education, etc., 6.3 per cent; life insurance 2.3 per cent. Compared with about 12,000 industrial families these 3,000 farm families spent about 3 per cent more of their total expenditure for food and 1 per cent more for fuel and light, but they spent 2 per cent less for clothing and 1 per cent less for house rent.

Although some wide variations in family living costs were found among different groups in the same States, the average living cost per family by States did not vary much. It was found that farm families increased their proportionate expenditures for recreation, education, health, and advancement generally as their total expenditure increased.

Price Spreads in Distribution

Spreads between prices received by producers and those paid by consumers of agricultural products are of great interest and importance at this time. The most important factor in the creation of these large spreads is the cost of extensive services imposed upon the distribution structure as a result of present-day methods of living. Services multiply in the terminal markets. It is here that the greater portion of the difference between producer price

and consumer price is incurred. Studies conducted by the department indicate this fact. A total of 64 per cent of the difference between the price received by the producer and that paid by the Chicago consumer of Wisconsin potatoes during the 1922–23 season was absorbed in the movement through wholesale, jobbing, and retail agencies within the city. During the same season 72 per cent of the spread between the producer price and the price paid by the consumer of northwestern Winesap apples was taken up by marketing agencies in the New York port district. In 1920–21 a study of Connecticut onions sold in the Boston market shows that 79 per cent of the spread between producer and consumer was incurred within the city.

Study of city distribution margins and contributing factors has been carried out in some detail in the New York port district in cooperation with the port authority. Various phases of terminal distribution including jobbing and retail margins on 14 important fruits and vegetables sold within the port district during the February 1923–May 1924 period were studied. Although this study relates particularly to conditions existing in the New York port district facts of general importance have been brought out. The combined jobbing and retail margin for the 14 commodities was found to be about 47 per cent of the final retail price. About four-fifths, or 80 per cent, of this combined margin measures the size of the average retail margin for the 14 commodities.

Terminal handling costs, which consist mainly of freight-car movement within the terminal area and truck hauls to jobber and to retailer, amounted on the average to somewhat less than 10 per cent of the retail price. These costs for a sack of Michigan potatoes were greater for the terminal movement of about 15 miles than they were for the entire road haul of over 1,000 miles. The chief element of cost in terminal handling is that of trucking. An analysis of this item of expense indicated that of the average dollar paid as trucking charges on fruits and vegetables, 25 cents went to pay for idle time because of lack of work during trucking hours, 21 cents were necessary to meet the expense of unproductive work—delay at terminals, trips with part loads, and other partially wholly unproductive efforts—26 cents paid for operating expenses incurred during productive operation, 14 cents were required for loading expense, and 14 cents remained for the owner as salary and profit.

Thus 46 cents out of each dollar received from trucking charges were required to maintain facilities in idleness and unproductive service during working hours. Notwithstanding the extent of distribution inefficiency indicated by this analysis, there appears to be but slight possibility of any great saving in trucking costs with the present handicap of out-of-date receiving arrangement. New methods of handling and more modern receiving facilities are required before the cost of trucking can be materially reduced.

The largest scale single segment of the spread absorbed by any one agency is that required for retail service. That the consumer pays for increased services by higher prices is plainly apparent. Equal quantities of fruits and vegetables of similar grades were sold in New York cash and carry stores at prices which averaged 14 per cent under those charged in credit and delivery service stores.

The consumer also pays for the privilege of being afforded a variety of sizes and qualities of a particular commodity from which he may select the ones most suited to his needs and of being allowed to purchase in small quantities. In these circumstances the cost of storage space and the risk of spoilage which appears to amount to about 5 per cent are borne chiefly by the retailer.

It is surprising to note that, regardless of the variation in the average quantity purchased of each of the commodities included in the New York study, the combined jobbing and retail margin was about 12 cents on the average-sized purchase of each commodity. Since the average quantities purchased varied from 1½ pounds for western to 6½ pounds for old potatoes, it seems apparent that the distributing cost was occasioned by the making of the sale rather than by the size or value of the sale. Reduction of this expense, therefore, would appear to lie in an increased size of consumer purchase of each commodity. In bringing this about, the consumer has definite responsibilities in assuming a portion of the spoilage risk now borne by the retailer and in providing adequate storage space for increased purchases. Whether such changes in consumer purchasing habits are desirable or possible remains to be proved.

As a result of the studies in the distribution field, it appears that profits of the various distributing agencies are not of first importance in determining the wide spreads observed between producer prices and prices paid by consumers of certain agricultural products. Profits are of relatively small significance when expressed in terms of the retail price to consumers. It is the cost of services rendered by the various agencies of distribution which are of greatest importance in causing wide spreads.

The Farmer's Use of Market News

The increased interest and use of economic information by farmers is shown by direct requests to the department for facts concerning supplies, shipments, prices, stocks and market trends, and also by the calls for material by various news distributing agencies, particularly the press associations, newspapers, and radio broadcasting stations.

The extension services of the department and the States have assisted in the distribution of all types of economic information. A general quickened interest has been reflected by the extension workers in all subjects. Several States have developed well-organized plans for distribution of crop and market information before series of local meetings, to lists of leading farmers, through county agents, farm organizations, and local press. Special acknowledgment is due to the newspapers of the country for their cooperation in the department's campaign to get the facts of agriculture to farmers and all classes of traders who handle farm products.

The market news service organization has been conducted during the last year without material change in personnel but with a decided increase in the quantity of facts gathered and disseminated. The leased-wire system now includes about 7,300 miles of leased wire, reaching from coast to coast and into Northwest, Southwest, and Southeastern States, which transmits the basic information from the national markets, gathered and distributed through 30 branch

offices of the Bureau of Agricultural Economics. Practically every farm commodity is included in this service, although a complete price-quotation service is not maintained on all of them.

The news service on fruits and vegetables has been made immediately available to producers in numerous key producing areas by the maintenance of some 37 separate field stations during the shipping period of the commodities involved. In the subject of fruits and vegetables alone over 10,000,000 copies of mimeographed reports were distributed throughout the year directly to producers and tradesmen. The Grain Market News Service has been extended to the Pacific coast and now includes news on the western barley crop.

Foreign market news on important farm products gathered by our foreign agricultural commissioners or the International Institute of Agriculture has proved to be very useful to our producers of these products. The principal effort is to interpret the significance of foreign conditions in terms to aid farmers and others in making plans for market operations.

The Grain Futures Administration

The Grain Futures Administration during the last year has continued its activities in analyzing the character of the transactions in futures on the various grain exchanges designated as contract markets under the grain futures act. In addition to the reports received daily from the clearing members of the contract markets, a close supervision of the exchanges was maintained through the examination of books and records of the important commission houses, not only in Chicago but also in New York and other outside cities.

The volume of trading during the year was unusually large, owing to enormous speculative activities on the part of professionals as well as the general public. The total trading for all grains on the 10 contract markets amounted to 31,416,196,000 bushels bought, with an equal volume sold. Of this quantity 27,942,493,000 bushels, or 89 per cent, represents trading on the Chicago Board of Trade. The trading in wheat represented more than 60 per cent of the total for all grains, the volume being 18,875,971,000 bushels, of which quantity 16,587,110,000 bushels, or 88 per cent, represents transactions on the Chicago Board of Trade.

It is therefore clearly evident that the transactions in grain futures are governed almost exclusively by the activities at Chicago, where most of the hedges are placed, although the market is primarily speculative in character.

In connection with the trading at Chicago it is of interest to compare the actual deliveries on futures contracts with the total volume of trading, the total deliveries in wheat being 31,571,000 bushels and in corn 12,950,000 bushels. In each of these grains the deliveries were less than two-tenths of 1 per cent of the total sales for future delivery.

During the latter part of the fiscal year the grain futures administration was engaged in an exhaustive inquiry into the activities of professional speculators, especially in wheat. This inquiry was instituted because of the sensational character of the market, which was marked by wide daily fluctuations and by sharp advances and drastic advances and declines in prices.

Although the investigation carried on by the grain futures administration did not disclose such large individual accounts as were commonly reported, nevertheless lines of several million bushels of wheat futures, sometimes long and again short, held by individual professional speculators, were not infrequent during the first three months of 1925. During the life of the May future fluctuations of 5 cents or more occurred on 52 days. On 16 days the fluctuation was 8 cents or more and on 6 days 10 cents or more without any apparent reason other than heavy speculative activities.

The largest long interest discovered in any one future was slightly in excess of 7,000,000 bushels and the largest individual short interest at any one time was nearly 5,000,000. The investigation revealed only eight speculative accounts that reached a net position of 2,000,000 bushels or more, either long or short, and some of these changed frequently from one side to the other, moving the market in line with their operations unless counteracted by a similar force. In 80 per cent of the cases where such transactions involved a change in net position of 2,000,000 bushels or more the price movement was in the same direction, with an average change in price of 5⅞ cents.

At the request of and in cooperation with this department, a number of the central markets have voluntarily set up administrative machinery for the purpose of preventing unwarranted price fluctuations. Committees on business conduct have been apppointed, whose members are pledged not to speculate for their personal account. Broad powers over the business conduct of members of the exchanges are to be exercised by the committees. They are also authorized to limit daily fluctuations in the market prices of grain during emergency periods. The Chicago board also adopted a suggestion that it should establish a modern clearing house. Probably no more progressive and far-reaching steps were ever taken by the exchanges to insure prices accurately reflecting supply and demand conditions. I believe they will be effective. The adoption of these plans makes it possible for the department to cooperate with the exchanges in furthering the objects of the grain-futures act. Laws are most effectual when met by sensible, sound cooperation on the part of everybody concerned.

The Packers and Stockyards Administration

The Packers and Stockyards Administration is a separate unit of the department, organized to carry out, under the direction of the Secretary, the purposes of the packers and stockyards act, passed August 15, 1921. Within the period of less than four years during which the administration has functioned, its activities have involved all the important phases of livestock marketing. The guiding policy of the organization is to carry out the spirit as well as the letter of the law as nearly as possible in accordance with its purposes, which, in a general way, are to promote fair, impartial, open, and competitive conditions in the livestock and meat-marketing process of the country. In doing this, the administration endeavors to cooperate fully with all other factors in the industry and to coordinate its own efforts with theirs in whatever way seems best for the welfare of the industry and the public.

It has been found that the functions of the administration can be performed in many instances to best advantage by proceeding

in an informal manner, and this plan is followed in all instances in which the requirements of the act can be met in this way. There are cases, of course, which can only be handled through formal procedure. There are numerous matters which require regular attention by the administration, such as registration by market agencies and dealers, filing of tariffs by market agencies and stockyard companies, posting of new stockyards coming within the jurisdiction of the act, the regular auditing of books and records of persons subject to the act, the classification and tabulation of information contained in periodical reports, and similar activities. In addition to these regular functions, of course, the necessary attention is given to the irregularities which the law is intended to prevent.

Through an amendment to the general rules and regulations promulgated under the act, effective September 1, 1923, bonds were required of commission men covering funds handled by them in a fiduciary capacity. Through a rider in the acts making appropriations for this department for the fiscal years 1925 and 1926, the authority of the Secretary was extended, authorizing him to require bonds of all market agencies and dealers for the purpose of securing payment for all livestock purchased by them at the public markets, and the general rules and regulations of the administration were amended accordingly, effective November 1, 1924. There are numerous instances in which these bonds have afforded protection to shippers and others interested in livestock marketing amounting to several thousands of dollars.

The matter of suitable scales and proper weighting of livestock has received additional attention during the fiscal year. The administration has two weight supervisors, who devote their attention to the weighing facilities. Satisfactory progress is being made in the installation of more adequate methods for the testing of scales.

There are local supervisors stationed at 20 of the leading markets. In addition to their usual duties of observing the general marketing operations and bringing about improvement along lines indicated by the packers and stockyards act, the supervisors have given special attention during the year to the weight and quality of feed fed in the stockyards. As a result of this special effort, material improvements were made in the character of the service rendered in connection with the feeding of livestock.

At the close of the fiscal year there were 76 public stockyards, approximately 1,200 market agencies, more than 4,000 dealers, and approximately 850 packers subject to the law. It was estimated at the close of the fiscal year ended June 30, 1924, that approximately 500 packers were subject to the law. Although this estimate was based on the best information available at that time, it has been found to be too low. The change in the estimated number of packers subject to the law from 500 to 850 is due to a revision of the estimate and not to an increase in the number of packers.

The Armour-Morris Merger

The complaint of the Secretary of Agriculture against Armour & Co., of Illinois, Armour & Co., of Delaware, North American Provision Co., J. Ogden Armour, and Morris & Co., issued February 17,

1923, was dismissed without prejudice September 14, 1925. This complaint was filed as the result of the acquisition by Armour & Co. of the physical properties, business, and good will of Morris & Co., the basis of the complaint being section 202, subdivision (e) of Title II of the packers and stockyards act, which reads as follows:

> It shall be unlawful for any packer to engage in any course of business or do any act for the purpose or with the effect of manipulating or controlling prices in commerce or creating a monopoly in the acquisition of buying, selling, or dealing in any article in commerce or of restraining commerce.

Extensive hearings were held at the principal markets. My conclusion was that there is nothing in the act which specifically prohibits the purchase by one packer of the physical assets of another. Therefore the purchase was not illegal unless it was made with the intent of manipulating or controlling prices in the buying of livestock in commerce or in the sale and distribution of livestock products, or of creating a monopoly in the acquisition of buying, selling, or dealing in such articles in commerce or of restraining commerce. The purchase was made for the purpose of effecting economy in the conduct of the business of Armour & Co., by reducing overhead expenses and increasing the volume of sales of the finished products.

The effect of this purchase has not been unduly or arbitrarily to lower prices to the shipper or increase the price of livestock products to the consumer or otherwise to manipulate or control price in commerce. The evidence shows that competition in the purchase of livestock and in the sale of meat and meat food products in interstate commerce has not been diminished or materially lessened by reason of the purchase, and consequently the acquisition of the Morris properties by Armour has not had the effect of creating a monopoly. Furthermore, there has been a marked growth in the independent packing industry in recent years, and competition has been keen and active.

Aid to Produce Growers

The fruit and vegetable business is now a billion-dollar concern. A million cars were required to transport the last crop to market, exclusive of large shipments by motor truck and wagon. The distribution of this tremendous volume of perishable foodstuffs has become a problem of increasing complexity. Rounding out a decade of effort in this field shows the marketing services of the department as an integral part of the industry. The news service, with offices in 18 large markets, also maintains 37 field stations in important regions of production. A total of nearly 11,000,000 reports were issued during the year. Producers are now operating with a greater knowledge of crops, shipments, market receipts and prices than was available to the largest distributers prior to the inauguration of the service. The dissemination of this information has been further augmented through the cooperation of the press and by radio broadcasting. Through certain economies it has been possible, without added appropriations, to increase the number of market reports distributed by 27 per cent. Also, the cost of assembling carlot shipment information has been reduced one-fourth through a consolidation of telegraphic reports.

The value of the market news service is generally recognized. This has been shown through many commendatory letters from the trade. Better proof is shown in the voluntary contributions from the shippers to support additional field stations. These temporary stations operate in important producing areas during the shipping season only. Current prices in the large centers, supplies on hand, the tone of the market, and shipments from competing points are reported. Such an office has been operated in Brawley, Calif. It costs about $2,000 annually. Half of this amount is subscribed locally. From this area 13,000 cars of cantaloupes are moved in 10 weeks. At a daily meeting a Federal representative presents on a large chart a report for the day, and a schedule of distribution is then worked out through the cooperation of the shippers. The market supplies of the country are stabilized, alternate gluts and famines avoided, all to the mutual advantage of the growers and the consuming public. At the close of the season the department's representative was given a ring and his assistant a watch as a mark of the shippers' appreciation of this service.

The inspection of perishables which was extended to points of production in 1922 won instant recognition. This service, conducted in most cases in cooperation with State marketing agencies, provides for the certification of the grade, quality, and condition of the product, on the voluntary request of financially interested parties. As the work is supported almost entirely by the fees assessed, it has not become a burden on the taxpayers. The certificates are invaluable as a basis for long-distance trading and in the settlement of transportation claims. During the past fiscal year certificates were issued on over 130,000 cars of fruits and vegetables, in addition to 30,000 cars which were inspected in the terminal markets. Effective distribution has been encouraged through a steady supply of standardized products.

The possibility of the department offering its services in connection with the arbitration of trade disputes is a promising development. Since the close of the United States Food Administration there has been a continuous demand for a means of settling such controversies without the delay and expense of the usual court procedure. I believe that there is a real opportunity here to remove one of the greatest causes of waste in distribution, and at the same time to reduce the costs of marketing. The sums of money involved in such disagreements are usually relatively small in any single transaction, but the aggregate economic losses in time, telegraphic expense, costs of diversions to other markets, and in the deterioration of the products are enormous. In 1922–23, 15 per cent of the apple shipments of Washington State, totaling nearly 30,000 cars, were involved in disputes. The season was unusual on account of the disrupting effect of a strike on the transportation systems, but such situations do arise periodically. Further, this was but a small fraction of the three-fourths of a million cars of fruit and vegetables shipped that year.

Following preliminary conferences with individuals in the trade, I submitted a basis for the standardization of trade terms, trade practices, and methods of adjustment at a conference of representatives of the industry in May. This proposal has been discussed at a number of national trade conventions and has now won widespread

support. Plans are under way to handle a sufficient number of voluntary requests for arbitration to test the feasibility of the project under actual commercial conditions.

Range Beef-Cattle Production

A study of beef-cattle production in the Western States has been made by the department to assist producers in keeping their production adjusted to the demands of the market and in determining the least-cost methods of production under present and prospective conditions. The study was also designed to show the comparative advantages and disadvantages of the different types of livestock in the different areas and the probable market demand for them.

The findings of the investigators are being made the basis of the livestock-extension program in the northern Great Plains. They justify a firm belief in the future of the beef-cattle industry in the region. Ranchmen there have cut their operating costs to a minimum, and conservative ideas prevail as to values and results of grazing lands.

Since practically all of the public land in the area has passed into private ownership, there is need of a readjustment whereby the poorer classes of homesteaded land and other grazing lands can be consolidated into ranch units such as to allow a size of business which will result in high efficiency of production and a good standard of living for the ranch family. The tendency on the specialized beef-cattle ranch is toward a unit which maintains at least 150 breeding cows. The number of cattle and not the area of land determines the size of the ranch business. There is universal agreement among ranchmen that control by the individual of the land he grazes and proper valuation of that land for grazing purposes are absolutely essential. Overvaluation of grazing land has been an important cause of failure in ranching.

Developing Local Markets

Studies of areas around growing cities have been made to determine how far farmers are meeting the needs of their local markets and to obtain an economic basis for production and marketing programs. Investigations of the kind have been completed at Lebanon, Pa.; Roanoke, Va.; Macon, Ga.; Atlantic City, N. J.; Keene, N. H.; and Lima, Ohio. They have been helpful in pointing out market requirements as regards both quantity and quality of farm products. It was found that changes in transportation costs necessitated many adjustments in farm production.

Around Lebanon, Pa., where the sale of whole milk furnishes the major cash income, it was found that producers were not meeting the quality and seasonal requirements of the Philadelphia market. In a survey covering the farm-trade territory of Roanoke, Va., farmers were advised not to increase their production of milk, because the local market for whole milk was entirely supplied and the surplus might have to be sold at a much lower price on a butterfat basis. Poultry raisers were shown that an increase in the local production would probably not materially affect the prices received, because poultry products were being sold in terminal mar-

kets, and that an increase in size of farm flock should prove profitable. Vegetable growers were advised of the quantity of truck crops that could be marketed in Roanoke.

In Cheshire County, N. H., where many farms have been abandoned, the production of agricultural products was found to be decreasing. The farms in that county, each with only a few acres of tillable land, have been unable to compete with western farms. It was pointed out to the owners of these farms that timber production should receive more attention and that poultry products could be doubled and still find a good local market.

Many other examples could be given, but these will suffice to show how the department is indicating neglected agricultural opportunities.

Inventions by Department Workers

Grain inspection and grading in the United States have been greatly improved and in some respects revolutionized by inventions made by members of the grain investigations staff of the department. These inventions in every case have been patented and dedicated to the people of the United States for their use without the payment of any royalties. Some of them are already employed in important grain markets throughout the world.

A public service patent was recently granted on an "aspirator" for cleaning grain at the threshing machine. When foreign matter is present in considerable quantity when the grain is marketed, it means heavy dockage. About 19,000,000 bushels of dockage was contained in the wheat and flax grain threshed in the spring-wheat States alone last year.

Another patented appliance invented in the department removes weed seeds from grain and rice which are not readily removed by the ordinary cleaning devices. Some of these weed seeds are wild oats, burr clover in barley, and watercress in rough rice.

A method has been developed in the department for the determination of moisture in grain and other substances. This moisture tester has completely changed the handling and grading of grain in all important grain markets. Its great advantage is that moisture determinations are made on the whole grain, so that there is no loss of water from the grinding of samples, and much time is saved. Without this device the grading of grain on a moisture percentage basis, as now provided in the United States grain standards act, would be practically impossible.

A grain sampler for accurately splitting samples of grain for analysis has been devised. This accuracy is essential to correct grading, otherwise the subdivisions are not representative of the whole sample.

Another of the department's inventions is the ship sampler. Under the old system of ship sampling it was the custom to grab handfuls of grain from a falling stream, or to let a bucket down into the cargo hold and allow it partly to fill up with the falling grain. These methods did not give a representative sample, and grading was therefore often very unsatisfactory. Sampling by means of the department's device takes complete cross sections from the falling

grain as it leaves the delivery spout, so that the sample accurately represents the shipment.

The value of flaxseed for crushing depends largely on its oil content. The method heretofore in use for determining the oil content took about 24 hours. Recently the department developed a simple method for determining the oil content of flaxseed by which the test can be made in approximately 10 or 12 minutes. This method has already come into commercial use at the principal terminal markets in the central Northwest.

The protein content of wheat has come to be an important market factor. Practically every lot of hard red spring and hard red winter wheat arriving at terminal markets is now tested for its protein content, and substantial premiums are paid for high protein wheats. Tests are made for the grain trade at protein-testing laboratories maintained by State agencies, by commercial grain-inspection concerns, and by private chemists. Methods for making the test, and consequently the results obtained, were not uniform at the different laboratories. To overcome this the department has developed a standard method for making protein tests, the value of which is already widely recognized.

Official Grain Standards

Minor changes in the official grain standards of the United States for corn, oats, and rye became effective during the fiscal year ended June 30, 1925. Official grain standards of the United States for grain sorghums became effective December 1, 1924. Oat standards effective June 15, 1919, required that the grain must contain at least 75 per cent cultivated oats in order to be classified as oats. Considerable quantities of grain mixtures, consisting principally of cultivated and wild oats with varying percentages of other grains, were found to be moving in interstate and foreign commerce. This class of grain did not come within the official standards for oats established in 1919.

These products, however, have a real commercial and feeding value and are in demand not only in certain parts of the country, but also in foreign trade where a comparatively cheap feed is desired. By reason of the fact that no official standards were available for this character of feed, the merchandising thereof has been conducted on a basis of general or indefinite terms resulting in many instances in confusion and misunderstandings. After public hearings on the subject with members of the grain trade in numerous markets throughout the country it was decided to promulgate under the grain standards act, standards for grain of this kind in addition to the existing standards for oats. Accordingly, official grain standards of the United States for feed oats and mixed feed oats were promulgated and became effective September 1, 1925.

Hay Standards Made Official

United States standards for alfalfa and alfalfa mixed hay, prairie hay, Johnson and Johnson mixed hay, and mixed hay were published, recommended, and made effective July 1, 1925. Slight revisions in the timothy, clover, and grass standards also were made effective on the same date. These standards have since been pro-

mulgated as official for the United States. Prior to their adoption, tentative standards for alfalfa, prairie, and Johnson hay, based on laboratory data and field and market surveys, were prepared and submitted to producers, shippers, and receivers of hay at 23 public hearings held in Alabama, Texas, Arizona, California, Utah, Idaho, Washington, Oregon, Montana, Colorado, Nebraska, Kansas, Missouri, Minnesota, Michigan, and New York. Valuable suggestions brought out at these meetings were incorporated in the standards.

The commercial dry edible bean crop of the United States returns to the farmer over $50,000,000 annually and constitutes one of the important staple food products. Quality standards uniformly applied are essential to the free interchange of this commodity in commerce. Standards are in use and applied by six regional commercial associations, each drawn up, for the most part, independently of the others. Studies of the bean industry made by the department during the fiscal years 1924 and 1925 revealed many inconsistencies in the interpretation and application of such commercial standards. Tentative standards based on these studies were prepared and issued March 1, 1925. Public hearings were afterwards held in the principal bean-producing areas, to determine wherein the standards needed revision to meet local problems. A preliminary report has been issued summarizing the results of these studies and hearings.

Tentative broom-corn standards have been prepared and recommended for the use of State and commercial organizations. These standards have been made official for Oklahoma, the largest broom-corn-producing State. A school for training inspectors was conducted at Oklahoma City, following which a joint Federal-State inspection service was established in Oklahoma.

Crop Reporting

Information as to intended crop and livestock production, prices, stocks, shipments, demand, etc., is gathered and distributed by the department in ever-increasing volume. Three years ago a system of reports of farmers' intentions to plant crops was inaugurated. The purpose of these reports, one of which is issued in March covering spring-sown crops and one in August covering fall-sown crops, is to furnish information as to what farmers generally are intending to plant. Such information, made available at the right time, gives producers an opportunity to change their plans should there appear to be a likelihood of overplanting or underplanting any particular crop. It is believed that these intentions-to-plant reports are capable of having an immediate salutary effect on acreage and production.

The department's semiannual hog surveys, in making which the department has the assistance of the Post Office Department through rural mail carriers, have already had considerable influence on hog production. These surveys forecast production and marketing, and also indicate farmers' intentions as to breeding, thereby enabling farmers to decide when to market their hogs to best advantage, as well as whether to increase or decrease their production. Similar surveys are furnishing basic facts about dairying.

Sheep and lamb surveys likewise are made. The first of these reports has been issued. It showed a tendency to increase farm

flocks of sheep throughout the country to a point at which the increased supply would be liable to have a material effect on prices. A similar study is planned for the beef-cattle industry to throw light on the probable supply of beef cattle and to show whether there is any tendency to increase the number of beef cows for breeding.

These new lines of work were inaugurated primarily to aid the farmer in planning his planting and breeding programs, and as the work develops and is better understood the reports should exert a beneficial influence.

Constant improvement is also being made in the statistical methods used in the older and more developed lines of work having to do with crop reporting, namely, those relating to the estimating of acreage planted to various crops, the progress of the crop during the growing season, and estimates of yield and production as well as of stocks and farm prices. Material progress has been made during the past two or three years in the devising of better methods of estimating acreage. These newer methods are resulting in increased accuracy. Plans are under way to report wheat stocks much more completely than is done at present.

The cotton crop reports have recently been severely criticized, some of these criticisms being directed against the frequency of the reports, others against the accuracy of the reports, while some have gone so far as to impugn the integrity of the department officials engaged in making the reports. There is, perhaps, some ground for criticizing the frequency of these reports. The law now requires the issuance of two reports a month from July to December. The experience of the department in handling the semimonthly reports during the past two years would suggest the desirability of reducing the number of reports, especially in the early months.

The criticisms of the accuracy of the reports are largely due to a misunderstanding of the nature of the early forecasts which are often taken to be estimates of final ginnings, when, in fact, they are merely interpretative indications of condition figures reported by correspondents at given dates, and are, therefore, subject to change as prospects change throughout the season. To avoid misunderstanding with respect to these early forecasts, it has been suggested that the cotton forecasts during July and August be omitted, the department simply reporting the acreage in cultivation and the condition and progress of the crop during these months, and that, beginning in September, forecasts be made which, instead of being stated as a single definite figure as at present, be issued in the form of a range forecast, which would indicate the probable upper and lower limits within which the final ginnings were likely to fall. It is believed that if these suggestions were carried out some of the present criticism might be avoided without diminishing in any way the value of the official cotton reports.

The crop reports covering crops other than cotton are quite generally accepted by producers and the trade as the best available and are seldom subject to attack. The cotton reports, notwithstanding the frequent attacks upon them, are generally accepted as more accurate than those issued by private estimators, of which there are now more than a score.

Radio and the Farmer

The department made its first experiment with radio in 1920. Since then there has been a great development in the use by farmers of this new means of communication. A survey made by county agricultural agents in 1923 indicated there were about 145,000 radio sets on farms throughout the country. In 1924 the estimated number had jumped to 365,000 and in 1925 to 553,000. The average number of radio sets on farms per county has increased from 51 in 1923 to 204 in 1925. This increase of 300 per cent is evidence that the farmer appreciates the broadcasting service provided for him.

There has also been rapid growth in the number of radio-receiving sets on farms in States at great distances from good broadcasting service. In Florida, for example, the increase in 1925 over the estimated number on farms in that State in the preceding year was 1,955 per cent. Idaho increased the number of its farm receiving sets 850 per cent in the year, Alabama reported an increase of 850 per cent, Arizona of 460 per cent, and Louisiana of 600 per cent. In Pennsylvania, on the other hand, the gain in 1925 over 1924 was only 5 per cent.

Farmers generally have bought very good radio sets. A questionnaire answered by 2,500 farmers in 1923 indicated the average price of their manufactured sets was $175. This sum will buy a better set to-day than it would two years ago. Yet farmers are not on that account reducing their investments in radio. Dealers in several parts of the country say that radio sets worth from $125 to $400 sell much more readily to farmers than those costing under $100. Farmers have discovered that they need good long-distance sets to get the weather and market reports and entertainment they demand. Twenty-four agricultural colleges maintain radio broadcasting stations. The colleges are becoming enthusiastic users of radio. They cooperate with the Department of Agriculture in broadcasting its weather, crop, and market reports. Several hundred broadcasting stations regularly obtain information for broadcasting from the department. Many farmers have more than saved the price of their radio sets by profit gained by the use of market information issued by the department for broadcasting.

The Library

A comprehensive collection of books and periodicals, bulletins, and reports relative to practical agriculture, agricultural statistics, and scientific experimentation at home and abroad is a necessity for the department. In the field of agriculture and the related sciences, the library stands unsurpassed by any other single collection. It now contains 180,000 books and periodicals. Many of these are found in few, if any, other libraries in the country. The collections have been enriched during the last year by the addition of over 13,000 volumes and pamphlets. The periodical list is growing fast. Publications of the department are widely distributed to agricultural officials, societies, colleges, universities, and other institutions of learning. In return for these, thousands of serial publications are obtained. There are currently received by the library

more than 4,000 periodicals, of which number about two-thirds come by gift or exchange. The files of agricultural papers include representative publications from all over the world.

Agricultural workers, particularly those connected with the land-grant colleges and the agricultural experiment stations, look to the library of the department for books and for verification of references. Books are sent to every State in the Union. In the last 10 years the number of books lent has increased 100 per cent. Last year 1,916 books were lent to institutions outside of Washington. The dictionary catalogue of the library now numbers a half million cards, and is supplemented by special indexes in the bureau libraries on the subjects in which the bureaus specialize. All of these catalogues and indexes make an invaluable key to the literature of agriculture and the related sciences, and are in constant use in supplying information on the subjects of investigation by the department.

The Naval Stores Act

The naval stores act of March 3, 1923, is designed to improve the quality and the accurate grading of rosin and turpentine and to prevent the misbranding of these products when shipped into interstate or foreign commerce. The personnel for the enforcement of the act was organized during the year and a number of cases involving violations of the act instituted. Samples from 215 shipments of turpentine have been collected and examined during the year and 35 citations to hearing were issued. Under the service features of the naval stores act approximately 20,000 round barrels of rosin have been officially inspected, graded, and official United States grading certificates have been issued to cover them.

Home Economics

National welfare is based upon the combination of efficient production and wise consumption. The second of these two essentials, long neglected, is now beginning to receive the attention it deserves. The direction of home expenditure along lines which will make for health and well-being is the work of the department's Bureau of Home Economics. Studies are necessary to furnish information about the American diet. It is not enough to know what people consume. Certain items of the consumer's budget, notably food, may fall short of requirements for health and efficiency. Estimates of the food needs of the consumer should take such a discrepancy into account. Determination of requirements for an adequate standard of living therefore forms an important field of study. But if adequate standards of living are to be made effective, current practices must be checked against ideal standards.

In each of these fields of investigation much research is still to be done. For the last three years the department has been conducting an investigation in farm standards of living. During the last year the results from two States have been summarized. Analysis of the food expenditures of 3,000 farm families has been started in the light of present standards for adequate nutrition.

Methods of food preservation are important factors in wise utilization of food in the rural home. As a result of studies in this bureau and in the Bureau of Plant Industry the department has

withdrawn from distribution all previous publications on home canning and issued a circular giving directions for home canning based on the results of the research of these two bureaus. Special attention is called to the use of the pressure cooker in canning nonacid vegetables, to the use of the "hot pack" for both fruits and vegetables, and to the careful examination of canned foods before use. Various questions are being investigated, so that a more definite stand may be taken on certain controversial questions in home canning.

VI. The Department of Agriculture: Animal Husbandry and Plant Industry Investigations

Fundamental Dairy Research

To carry out the policy of enlarging the work in fundamental dairy research it was necessary to readjust the department's activities by cutting down the force devoted to cooperative work in the States so as to make it possible to undertake new investigations without additional funds. Work on the scientific principles governing the nutrition of dairy cows was considerably enlarged. The new building for research in nutrition was put into use and has greatly facilitated this important study.

On account of the large amount of calcium (or lime) in milk, heavy-milking cows require a great deal of it in their feed. Experiments have been conducted which show that if heavy milkers do not get sufficient calcium in their feed they will take it from the reserve supply in their bones in order to put it into the milk. This drain on the cow's body has a serious effect on her health and ultimately reduces her capacity for milk production and the bringing forth of normal, well-developed offspring. Dairy cows are more liable to suffer from a deficiency of calcium in their rations than from a lack of any other feed constituent so far studied.

It has also been found that calcium taken into the cow's stomach in various kinds of feed is assimilated into body tissue and milk with different degrees of readiness. The assimilation of calcium from such calcium compounds as ground rock phosphate, ground limestone, and bone meal has also been studied a good deal, and it has been found to be much lower than that from either alfalfa or timothy hay.

The quantity of phosphorus contained in the diet has an important effect on calcium assimilation. If a milking cow receives a diet which contains sufficient assimilable calcium, but not enough phosphorus, she will at first take phosphorus from her soft tissues to put into the milk; but the phosphorus which can be spared from the soft tissues is small in amount, and it is soon used up. When this has happened, the cow then begins to take phosphorus from her bones. The chemical composition of the bones is not easily changed; therefore, when phosphorus is taken from them, calcium comes along with it in the proportion of two parts by weight to one of phosphorus. Calcium coming from the bones in this way, and not used for milk secretion, is lost in the manure. Thus a cow may lose calcium from her body on account of a shortage of phosphorus in her diet.

Cows which receive too little calcium or phosphorus in their rations go down in their milk yield, and finally come to grief in one way or another, just as surely as cows which receive too little general nourishment. The difference is that in the latter case the cow gets thin, and anyone can see what is the matter with her as soon as he looks at her; whereas in the former case she may appear to be in very good condition, and the cause of the trouble can be discerned only by rather difficult and expensive investigations.

Farmers and dairy investigators generally recognize the fact that one of the quickest ways of increasing the net income from dairy farms is to have cattle that will produce more milk and butterfat than the average cow does at the present time. The average production of the cows of the United States is much too low. In round numbers it is about 180 pounds of butterfat a year. This can be increased, no doubt, in two ways: (1) By feeding our present cows better; (2) by raising the hereditary level of the producing capacity of our dairy cattle by better breeding. Both of these phases of the problem are being carefully studied by the department.

Breeding experiments are under way involving 1,500 head of dairy cattle in various parts of the United States. The object is to determine the method of breeding that will insure uniformity in the transmission of the capacity for high production of milk and butterfat. The methods of mating that are being compared are line breeding with outbreeding and inbreeding with outbreeding. With these goes the continuous use for generation after generation of sires that have proved their ability to transmit uniformly high-producing capacity to their offspring.

As a result of production studies made with the records of animals in the Advanced Register and Register of Merit, the theory has been advanced that a sire's hereditary make-up for producing capacity is indicated by the production records of a number of his daughters more accurately than a cow's hereditary make-up for producing capacity is indicated by her individual production record; that where all the daughters of a sire are uniformly excellent producers, this may be taken to indicate that such a sire has in his hereditary make-up only those factors that determine high-producing capacity, and therefore he is pure (or homozygous) for the factors controlling high-producing capacity; and finally, that by the use of such sires for generation after generation, dairy cattle might be bred that in the course of five or six generations will have an inheritance that will make it possible for all of them to be high producers, and that will make it impossible for them to transmit to their offspring an inheritance for low-producing capacity.

The difficulty is to find these pure sires. Up to this time we have looked to the Advanced Registry and Register of Merit to prove our sires. The difficulty in the selection of a proved sire through official testing is that the poor daughters of a sire may not be tested, because of the requirements for entry into the Advanced Registry or Register of Merit, and also for commercial reasons.

In the cow-testing association this difficulty may be largely overcome because it is the practice to test the entire herd, including the good and the poor daughters of a sire. Heretofore, the proving out of the thousands of well-bred sires in use in cow-testing associations

in this country has not been emphasized. The department is now taking steps to secure the necessary data to measure accurately the transmitting ability of the sires in use in cow-testing associations

Milk-Plant Management

In order that the milk producer may get a good price for his product without at the same time forcing the consumer to pay an unduly high price, it is necessary for the city milk distributer to operate his business at as small a cost as possible. Investigations are being carried on to determine the best practices in milk-plant operation, both from the standpoint of economy of plant operation and of quality of the product. Labor studies have been made at 125 milk plants located in the principal cities of the East. A detailed study is made at each plant, the number of men and time required for each operation being determined. The results of these studies indicate the most desirable arrangement and layout of plants and equipment.

The cream layer visible on a bottle of milk is the principal means which the consumer has for judging the richness or butterfat content of the product. Investigations have been carried on to determine what processes in the milk plant have a tendency to injure this visible cream layer and what methods may be followed for procuring the normal and uniform cream layer and at the same time obtain a clean and safe product.

Studies are being carried on at country milk stations to determine the most economical methods followed in the construction, arrangement, eequipment, and operation of these stations in order to assist milk producers and dealers in establishing and remodeling such stations.

Rubber Possibilities in the United States

On account of rapidly advancing prices there is an acute demand for information regarding rubber-production possibilities in the United States and in tropical America. It is believed by many industrial and economic writers that a serious shortage in the supplies of crude rubber is impending, in addition to the dangers that have been recognized in being dependent upon the East Indies for a product that within a few years has become indispensable not only for industrial purposes but for military requirements. About three times as much rubber is used in the United States as in all the rest of the world. Rubber is now as essential to agricultural production and marketing of crops as to the urban industries. The present development of our civilization could hardly be maintained without rubber.

Interest in the possibilities of rubber production is intensified by the large areas of unused or partially used land in the United States, especially in the southern and southwestern regions, where rubber production might be feasible if suitable plants were discovered and methods of utilization were devised.

It has been determined already that several of the rubber-producing plants grow well under our conditions, and could be utilized, but other species or varieties may be found that yield more or better rubber, or are better adapted to cultivation under our conditions.

Because of the large numbers of plants that contain rubber, it is a large undertaking to make experimental determinations of the various possibilities that exist, in order to settle upon the plants that are best adapted to our conditions, and to develop suitable cultural methods and extraction processes.

Investigations of the problems of rubber production are being based on a new principle or method of procedure. Attention is first given to the cultural characters of the plants, so that intensive technological investigations of extraction and utilization methods may be directed to the species that are most readily propagated and that afford the best assurance of production in large quantities. In this way the investigation of agricultural possibilities will not be restricted to the species that have served as commercial sources of rubber, since the agricultural possibilities obviously do not depend upon the abundance of a plant in the wild state, or upon the exploitation of its natural products. Some of the most important crop plants are not known in the wild state or exist only in limited numbers under restricted conditions.

Several of the tropical rubber-producing species thrive and appear well adapted to conditions in southern Florida. Although the East Indian plantation system of production apparently would not be feasible in Florida on account of the high cost of labor, it is not impossible that other systems and methods of production and extraction of the rubber may be developed that could be established as regular agricultural industries. Popular interest in such possibilities of tropical development in southern Florida is very acute among the thousands of new settlers who are now establishing themselves in the more tropical districts. Although private cooperation may contribute to earlier solutions of the experimental problems, commercial plantings of rubber can not be considered advisable until practical methods of handling the crop under the Florida conditions have been devised and demonstrated.

Rubber plants that are natives of dry regions are being tested in California. Special attention is being given to one of the native species of milkweed (*Asclepias subulata*), which appears to be the most promising from the standpoint of growing on waste lands and of producing the largest quantity of rubber-bearing material readily and cheaply.

The East Indian tapping methods have been applied experimentally to a small planting of hevea, about 20 years old, near the north coast of Haiti. The records of these experiments are comparable with those that have been reported from the East Indies and show the same wide range of variation in the production of latex from individual trees. From 60 per cent to 75 per cent of the rubber is produced by 25 per cent of the trees in the East Indian plantations, and the problem of producing uniform high-yielding trees is still to be solved. Some of the trees in Haiti approached the best records in the East Indies, whereas other trees produced very little latex and some none at all. Owing to the seasonal variation in the flow of rubber being much greater in Haiti than in the East Indian plantations, other systems of production should be considered in which continuous tapping would not be necessary.

Plantings of all available species of rubber plants are being made in the Canal Zone in cooperation with the experimental garden of the Canal Zone at Summit, near the middle of the isthmus. By permission of the War Department a tract of 10 acres on the Atlantic side of the isthmus, at the Fort Sherman Military Reservation, has been made available for experimental plantings of rubber. These plantings are on lands that are being drained to control mosquitoes and that afford conditions apparently quite similar to those of the locality where hevea rubber has thrived in Haiti. From seed beds to be established in these or in other suitable places it is expected that seedlings of hevea can be transplanted at least in small numbers to many localities that can be selected to represent the full range of conditions in the Canal Zone and adjacent districts of Panama, to determine the practicability of commercial plantings of rubber or of utilizing waste lands for reserve plantings from which emergency supplies could be drawn.

Improvements in Cotton Production

Intensive studies of the problems of cotton production in the United States since the boll-weevil invasion have shown several causes of gradual deterioration in the quality of the fiber and lower yields per acre that have no necessary relation to boll-weevil injury, although they have frequently developed seriously in the same regions where boll-weevil injury has been serious.

The planting of seed of several different varieties of cotton in the same neighborhood, the intercrossing of these varieties in the fields, the mixing of the seed at the public gins, and the general use of gin-run seed for planting, are especially important causes of deterioration.

The production of poor fiber and low acre yields from mongrelized gin-run seed has been the underlying reason for the popular idea that cotton varieties "run out" and that fresh seed must be brought in every few years from other districts. It has been shown, however, by careful and extensive experiments that selected seed stocks that have not been allowed to become mixed may be grown continuously in the same districts for many years with no indication of "running out."

Wider utilization of superior varieties is going forward more rapidly through a plan of organizing one-variety cotton communities as centers of seed supplies where supplies of pure seed are grown, sufficient for general planting in the region, and where uniform high-quality cotton is produced in the commercial quantities that manufacturers require.

As compared with the usual conditions of mixed-variety production, each individual farmer of a one-variety community is able to raise more cotton and of better quality, which can be sold at a higher price. The manufacturers are willing to pay more for dependable supplies of uniform fiber because the spinning and weaving are less expensive and the resulting fabrics are better. The advantages to be expected eventually through establishing and maintaining a system of community production and marketing of the

crop of Acala cotton in the single-variety communities may be estimated conservatively at from 3 to 10 cents per pound, or from $15 to $50 per bale.

The organization of one-variety communities is of interest in other States not only as a step in working out the general problems of the cotton industry but as assuring a source of seed supply of good varieties that may be drawn upon in emergency years.

In California the State legislature recently passed an act which definitely excludes other varieties of cotton from specified districts where the farmers have restricted themselves to the Acala variety. The purpose of the enactment, to protect the public interest in the improvement of the cotton industry, is clearly stated in the first section of the act, and is regarded as in line with well-established precedents. No extra cost is involved in establishing the one-variety improvement, but only the requirement that growers refrain from injuring their neighbors who have adopted an improved system of production. The cotton land becomes more valuable in a restricted community, because it can be used with greater advantage to the farmer.

In the last few years a number of superior varieties of cotton have been developed by the Bureau of Plant Industry, better adapted to purposes of production under weevil conditions, maturing earlier and larger crops, and producing fiber of better quality. Among the more prominent of these are the Acala, Lone Star, and the Pima variety of Egyptian cotton grown in the Salt River Valley of Arizona. Hundreds of thousands of acres have been planted with these varieties and crops of aggregate values of many millions of dollars produced, as well as a general stimulation of interest in better varieties and better seed.

The production of cotton is also being improved by the application of new cultural methods, based on the discovery that the restriction of the size of the plants will shorten the growing season and often will greatly increase the yields in the presence of the boll weevil, and under short-season conditions along the northern rim of the Cotton Belt. Leaving the plants closer together in the rows increased the yield 50 per cent or more in some test cases, and a general estimate of at least 10 or 15 per cent would be justified to illustrate the value of this improvement.

Dry-Land Agriculture

The hazard of agricultural production in the Great Plains is only partially the crop hazard owing to unfavorable weather and soil conditions, insects, diseases, and other pests. The temptation to expand any agricultural enterprise to the extreme limit of financial credit has often led to unnecessary disaster. With a better balanced agriculture and a more careful provision for reserve credit, or, in other words, a more conservative development of any area in the Great Plains, the substitution of a sound and reasonably profitable agriculture for much of the speculative enterprises of this area is assured.

During the past three years the possibilities of home making in the Great Plains have been brought more closely to the attention of farmers than any other phase of agriculture in that region. Once

it is demonstrated that the maintenance of self-sustaining homesteads is not only possible but practicable in that vast region, the results can not but be beneficial and far-reaching.

The work of the department with that objective in view has been productive of encouraging results and has reached the stage to justify the conclusion that homes can be established and families maintained from the returns of fruits and vegetables of the farm under all growing conditions. Upon a 1-acre plat sufficient vegetables can be raised to support a family of five. These fruit and vegetable results are significant. It means that the food requirement of a family is assured from the farmstead. Add to such a farmstead a cow or two, a litter of pigs, and a flock of poultry, and a competent farm economy is accomplished.

The attractive and happy farmsteads provided with these resources that are beginning to dot the prairies in the Plains region fully compensate for the years of labor by the investigators of the department and augur well for the future. Any permanent agriculture must plant its roots around the nucleus of the farm home. When communities of farm homes are once established, the expansion of farm activities for supplying staple crops for the market on a large scale will develop as the capital of each farmer increases and experience guides his industry and initiative.

Barberry Eradication

The campaign to remove all of the common barberries in the 13 north-central grain-growing States has completed its seventh full year. The State agricultural colleges of the 13 States, the State departments of agriculture in most of the States, the conference for the prevention of grain rust, and similar allied agricultural and business organizations are cooperating in the campaign. There are four phases of the campaign: Investigation, publicity, survey, and eradication.

Numerous foreign and native species of barberries and hybrid barberries have been added to the Berberis garden at Bell, Md., during the year. These are being assembled for description and classification. Native species of barberries also are being studied in their natural habitat and the most effective method of eradication of the susceptible species is being determined.

Additional proof of the connection between common barberries and rust in grain has been obtained. Aecidiospores developed on common barberries within the eradication area about a month before the appearance of stem rust on grains and grasses. Grains and grasses near infected barberries became rusted two or three weeks before any rust appeared on more distant grains and grasses. A heavy rust infection on spring wheat in central North Dakota in 1924 was immediately traceable to about 80 barberry bushes near Jamestown, which had been overlooked in an original survey. The occurrence of stem rust on oats over an area more than 60 miles long in western Wisconsin was directly traceable to infected barberries in the area of escaped bushes near Trempealeau.

Before the removal of great numbers of barberries it was nearly impossible to differentiate between the local stem-rust epidemics which the infected barberries caused. Now that many millions of

these bushes have been removed, the local epidemics are greatly reduced in number and are more easily identified. Within the last year it has been possible to find barberry bushes by tracing stem-rust epidemics from areas of light infection to areas of heavier infection until the source of the epidemic was reached. This has been true in practically every State of the eradication area.

It seems very probable that when the barberry in the 13 States is reduced to such a minimum that each local epidemic can be clearly isolated from the other epidemics each common barberry eventually will reveal its location in a year favorable to the production and spread of stem rust. Barberry eradication has been especially emphasized through the schools. With the cooperation of Smith-Hughes instructors and school superintendents and teachers, many school children have been taught to identify the harmless Japanese barberry, the harmful common barberry, and the different stages of black stem rust.

After several years of experimenting with nearly 40 different chemicals it has been demonstrated that common crushed rock salt and kerosene are the two most satisfactory chemicals with which to kill a common barberry. The use of sodium arsenite, which for a time was recommended, has been discontinued because of the danger to livestock involved in its use. Either salt or kerosene is 100 per cent effective if properly applied, and the cost of application is considerably cheaper than eradication by digging. The availability of both salt and kerosene makes them especially satisfactory. During the fiscal year 304.5 tons of salt and 11,957 gallons of kerosene were used to kill 427,914 barberry bushes, sprouting bushes, and seedlings on 2,651 properties.

A determined effort has been made to discover and treat all escaped barberries. One of the outstanding discoveries of the year's work is the fact that areas of escaped bushes in nearly every instance are larger than was at first supposed. It has been necessary to survey miles in every direction from hedges of barberries which are bearing seed. Where the escaped bushes are fruiting, the policy is to survey foot by foot at least 2 miles beyond the limit of the last fruiting escaped bush. Seedlings still continue to appear every spring around hedges which were destroyed several years ago, indicating that seeds lying on the surface of the ground will retain their viability for as long as six or seven years. A total of 3,860,402 escaped bushes and 4,631,929 seedlings have been found to date. Of these 259,733 escaped bushes and 806,451 seedlings have been found this year.

Effects of Crops on the Yields of Rotation Crops

Fairly extensive field tests, the technical description of which will be published soon, have demonstrated the fact that use of intensive cropping systems may quickly cause some soils to lose the power to produce satisfactory yields of certain crops. Liberal fertilizing and manuring may hasten rather than delay or prevent the development of this condition. In the crops involved the root system may fail to develop normally in spite of the fact that some of the soils behaving in this manner are in excellent mechanical condition and have very thorough underdrainage. This condition does not involve loss

in general productiveness, for some crops give excellent yields, whereas others are more or less complete failures.

It has been found that the cropping system largely controls the situation and the result in any particular case primarily depends on the comparative effect of the preceding crop in producing the unfavorable soil condition, on the one hand, and the sensitiveness of the succeeding crop to this condition on the other hand.

Corn seems to be a crop which is especially apt to affect succeeding crops in the rotation unfavorably, but itself is not sensitive to the effects of other crops. The converse is true of tobacco. Systematic crop rotation, with free use of soil-improving crops, does not necessarily correct or improve this condition of the soil. In the case of tobacco no system of rotation has been found which fully equals the simple expedient of allowing the soil to remain idle and undisturbed for a year or more, with or without a covering of adventitious vegetation. Curiously enough, the next best results are obtained with tobacco in continuous culture, without use of any soil-improving crop, or after crop plants related to tobacco, such as tomatoes and potatoes, which also are sensitive to the soil condition in question. On the other hand, tobacco may give poor results after crops to which it is in no way related, such as corn, grasses, and legumes. Similarly, potatoes give much better results after tobacco than after corn. Among the legumes, soy beans affect tobacco very unfavorably when compared with cowpeas, whereas both legumes are very beneficial to corn. It is apparent that these specific crop effects are explainable only in part on the basis of the quantities of plant nutrients removed from the soil. The fertilizer treatment may modify but frequently does not control the effect of one crop on another. Weather conditions, more particularly the seasonal rainfall, have been found to exert a marked influence in these crop effects.

White Pine Blister-Rust Control

The white or five-needled pines of this country are of outstanding importance in the development of forestry. Of the nine species occurring in the United States, the eastern white pine, western white pine, and sugar pine are of great commercial importance and value. Existing stands of these trees on public and private lands approximate 80,000,000,000 board feet, having a stumpage value of about $550,000,000. Their harvesting and utilization sustain many industries and give employment to thousands of people. Immature stands of these species cover large areas of forest land and form a most important part of the forests of the future. The intrinsic value of their wood, their rapid growth, their wide range, and their adaptability to forest management give them a commanding place in the forestry of this country. The continued maintenance of these species in our forests is a matter of regional and national concern.

In the eastern United States the disease has been present about 25 years, although it was not known to be widely established on native pine until 1916. Since then control measures have been developed and demonstrated by extensive field tests to be practicable and effective. A control program, requiring an estimated period of eight years for completion is now under way in cooperation with

the affected States. Such action is necessary to prevent serious losses in maturing stands and to assure stability in the continued production of the pine crop.

The control program has made good progress and public interest and cooperation in the work have been very satisfactory. Each year numerous individuals and many townships have joined in the cooperative work, and control measures have been applied on 3,447,485 acres of land.

In the West a 10-year control program in cooperation with the States concerned has been vigorously prosecuted. Apparently the disease was introduced from France into British Columbia about 1910 and became thoroughly established on native host plants before its discovery in 1921. It has spread into eastern British Columbia to within 35 miles of the white-pine region of Washington and Idaho, and to the south it has extended its range through western Washington to the Columbia River. No further extension of the disease was found in 1924. This probably was due primarily to the dry weather conditions that prevailed in the Northwest and to the extensive eradication of cultivated black currants. Additional pine infections were found in western Washington, indicating that the rust is beginning to establish itself on the native pine host in that region.

Cultivated black currants (*Ribes nigrum*) have been systematically located and eradicated in western Montana, Idaho, Washington, Oregon, and northern California. This species of currant becomes diseased at great distances from infected pines and establishes new disease centers from which the rust spreads locally to other currants and gooseberries and to white pines. The department recognizes this currant as a distinct menace to the white-pine timber supply of the country and is opposed to its growth in the United States. Some States have declared it a public nuisance and prohibited its further culture.

Citrus Canker Eradication

As a result of the vigorous campaign conducted by the Gulf States in cooperation with the department, citrus canker, a bacterial disease of citrus fruits and trees, has been practically eliminated from the greater portion of this region. Mississippi has not reported any new infection since November, 1922, and, apparently, is free from canker. The work in Alabama has been very effective. The last infection found there was in June, 1924. Florida reported the discovery in March, 1925, of five infected trees on two town lots at Boynton. All citrus trees on these properties were destroyed and a rigid inspection of the entire district was conducted, but no more infected trees were found. With this exception, Florida has been free from canker since October, 1923. In Texas the work has progressed satisfactorily. No new infections have been reported.

Scattered infections of nursery stock are being found in Louisiana. During the past year major efforts have been devoted to citrus properties in Terrebonne and Lafourche Parishes, where all trees were uprooted from properties where citrus canker had been found. New trees were planted under permit to prevent owners from planting trees in the same soil or in close proximity to soil from which canker-infected trees were removed. Because of scattered infections

in dooryard plantings in Louisiana and the possibility of similar infections occurring sporadically in other States, it will be necessary to maintain at least a reconnaissance inspection of the entire citrus area for several years.

Sugar-Cane Investigations

Despite the disastrous flood which occurred at the field station at Canal Point, Fla., in October, 1924, a number of new sugar-cane seedlings were produced, and about 300 of them survived. These are all from parents which are immune to or tolerant of mosaic, a disease which is responsible for much curtailment of sugar-cane yields in Louisiana. Approximately 1,300 seedlings produced at the station in previous years were given preliminary trials, and a large proportion of them have been discarded. About 500 promising ones were sent to our field stations at Cairo, Ga., and Houma, La., for further trial. Performance records of about 5,000 sugar-cane seedlings in various stages of testing are now on hand. In addition to the seedlings many standard varieties imported from foreign countries are being tested at Canal Point.

Imported varieties of sugar cane and seedlings from Canal Point were tested at this station. One of the varieties proved decidedly better than the "native" varieties, and was distributed to nearly 3,000 planters in the Gulf States. Our field men also supervised the distribution by the American Sugar Cane League of 52 half-ton lots of the same seed cane. The department's work in importing, testing, and distributing this variety, which is extremely resistant to mosaic and root disease, should have very beneficial results.

Sugar-Beet Investigations

A study of different sugar-beet areas of the United States shows that in some regions development of effective fertilizer practices, together with modern field operations, will assure satisfactory production. In other regions pests and diseases appear to be the essential limiting factors. Among the more important of these troubles is the sugar-beet nematode. The efficiency of economic rotation systems for controlling the sugar-beet nematode has been established and from the experience gained it would appear that areas of heavy infestation should be readily controlled and serious future losses from this cause avoided.

Perhaps the most important single factor limiting sugar-beet production in the western areas is the curly-top disease, caused by the virus transmitted from diseased to healthy beets by the sugar-beet leafhopper. Important technical discoveries regarding this disease have been made during the last year, although the exact nature of the virus still remains undiscovered and no method of destroying either the virus or the leafhopper has as yet been found.

Observations made in various sugar-beet growing areas in the States west of the Rocky Mountains revealed striking contrasts between different localities in the amount of curly top occurring. In southern California there was more curly top in 1925 than has occured in the eight years during which the fields have been observed.

On the other hand, the prospects for a beet crop in the intermountain region were the most favorable in a number of years.

In the Yakima Valley of Washington last season approximately only 25 per cent of a normal crop was harvested from a large acreage. The losses from curly top in this valley have been so serious and frequent in occurrence that by 1925 beet growing had been practically abandoned. Three fields, comprising only about 20 acres, were planted. In southern Idaho, where last season more than 10,000 acres were ruined by curly top, the 1925 crop was in excellent condition. In Utah there was this year relatively little curly-top damage, whereas the only previously recorded outbreak of curly top in Utah which can be compared in seriousness with that of 1924 occurred in 1905.

The most encouraging phase of the recent work is the slightly greater resistance to the disease shown by some strains developed by specialists engaged in breeding beets for disease resistance. Although these strains are not sufficiently disease resistant to be of commercial importance, even this much gain in the knowledge of combating the disease is noteworthy, and accordingly the department has undertaken a thorough exploration of the native home of the sugar beet in the hope of there discovering more resistant types which can be used for intensive development of the work of breeding for disease resistance.

Red-Clover Seed Production

Red clover is by far the best restorative crop in Corn Belt rotations. The steady decline of the red-clover acreage over a long period has adversely affected the yields of all other crops involved in the rotation. For at least 15 years the United States has been a heavy importer of red-clover seed. Most of this seed has come from Italy and southern France. Evidence is accumulating to show that much of this imported seed is not satisfactory for use in America. Cooperative trials which the department has been carrying on with experiment stations in the Middle West have shown that the plants from imported seed are much more likely to winterkill than those from American seed; that they are more susceptible to certain diseases, and that they often give a smaller crop even when the stand is otherwise apparently satisfactory.

As far as our investigations have progressed we have found that Italian seed is everywhere unsatisfactory and that French and Chilean seed, although giving good yields in some parts, is unsatisfactory in Iowa, Minnesota, and elsewhere where the winters are severe. During the past year there has been a considerable development of the cooperative movement in the purchase and sale of red-clover seed. Those most active in this movement insist on the condemnation of all imported seed and the use of the United States grown seed only. With the present limited production in the United States the American farmer can not confine himself to domestic seed, and the importation of something like 12,000,000 to 15,000,000 pounds annually is necessary.

The fact has developed that red-clover seed may produce plants unsatisfactory to the American farmer either because they are not resistant to cold or are not resistant to disease. It has been custom-

ary in the past to call every case where clover died out during the winter a case of winterkilling. The department has learned, however, that in the region approximately south of the Potomac and the Ohio, winterkilling due to freezing or freezing and thawing is a rare phenomenon, but that most of the destruction of the clover in that area is caused by anthracnose. Just how far this disease is serious is not known, but this phase of the work is being studied. It is known, however, that plants raised from Italian seed are extremely susceptible and that plants from European and South American sources vary in susceptibility, some lots suffering very heavily and other lots scarcely at all. We also know that seed from certain parts of the United States will produce plants which, in the area where the disease is severe, will suffer as much as French or Chilean plants, whereas seed from other sections appears to produce plants with a high degree of resistance.

Field Tests of Imported Alfalfa Seed

The tendency to increase the acreage of alfalfa, particularly east of the Mississippi River, is now very marked. This tendency has resulted in very large increased demands for alfalfa seed. Our domestic supply has rarely, if ever, been adequate for home needs. In the past two or three years the supply has not nearly kept pace with home consumption and has resulted in the importation of considerable quantities of seed from foreign sources, particularly Argentina and South Africa. This seed has been sown very generally in the eastern part of the United States, regardless of latitude. Although the seed from Argentina, according to the preliminary tests that have been made by the department, gives very satisfactory results as far north as central Pennsylvania, it does not appear to be sufficiently hardy north of this line to be dependable. On the other hand, the seed from South Africa, according to the preliminary tests, which are not nearly as extensive as those made with seed from South America, does not appear to be particularly well suited to any part of the United States where alfalfa is grown.

VII. The Department of Agriculture: Scientific and Extension Work

Extension Service

The past year marked the beginning of the second decade of cooperative extension work between the department and the State agricultural colleges under the Smith-Lever Act. It saw the further rounding out of this national system of education among American farm people and their increased participation in planning and applying it to the needs of their local communities. More than 180,000 farmers and farm women acting as volunteer leaders joined with the paid extension forces in undertaking to improve agricultural and home practices. Farmers and farm women themselves were encouraged to explain the demonstrations, conduct the meetings, make reports, write necessary letters, explain extension work, and solicit support for it. Self-conducted demonstration was a basis for this teaching. More than a million demonstrations influencing farm and home practices were carried to completion during the

year. Of these demonstrations 645,000 were conducted by adults and 489,000 by farm boys and girls. This increased participation in extension activities by farm people has markedly stimulated thought and resulting action looking toward better farming methods, higher standards of living, and a more attractive farm life.

The total forces employed in cooperative extension work in the States during the year numbered 4,868 persons. Of that number 3,455 were located in the counties, and of these 2,171 were engaged in county agricultural agent work, 880 in home-demonstration work, 133 in boys' and girls' club activities, and 271 in extension work with negroes. There were in addition 723 full-time and 207 part-time subject-matter specialists with headquarters at the State agricultural colleges supplementing the work of the county agricultural agents. Supervisors, assistant supervisors, and administrative officers numbered 483. Public agencies continued to take over an increased part of the financing of county extension work, with a consequent gradual decline of funds from private sources. This trend further stabilized the status of extension work in the counties.

State and regional programs for farm and home improvement were developed during the year. The Northeastern and far Western States, in particular, worked out sectional programs based on carefully selected economic data. In formulating these programs chief consideration was given to their effect on the fundamental agricultural enterprises of the States involved. At the conference of extension workers in the Western States held at Tucson, Ariz., in November, 1924, recommendations were adopted covering the production of alfalfa, corn, and barley in relation to the range livestock and dairy program; home gardening and fruits in relation to the human-nutrition program; and potatoes and wheat as cash crops.

The nutrition specialists, meeting in connection with the extension conference of the Northeastern States in New York City in February, 1925, developed a sound basic program for extension work in nutrition, involving particularly food selection, preparation, preservation, the food budget, prenatal and postnatal nutrition of the mother and nutrition of the infant, the preschool child and the school child. The program contemplates training schools in subject matter for extension agents, use of well-trained local leaders, improvement of demonstrations and development of the growth work in connection with boys' and girls' club projects based on the idea that the club member should be his own best exhibit.

Exhibits and Motion Pictures

Marked progress was made in the effectiveness of the department's exhibits at fairs, particularly at the National Dairy Show and the International Livestock Exposition. At the latter a feature which created much interest portrayed the contrast between common and good beef cattle, with live animals of the two classes as calves, feeders, and finished steers. Samples of the principal cuts of meat from good and from common steers were also shown. The exhibits were accompanied by appropriate backgrounds and legends pointing out the difference in the two classes and the better financial returns from the good steers. Showings were made by the department at 86 fairs, expositions, or other gatherings.

During the year, 28 new educational motion pictures were completed and 30 old films were revised. The department now has a film library of 1,862 reels available for distribution, consisting of from 1 to 50 copies of more than 200 different pictures. Shipments of films to cooperative users numbered 4,260, an increase of 33 per cent over the previous year and double the number made in 1923. Actual attendance at showings of department films totaled nearly 3,000,000. Conservative estimates of attendance at showings not reported and of films purchased by State extension services and other agencies indicate that 9,000,000 persons saw department films during the year.

Broadcasting Weather Forecasts

At the close of the year there were 121 stations, located in 40 different States, broadcasting weather forecasts and information by the radiophone on regular schedules. About 95 per cent of all the powerful radiophone-broadcasting stations in the United States are now cooperating and many of them broadcast forecasts for several States, and people in every section of the country are being served. The scope of the radiophone weather service may be estimated when it is known that, for instance, in the State of Iowa alone there are over 33,500 receiving sets *on farms*. It is estimated that the weather forecasts are available by radio to more than half a million farms in the United States.

An outstanding feature of the Weather Bureau's work last year was the warning given citrus growers the latter part of December of the approaching period of cold weather of unusual length and severity. On this information an additional 300 carloads and 175 truck loads of oil were rushed into the citrus districts to meet the impending emergency, which came as forecast. Eight specialists were assigned to duty during the frost-danger season in the citrus and deciduous fruit districts of the Western States. There were urgent requests from fruit interests for additional service in other portions of the country. This service has become one of the most valuable conducted by the bureau. Its cooperation with fruit growers materially assists in the saving of hundreds of thousands of dollars annually.

The fruit-spray forecast service is principally for the benefit of apple orchardists. It consists of special weather forecasts as a guide in the application of sprays to combat scab and fungous diseases. The season begins in early April and continues into the latter part of June. The harvest weather forecasts are designed for the use of farmers during the harvesting season in determining when wheat, oats, and hay can be cut and harvested to the best advantage and with the least likelihood of damage from wet weather. The season runs from about the middle of June until the latter part of September. The fruit-spray service heretofore confined to the State of New York was extended in a limited way to other States, particularly Pennsylvania. The harvest-weather service was expanded to 44 counties in the State of New York. The past year was the first during which the projects were carried on as established programs, owing to the availability of the specific appropriation made by Congress for the work. In one county alone

the money value of the spray service to fruit growers was estimated from $40,000 to $60,000. It is estimated that about 24,000 farmers obtained the harvest-weather forecasts, and reports indicate that many thousands of dollars were saved by farmers who used the weather reports, and those who did not have reports in many cases lost heavily.

During the late summer and early fall months fruit drying is one of the principal industries of the central valley of California. Fruit to the value of $40,000,000 to $50,000,000 is at times exposed to the weather in trays in the process of drying. The occurrence of rain without warning a sufficient time in advance to protect by stacking the trays or placing them under shelter would cause large losses from complete damage or deterioration in quality of the fruit. Therefore, much responsibility rests on the weather forecasters and the growers depend on the Weather Bureau to advise them when protective measures are necessary. In order that the best possible service may be given to this important industry arrangements were made during the year for providing the district forecaster at San Francisco and the local forecasters at Fresno and Sacramento with special observations by telegraph from points in California and near-by States whenever conditions indicate the probability of rain in the raisin-growing districts.

The great flood period of the year was that of January, 1925, in the rivers of the South Atlantic States. The warnings of the coming, duration, and extent of the floods were issued with timeliness and accuracy. Special efforts of the Weather Bureau in assembling data and issuing flood warnings during the flood crisis were estimated to have been the means of saving $1,000,000 to the citizens in river territories in middle and southern Alabama. Much property was saved during the year in other portions of the country through the flood warnings of the Weather Bureau, the total reported value of property saved being $2,209,975, which, of course, is not a complete record of the saving effected.

Fighting Insect Pests

Further progress was made in fighting insect pests. The campaign for the suppression of the plum curculio in Georgia, which has resulted in the saving of several hundred thousands of dollars a year to the peach growers of the South, was this year extended to include a trial of dusting with arsenicals by means of the airplane. Further experimentation improved the paradichlorobenzene treatment for the peach borer. This treatment was developed by the department a few years ago. Its use has now been extended to the southern peach-growing districts, where it is said to save millions of dollars annually. The use of lubricating or engine oil emulsion for the San Jose scale has been extended and placed in a firm basis. It is now regarded as a cheap and efficient standard treatment for this pest. A new insecticide field has been opened by the discovery of the value of fatty acids as contact insecticides, especially efficient for plant lice and similar insects.

The Japanese beetle has been held to the region of its original infestation. The operations of the department, in cooperation with the States of Pennsylvania and New Jersey, have prevented its

spread to other parts of the country. Much progress has been made in methods of control, in the study of the biology of the beetle, and in the importation of its natural enemies. Several of these enemies imported from the Orient have become established in this country. Additional European parasites of the European corn borer have been imported.

The dusting of cotton fields with arsenate of lime by the airplane as a boll-weevil remedy, originally developed by the department, has been adopted commercially. Indications are that it will find a place in the regular routine of the large cotton planters. This means that the poisoning will be done by experts in a more satisfactory way than by farm labor. The use of the airplane in distributing arsenical dust over more or less inaccessible standing water near plantations in the delta region of Louisiana resulted in the destruction of over 99 per cent of the larvæ of malarial mosquitoes.

An improved poison bait, in which sodium fluosilicate has been substituted for Paris green, has been worked out for the control of wireworms in tobacco fields. In the case of heavy infestations the crop stand has been increased by this application as much as 12 per cent. In the work against sugar-cane insects agents of the department have developed a method of soaking the seed cane in water of ordinary temperature for 72 hours, destroying all borers of all stages and stimulating germination of the plant.

European parasites of the European earwig, an insect causing much damage in the Northwest, have been imported and liberated, with the strong prospect that at least one of them will become established at Portland, Oreg. Eradication of the sweet-potato weevil has been accomplished in what is known as the Baker-Charlton area in north Florida. This indicates that the principal threat to commercial sweet-potato growing in the Gulf States can be eliminated.

An outstanding achievement has been the discovery that the application of high vacuum can be used successfully in the control of insects attacking many products in storage. These results indicate that a high-vacuum chamber is a feasible and desirable part of the equipment of a modern storage warehouse. Work in the control of bean weevils in California has resulted in the discovery of facts concerning the biology of the weevil which will result in the saving of many hundreds of thousands of dollars to the California bean growers. The barrier zone between New England and New York State, established for the purpose of retarding the march of the gipsy moth, has been maintained successfully, and the large colony of this insect found a few years ago in New Jersey is being wiped out.

Foot-and-Mouth Disease Eradication

Prominent among the department's activities in combating animal diseases was the suppression, during the last fiscal year, of foot-and-mouth disease. This highly infectious malady, which occasionally has gained entrance into the United States, was controlled and eradicated by rigorous methods of inspection, quarantine, slaughter of infected herds, and the cleaning and disinfection of premises. At the beginning of the fiscal year the extent of foot-and-mouth disease which appeared in California early in 1924 had been limited

to the counties of Los Angeles, Tuolumne, and Merced. The last outbreaks among domestic livestock in these counties occurred on August 23 and October 9, 1924, and April 5, 1925, respectively. In the testing and restocking of 702 premises which had contained foot-and mouth disease the malady reappeared on only two, demonstrating the thoroughness with which the inspection forces conducted cleaning and disinfection.

The difficulty of eradicating foot-and-mouth disease was increased by infection among deer in the Stanislaus National Forest. Cooperation of the Bureau of Biological Survey, the Forest Service, the State Department of Agriculture, and the California Fish and Game Commission with the Federal Bureau of Animal Industry made possible the eradication of the disease from the deer in the forest. The last deer showing recent infection was killed June 10, 1925. As a precautionary measure, the Stanislaus National Forest was closed to grazing during 1925. A separate outbreak of foot-and-mouth disease in Texas was officially confirmed September 27, 1924, in a herd of Zebu cattle south of Houston. Methods similar to those used in suppressing the California outbreak resulted in the suppresison of infection in Texas within 30 days. It seems probable that infection entered Texas through a gulf port, since investigation established no connection between this outbreak and the one in California.

Outbreak and Suppression of European Fowl Pest

In the fall of 1924 the European fowl pest appeared in the United States, menacing poultry flocks. This new, highly contagious malady broke out in the States of Pennsylvania, New York, New Jersey, Connecticut, Indiana, Michigan, West Virginia, Missouri, and Illinois. Most of the infection was limited to the four States first named. To prevent the spread of this disease the department, by official order, prohibited the interstate shipment of live chickens, turkeys, and geese affected with or directly exposed to European fowl pest. The order also required the cleaning and disinfection of premises, cars, coops, and other equipment used in handling interstate shipments of poultry affected with the disease. Affected birds were slaughtered, and, together with birds that had died, were burned or deeply buried. An appropriation of $100,000 promptly made by Congress—in the absence of funds available for poultry-disease work in the field—contributed greatly to the thoroughness of control measures. Methods used for suppressing European fowl pest were similar to those used in combating foot-and-mouth disease. By May 1, 1925, the fowl malady was virtually eradicated; infection subsequently appeared only in one small flock of chickens in New York, where it was promptly suppressed. In dealing with such pests immediate action is half the battle. The serious effects of the fowl pest outbreak on agriculture and other industries deserve attention. Prices of poultry broke badly when the disease began to spread and producers and distributors suffered heavy losses. Poultry-dressing establishments, especially in the East, were obliged to discontinue operations, throwing thousands of employees out of work.

Tuberculosis Yields to Aggressive Testing Program

It is gratifying to report that tuberculosis of livestock is yielding in the aggressive campaign waged against it by Federal, State, and county forces. Improved State laws, liberal State appropriations, and a better understanding of the work by stock owners have aided the work. Field operations for the year showed a 32 per cent increase in the number of cattle tested compared with the previous fiscal year. Tests were applied to over 7,000,000 cattle, of which 3.1 per cent showed tuberculous infection. This figure was slightly less than in the preceding year and was still lower than the average of former years. The degree of infection, however, varies widely in different States. Altogether 214,491 tuberculous cattle were detected and slaughtered, thereby removing a large menace to both the human population and farm animals.

The plan of eradicating bovine tuberculosis from areas—usually a county—is now recognized as the preferred method for conducting the work. More than two-thirds of the cattle tested during the year came under the area plan. Altogether 591 counties have completed or are engaged in eradicating bovine tuberculosis, this number representing an 86 per cent increase over last year. In addition to the county-wide activities, there was a gain of 24,110 herds accredited as free from tuberculosis, bringing the total of such herds to 72,383. The proportions which tuberculin testing has assumed in recent years may be judged from the impressive number of cattle that have received the test. More than 11,000,000 were under supervision at the end of the fiscal year, with an additional 3,500,000 on the waiting list.

In conjunction with the testing work the department has held many meetings and conferences and has distributed much educational literature and exhibit material for the information of the public. Opposition to official tuberculin testing, which some years ago obstructed the work in numerous localities, has gradually declined and is being replaced by cooperation. In fact, State appropriations for tuberculosis eradication during the year aggregated about $7,000,000, or more than twice the funds provided by the Federal Government. The outlook for the continued eradication of tuberculosis of livestock, including cattle, swine, and poultry, is unusually promising.

Federal Meat Inspection

Although the inspection of food animals, meats, and their products is now commonly accepted as a "public service" Federal activity, brief comments on its current extent may be of interest. During the fiscal year the department conducted Federal meat inspection at 910 establishments in 257 cities and towns. Altogether about 75,000,000 food animals, of which more than three-fifths were swine, passed under the scrutiny of trained Federal inspectors. Federally inspected slaughter continues to represent about two-thirds of the total kill of food animals in the United States. The remaining one-third, representing mainly local and intrastate business, does not come under Federal authority.

Besides the assurance of wholesomeness which the United States meat inspection service provides, the inspection constitutes an important factor in export trade. During the year the department issued more than 100,000 official meat-inspection certificates. These covered the exportation of over 1,500,000,000 pounds of meat products and over 100,000,000 additional pounds of inedible animal products. During the year imports of meat from abroad were a very small percentage of the export business. Records of meat inspection afford livestock producers much information concerning the health of farm animals received at the principal market centers. Of 35 diseased conditions that occur with greatest frequency among animals offered for inspection, tuberculosis is by far the most serious. This disease caused more condemnations of cattle carcasses than all other diseases and ailments combined. It also was by far the most important cause for condemnation of hog carcasses and parts.

Tick Eradication Makes Progress

Previous success in eradicating cattle-fever ticks from Southern States has resulted in a continued vigorous campaign to free the entire South from this pest, which causes disease and a large economic loss. Of 975 counties quarantined because of cattle-fever ticks on July 1, 1906, when the work of eradication was launched, 529 were released from quarantine and were tick free November 1, 1924. The complete eradication of cattle ticks from 71 counties is one of the outstanding achievements of the current tick-eradication season. On December 15, 1924, Federal quarantine restrictions were lifted from the entire State of Georgia following the success of tick eradication in that Commonwealth. Progress in destroying the pest required the use of over 25,000 dipping vats and more than 24,000,000 inspections or dippings of cattle were conducted.

The department continues to stress the importance of completing tick eradication in areas released from Federal quarantine, but in which a small degree of infestation remains, such premises being continued under quarantine regulations. The importance of "clearing up" such areas of potential danger with vigor is shown by abundant field experience. Many of the encouraging results here reported are due to the use of two portable motion-picture outfits that have molded a favorable sentiment for this work. The motion pictures show proper methods of conducting tick eradication and the benefits to be derived. These machine exhibits are given in small towns and in rural schoolhouses in tick-infested districts, 530 showings having been made during the year.

Livestock Improvement

Information received from many sources shows the continued improvement of livestock in the United States with respect to its breeding and utility value. Although much of this progress is of an intangible nature, department records obtained under the "Better Sires—Better Stock" plan show an unmistakable trend toward the wider use of purebred sires and subsequent improvement in the quality of herds and flocks. Under the plan mentioned livestock owners signify their intention to use purebred sires exclusively for all classes of livestock kept and report the number and quality of

their breeding stock. During the year approximately 1,500 stock owners definitely placed their livestock-breeding operations on a purebred-sire basis, bringing the total number participating since the work started to 15,818. Moreover, six more counties qualified for the list of those having 100 or more livestock owners using purebred sires of good quality in all breeding operations. At the end of the year 41 counties had reached this goal.

Records continue to show that ownership of purebred males leads promptly to a large number of purebred female animals in all classes of stock kept and to a gradual grading-up process, with the reduction of scrub stock to a negligible number. Information obtained during the year by an extensive questionnaire covering 45 States shows that the high utility value of purebred livestock is becoming recognized by stockmen. The inquiry showed that more than half of purebred food animals are marketed directly for meat purposes; that purebreds are much more profitable to raise than scrubs, and somewhat more so than grades, the degree depending on the proportion of pure blood the grades possess; and that about 96 per cent of persons who give purebred sires a fair trial stick to the general principle of using them for all classes of stock. According to farmers' reports, purebred meat animals cost slightly less than scrubs to raise to maturity; purebred dairy cattle cost slightly more. Purebreds are, of course, worth much more when raised. The same inquiry indicated that only about half of the purebred animals eligible to registration are actually registered. This matter is of interest in connection with figures of the last census showing the number of registered purebred livestock. The principal reasons for not registering purebred animals, as reported, are intention to sell for slaughter, poor individuality, and lack of demand for registration papers when stock is sold.

Low Hog-Cholera Losses

The swine industry during the last fiscal year experienced the smallest losses from hog cholera since official records of the disease have been kept.

At times cholera has taken toll of as high as 10 per cent of the swine, whereas last year the loss from this cause was only 3 per cent. The lessened prevalence of the disease has caused swine owners to give less attention to immunizing their animals, with the result that more swine herds on farms are left susceptible to hog cholera than in other years. Consequently, heavy losses may be expected should the disease begin to spread before outbreaks can be checked. Promptness in immunizing swine, should outbreaks appear in a locality, is therefore extremely important if such outbreaks are to be checked promptly.

A system of swine sanitation, developed in McLean County, Ill., several years ago by department workers, has spread widely throughout hog-raising States. The system controls roundworms and related filth-borne diseases of young pigs. Pigs raised in accordance with the system grow and develop more evenly and are ready for market fully a month earlier than under usual methods of management. The experience of numerous swine raisers in the Corn Belt, who have practiced the method, shows that they can rear as many

pigs as formerly with two-thirds as many brood sows. Death losses and runts caused by worms and hog-lot diseases are avoided almost entirely. Extension workers in Iowa, Nebraska, and other States, as well as in Illinois, are actively engaged in extending the system which has resulted in so many benefits.

Livestock Research

Research on livestock problems has gone forward steadily. Several investigations have led to results of outstanding promise. A method of producing immunity against tuberculosis is being tested, with results thus far of an encouraging nature. Another promising series of experiments deals with the mode of action of disinfectants. Results furnish new information on the germicidal power of disinfectants with relation to their chemical composition. Other research deals with the study of bovine infectious abortion, factors influencing soft pork, the vitamin content of meat and meat products, the chemistry of plants poisonous to livestock, tests of chemicals to remove internal parasites, and rabies. There is a popular idea that rabies is a disease of the hot "dog days" of summer, but a large proportion of the suspected animals examined by department scientists were brought to the laboratory during the months of December, January, February, and March.

The Synthetic-Ammonia Process

The most striking recognition of the work of the Fixed Nitrogen Research Laboratory during the last year has been the adoption of its synthetic-ammonia process by an American company. The company, with the cooperation of the laboratory, has applied the process in a plant that was put into successful operation in the spring of 1925. This is an outstanding result of research work extending over several years. The plant operates at a pressure of 300 atmospheres (4,400 pounds per square inch) and is capable of producing 3 tons of ammonia per day. Its successful operation within so short a time after its construction demonstrates the soundness of its design. The synthetic-ammonia process is in a continual state of development. The present process, with its various improvements, may be regarded as a considerable step in advance of the Haber process as originally installed in Germany. Still another process, the French or Claude process, is now being installed in this country. It will operate at 900 atmospheres (about 13,000 pounds) pressure.

In the prosecution of the nitrogen-fixation work, which necessarily involves the employment of unusually high gas pressures, a satisfactory engineering practice had not been developed in some of the details of high-pressure equipment. This was especially true of high-pressure relief valves and gaskets. Such "pop valves" as existed were more in the nature of emergency or safety equipment, which were rendered useless or required extensive refitting after each accidental operation. An automatic continually operating high-pressure relief valve has been designed and successfully used. It has application not only in the nitrogen-fixation indus-

try but in all others employing high pressures of gases, vapor, or steam. It has been most favorably received by the various industries which can use it, especially by manufacturers of compressor equipment.

The increasingly high pressures utilized in ammonia synthesis have developed another pressing need in high-pressure engineering, namely, suitable gaskets to withstand all pressures. The old principle of gasket design for high pressures was to make them broader the higher the pressure to be resisted, on the theory that the greater the area of contact the greater would be the resistance. The falsity of this principle was recognized in this laboratory when it was realized that by distributing the pressure that could be applied to the gaskets over too great a gasket area the pressure per unit area would thus be reduced below the pressure of gas to be withstood, and consequently blowouts would inevitably result. A method of designing the gasket area and reducing it exactly to fit the conditions of use has brought about the greatest improvement. This design is also being eagerly adopted by the ammonia industry.

Although it has been recognized for a long time that some nitrogen from the atmosphere becomes fixed in the form of cyanide in blast-furnace gases, no serious effort has been made in this country to determine whether the quantity is commercially important and whether it would be feasible to recover it. No actual attempts at recovery have ever been made. In cooperation with the Bureau of Mines a complete survey has been made of one blast furnace in the Birmingham district. The results of the survey show that cyanide is produced in the gases in a concentration which should render its recovery economically profitable. This survey will be extended to other blast furnaces with the ultimate object of recovering this source of cyanide which would otherwise be wasted and which is essential in producing hydrocyanic acid for application as an insecticide in the citrus-fruit industry.

In the realization of the difficulties that will be encountered in the direct introduction of concentrated forms of nitrogen into the fertilizer industry this laboratory has been cooperating with other bureaus in the department. The object of this cooperation is, on the one hand, to prepare the way for stimulating the use of concentrated fertilizers from the agricultural standpoint, and on the other, to give the farmer the advantage of such use through obtaining proper freight rates on the concentrated products. This will mean a reduction in the cost of shipping the smaller tonnage of the concentrated material. Active cooperation with the Bureaus of Soils, Plant Industry, and Agricultural Economics has been sought and obtained in the prosecution of these objects.

Finding "Bait" for Boll Weevils

Chemists in the department completed an investigation to ascertain the odorous constituents of the cotton plant. This investigation was undertaken to ascertain the chemical nature of the substances which are presumed to attract the boll weevil. Since the cotton plant possesses a specific attraction for the boll weevil, it has been supposed that this was owing to the emanation of some odorous sub-

stances which could be detected by the insects at a considerable distance. It was thought that if an odorous substance could be identified which by actual tests would be found attractive to the insects, it might be possible to produce it in sufficient quantity to permit of its use as bait. In the course of the investigation a large number of definite chemical compounds, some of which have a very pleasant ordor, were isolated from a distillate of the plant. These volatile basic substances are constant exhalations of the plant and it has been found by field experiments which are being continued that one of them (trimethylamine) possesses some attraction for the boll weevil.

Several other important chemical discoveries deserve note. Lignin is a cellular substance which is widely distributed throughout the plant kingdom. A number of agricultural products which are not now fully utilized contain it in large quantities, as, for instance, corncobs, cornstalks, straw, cotton-plant stalks, and the like. Heretofore no method has been known for extracting lignin from the material in which it is found. The department's Bureau of Chemistry has discovered a solvent which dissolves the lignin. An investigation of the lignin in corncobs resulted in the discovery that when it is dissolved in this solvent it forms an excellent varnish. This varnish is water and acid proof, and when applied to wood it gives a shining and transparent surface. Other profitable uses for it may be found.

Owing to the highly inflammable and explosive properties of carbon disulphide, the objections to its use as a fumigant for destroying insects in stored grain are so serious that fire insurance companies refuse to carry the risk on elevators, bins, and other property while it is being employed for this purpose. The railroads have prohibited the use of carbon disulphide except at two designated isolated points for fumigating cars loaded with grain. Because of this situation the Bureau of Chemistry in cooperation with the Bureau of Entomology undertook an investigation to discover a safe, effective fumigant to take the place of carbon disulphide and as a result has developed a new fumigant consisting of a mixture of ethyl acetate and carbontetrachloride, which is effective in killing destructive weevils in wheat in box cars, grain elevators, and other tight inclosures. This fumigant is noninflammable at fumigation temperatures, is noninjurious to those handling it, does not lower the germinating quality of seeds, and does not injure the baking quality of flour from fumigated wheat. It costs less than 1 cent per bushel for fumigated wheat. Great benefit will result to those producing and handling wheat from this development of a fumigant which can be used without voiding the fire insurance on the buildings. The results of this investigation in detail are published in Department Bulletin No. 1313.

The unusually small cane crop last year caused an increase in the price of cane sirup, particularly unsulphured sirup. This situation made it profitable for sugar-cane growers in certain sections to convert part of their cane into sirup instead of sugar. However, the method of making cane sirup which has customarily been used in the sugar district of Louisiana is that in which sulphur fumes and lime are used for clarifying the juice. This process imparts a peculiar sulphured flavor to the sirup, which interferes with extension of the market. Investigations conducted at two Louisiana plantations resulted in an improved method for producing unsulphured

sirup under the conditions prevailing there. This was an achievement of considerable economic importance, since under existing market conditions the margin in favor of making cane sirup instead of sugar amounted to as much as $2 per ton of cane. The foregoing illustrates the application of chemical research and chemical technology to a practical problem, with the object of procuring such flexibility in the manner of utilizing a crop as will permit better adaptation to changing conditions and markets.

Previous investigations had resulted in the development of a method for preventing crystallization of cane sirup by use of the enzyme invertase derived from yeast. During the past year this method was extended to sorghum sirup, and its use has permitted the production of sorghum sirup which does not crystallize even when concentrated to the high density which is frequently desired. Crystallization causes the sirup to have an unsightly appearance, which is detrimental to profitable marketing of the sirup, especially when it is concentrated to the high density so often desired by consumers.

As the result of the application of methods developed in the plant-dust-explosions work carried on in the Bureau of Chemistry there were no dust explosions of major importance involving large loss of life and property during the last fiscal year in the grain-handling industries. This is in marked contrast to the previous year, when a number of explosions occurred, the principal one being the starch-dust explosion at Pekin, Ill., in which 42 men lost their lives and approximately $500,000 worth of property was destroyed. Much of this prevention has been due to the work of the bureau in bringing to the attention of the industries the hazards of dust explosions and methods that can be adopted for their control. This applies principally to the grain-handling industries, in which field the bureau has been principally engaged. In addition to the industrial phase of the work the progress made in the adoption of methods for the prevention of explosions and fires in threshing machines in the Pacific Northwest and fires in cotton gins in the Southwestern States has been very gratifying. The insurance underwriters in the Northwest are offering considerable reduction in insurance rates for the installation of dust-collecting fans in accordance with the specifications worked out by the engineers of the Bureau of Chemistry. This reduction in rate will mean considerable saving in insurance premiums to the farmers and threshermen in that section and has also brought about the general adoption of precautionary measures for the prevention of these explosions and fires.

A chemical method for determining maturity in cantaloupes has been worked out, published, and successfully applied in the industry in California during the past year. The test is now being applied commercially in California to determine when to pick cantaloupes for the market. The value to the growers and consumers of a proper test for maturity of cantaloupes lies in the difficulty of placing California melons in eastern markets in a satisfactory condition unless they are picked at the right stage of maturity. If allowed to become too nearly ripe before being picked, they can not be kept in good condition until they reach consumers. If, on

the other hand, they are picked too soon, the flesh becomes shriveled and tough, lacking in color and odor and disappointing in flavor. One of the horticultural commissioners in a cantaloupe-producing section of California recently stated that "the establishment of the soluble-solids test for determining the maturity of cantaloupes has practically revolutionized the cantaloupe industry and has been of inestimable value to the growers. Before this method was established the different interstate markets were demoralized by the continuous shipment of green cantaloupes, but this system has eliminated all question as to the maturity of our produce and has proved very economical and practical."

Several promising repellents for use against the screw worm and other flies attacking animals have been developed as a result of the work carried on in southwestern Texas by the Bureau of Chemistry in cooperation with the Bureau of Entomology. It is conservatively estimated that during a year 1 per cent of all cattle, sheep, and goats in that section are infested with screw-worm larvæ, thus jeopardizing annually the lives of animals valued at over a million dollars. Present repellents for screw-worm flies are either largely ineffective or highly toxic to their hosts. This investigation has shown that certain chemicals in various combinations with certain pine-tar oils give very satisfactory results in repelling screw-worm flies from wounds on animals. These preparations also aid in promoting a more rapid healing of the wound.

In an investigation to develop methods for the standardization of raisins, a test depending upon the catalase activity of mold was developed for determining the extent of mold injury in raisins. It was found that if raisins are placed in hydrogen peroxide moldy fruits will at once begin decomposing the reagent with an immediate evolution of oxygen. This makes it possible readily to detect and count the moldy raisins in a given lot. This test can be applied in the field and may be used to settle disputes between buyer and seller as to the extent of damage from mold to any given lot of raisins.

A study of the mold group Aspergillus, begun about 20 years ago and systematically followed throughout the period, has been completed. Molds of this genus are exceedingly abundant in food, in feeding stuffs, in stored grain, hay, fodder, and even occur as human and animal parasites. In spite of their importance and abundance, however, no critical study of the whole group has been reported in English and no such study has been published in any language for more than 20 years. Studies of sections of the group are to be found in publications from this bureau and in French and German.

Truthful Labeling of Foods and Drugs

Through the enforcement of the Federal food and drugs act, commonly called the pure-food law, progress was made in promoting the purity and truthful labeling of foods and drugs that are imported into this country or shipped into interstate or foreign commerce. Action was taken to prevent adulteration and misbranding of a large number of products, but there were some outstanding features of the work on certain products. The enforcement work designed to prevent the canning and distribution of decomposed or partially decomposed salmon reached its culmination during the

year. Following inspection of canneries which revealed that rotten fish were being packed by certain canners libel actions were directed against a number of very large shipments. These seizures, as well as others pending from the previous year, were practically all terminated during the year. The Government was uniformly successful in establishing its contentions where contests in the courts occurred. These actions have resulted in packs which, with few exceptions, promise this season to show little ground for criticism.

How the enforcement of the food and drugs act renders constructive assistance to the industry as well as giving protection to consumers is illustrated by the action on California frozen oranges during the past year. In December, 1924, the California orange groves were visited by a disastrous freeze, which damaged a very large percentage of the fruit then coming into maturity. In much of the fruit the frost damage is not visible in any marked external way, but the fruit in a short time becomes dry and pithy, a condition which is often not discovered by the uninformed purchaser until after the fruit is cut. Knowing that the shipment and sale of such damaged material would result in a fraud to the ultimate purchaser and would also seriously damage the prestige of the California fruit, the vast majority of the growers desired to prevent the shipment of such damaged fruit. In every industry, unfortunately, there are certain individuals who will take advantage of opportunities to ship such material, regardless of the future damage which may be done to the reputation of the industry as a whole and of the cheat upon the consumer.

The authority of the Federal food and drugs act was enlisted to prevent the shipment into interstate commerce of frost-damaged fruit, and through the cooperative action of the State and county authorities of California and the Federal agents of the Bureau of Chemistry a patrol was maintained continuously during the period following the freeze, as a result of which shipments of frost-damaged fruit were practically prevented. The effect has been the saving of thousands of dollars to the eastern consumer, who would otherwise have paid the price of sound fruit for a frost-damaged article, the maintenance of the high standard of the California fruit, and the assurance that the California grower who shipped only sound fruit would receive a full and adequate return for his product.

Discoveries in Chemistry

American manufacturers are now producing vat dyes of brilliant color and lasting quality as the result of processes developed by American chemists for making cheaply and of remarkable purity two dye intermediates which formerly could be obtained only in Germany. The process for making one of those essential intermediates, phthalic anhydride, was worked out in the Bureau of Chemistry and has been outlined in previous reports of the chemist. Because they are fast and durable, vat dyes are especially adapted for cotton goods and their use is being rapidly increased. In 1914 no vat dyes were manufactured in the United States and 1,945,304 pounds were imported. In 1924 there were manufactured in this

country 1,821,319 pounds of vat dyes and 1,499,322 pounds were imported exclusive of the vat dye indigo.

All the phthalic anhydride now manufactured in the United States is made by the process worked out in the Bureau of Chemistry. This essential intermediate has been sold in Europe because of its comparatively low cost and its exceptionally high purity. Approximately 2,300,000 pounds were produced in this country in 1923.

The average price of phthalic anhydride manufactured in America has been about 29 cents per pound, although quoted as low as 16 cents. Before the war the price of the product made in Germany was approximately 30 cents, which would be to-day equivalent to 53 cents. The American product is not only relatively lower in cost but is also higher in purity.

Plant Quarantine Act

The plant quarantine act of 1912 is undoubtedly one of the most useful laws ever enacted by Congress in the interest of American agriculture and forestry. In view of certain misunderstandings with respect to some of the many features of control being exercised under this act, it seems desirable to present a brief statement of its purpose and the broad protective powers under it which are being exercised.

The main purpose of the act is to prevent, so far as possible, further inroads of foreign insect pests and diseases of plants by controlling or prohibiting the entry of any plant or plant product which may be the vehicle for the introduction of such pests. Aside from certain minor efforts by one or two States, no control over such entry of foreign pests had been exercised prior to 1912, with the result that a veritable stream of new pests was entering this country and becoming established. The large development in world commerce in plants, fruits, and vegetables during the last 30 years has greatly increased the danger of such introductions of pests. The increasing entry of such products from Asia, Africa, and other remote regions led to the entry of many pests absolutely unknown, and hence impossible to guard against, such as the chestnut blight, citrus canker, Japanese beetle, and oriental fruit worm.

As illustrating the rate of entry of such enemies, no less than six new major pests gained entry and establishment during the four years immediately preceding 1912. These are the oriental fruit worm, Japanese beetle, citrus canker, potato wart, European corn borer, and camphor scale. These and plant enemies earlier introduced now represent the more important pests of agriculture and forestry in this country and involve annual losses to farm crops which have been conservatively estimated at upwards of $1,000,000,000. Most of these pests are now thoroughly established and widespread in the United States. Some of the more recently introduced ones, however, have still such limited distribution or local foothold as to make it desirable, under any reasonable expenditure, to hold them in check and prevent their spread as long as practicable. The importance of such new pests is indicated in some measure by the fact that Congress is now making annual appropriations for their control, prevention of spread, and in some instances

eradication, of sums totaling upwards of $2,500,000. Such control within the United States of new plant enemies or diseases is the second important object provided for in the act.

For the prevention of entry of known foreign pests about 22 quarantine and restrictive orders prohibiting or regulating entry of plants and plant products are now being enforced. The domestic quarantines enforced under this act deal with such newly established pests as the pink bollworm of cotton, the Japanese beetle, the European corn borer, the white pine blister rust, and the black stem rust of wheat. In addition, all border traffic with Mexico is, under special authority from Congress, regulated and safeguarded. This involves the inspection and disinfection of railway cars, freight, express, baggage, and other materials entering from that country, with the purpose, more particularly, of protecting the great cotton industry of the South from further invasion by the pink bollworm and also of excluding various fruit and other crop pests.

That the restrictions on plant entry from foreign countries have been fully justified by the results is indicated by the fact that during the 13 years of enforcement of this act, there has been, with one exception—the entry of the pink bollworm of cotton from Mexico—so far as known, no establishment of an important new pest. This is in striking contrast with the record of the few years immediately preceding 1912.

There has been much misrepresentation and misunderstanding relative to the exercise of the admittedly large quarantine and control powers under the act, and the statement, which has been widely circulated, that the exercise of such powers is entirely controlled by a small independent group within the department, has no basis. To prevent any such individual or arbitrary action, the act provides for an administrative board to be appointed by the Secretary of Agriculture from the personnel of the three important bureaus of the department dealing directly with the farm and forest resources of the Nation. This provision unites the Bureaus of Entomology, Plant Industry, and Forestry as the administrators of the act, advisory to the Secretary. To further safeguard the exercise of these powers, the act is mandatory in requiring that, prior to the issuance of any quarantine or restrictive order, a public hearing shall be held at which any person interested shall have opportunity to be heard.

The need for taking measures—drastic if necessary—to protect American agriculture from the devastation of additional foreign pests and diseases is universally admitted. It follows that some competent body must make the determinations with respect to the necessary restrictions and safeguards. Congress has placed that responsibility on the United States Department of Agriculture. Certainly this department, with its hundreds of specialists in the fields of plant production, insect enemies, and diseases of plants, would seem to be the proper agency for making such decisions.

Before adopting the present general policy of restricting the entry of foreign plants to horticultural, educational, and scientific needs, the department gave seven years' trial to the system of unlimited entry under foreign inspection and certification, with such reexamination of the imported material as was possible at destina-

tion in the United States. That this system was fairly tried out there is no question, and its failure was clearly indicated by the startling record of pest interceptions with such imported material, and still more by the realization that such interceptions, under the conditions of reinspection possible in this country, necessarily represented only a small part of what was actually coming in.

Under the policy of restricted entry no plant or class of plants is embargoed, but any plant may be brought in for any of the essential purposes indicated above, under the safer inspection and control methods which are possible with limited imports. The importations of restricted or so-called "embargoed" plants, during the six-year period, 1919 to 1925, totaled nearly 50,000,000 plants and, as indicating the liberality of entry under these provisions, it may be noted, for example, that there have been thus imported 80,000 rose plants, representing over 2,000 different varieties, 1,000 different varieties of gladioli, and about 1,700 different dahlias.

Work Under Purnell Act

An event of national importance was the passage by Congress of the Purnell bill, making provision for increased appropriations for the agricultural experiment stations in the States. This act, which was approved February 24, 1925, not only enlarges the funds for research relating to production but makes specific provision for investigation in the fields of agricultural economics, home economics, and rural sociology. These lines have received only limited attention at the stations in the past, and are felt to be of national importance in developing the agricultural industry, the rural home, and rural life.

This legislation is a further recognition of the value of research and the large dependence which must be placed upon it in advancing the agricultural industry and country life. It is also a renewed expression of approval of the State experiment stations, which are working close to the local problems and many of whose findings are regional or national in their application. It is planned to join up more closely than ever before the investigations of the State stations and those carried on by the Federal Department of Agriculture.

Plans ase already under way which will greatly increase this cooperation and provide for coordinated attack on a great variety of problems in the fields of production, distribution, and rural life.

It is confidently expected that this increasing support of the State experiment stations and the closer coordination of their work with that of the department will mark a notable increase in efficiency in studying the problems of agriculture and providing sound information as the basis of improvement. In order to determine policies to be followed in carrying out the provisions of the Purnell Act a widely attended conference of presidents of the agricultural colleges, directors of the State experiment stations, and representatives of this department was held in St. Louis in April, 1925, at which several problems of national scope were adopted as subjects for cooperation between the States and the department. Special committees composed of leading specialists were appointed to outline these problems and serve as a means of inaugurating cooperative investigations under them. Regional questions for cooperative

study were also outlined by representatives from the several sections of the country. The plans for these cooperative investigations on a national scale have since been matured and the work started. With proper encouragement and direction the movement should not only avoid unnecessary repetition or duplication but unite the research agencies in their studies of questions of broad scope and importance.

Soil Surveys

The main work of the department's Bureau of Soils, that of identifying and mapping the soils of the United States, is continuous. Its results vary from year to year mainly in the area covered, which is dependent upon the funds available. The area covered during the fiscal year ended June 30, 1925, was 27,837 square miles, an area large enough to make 120,214 farms of the average size in the United States. The total area surveyed in detail to date is 684,451 square miles, and is about equal to the combined areas of Norway, Sweden, France, and Germany. No other country in the world has amassed any such store of knowledge concerning its soil resources; probably not all the other countries combined have anywhere near approximated the United States in this field. The area surveyed in 1925 was a little greater than that covered in 1924 and not far from the average covered in the last five years.

At the request of the Tropical Plant Research Foundation, the Bureau of Soils cooperated during the year in a general study of the soils of Cuba. Nearly 50 distinct soil types were recognized and defined. Many of these cover wide areas. Heretofore the soils of Cuba have been known as red, mulatto, black, savana, and coco soils, a classification entirely inadequate. The bureau's survey has shown at least four distinct classes of red soils, ranging from those peculiarly adapted to Cuba's chief crop, sugar cane, to others on which this crop can not be grown at all. As a result of the survey, fertilizer experiments have already been started on certain soils indicated as being suitable for sugar production.

Highway engineers in the Government service testify to the value of soil maps in road building. By using the soil maps considerable uncertainty as to the action of certain clay soils as road foundations can be immediately eliminated, expense avoided, and a better road built. Of the various soil classes the clays, it has been found, are likely to give most difficulty, and of the soils of the general class those having certain properties, such as high plasticity and low friability, are the most troublesome.

A few years ago the Bureau of Soils showed that soils contain an appreciable quantity of particles so small that they are visible only in the ultra-miscroscope. Some heavy clays contain 80 per cent or more of these particles which are known as colloids. Further study shows that the colloidal material is almost exclusively responsible for many of the most important properties of the soil, such as coherence, plasticity, and adsorption of salts and vapors. However, the colloidal materials of different soils may vary widely in their properties. Thus it is necessary to know the kind as well as the quantity of colloidal material in the soil before the properties and behavior of the soil can be predicted. During the past year it

has been found that the various properties of the colloid are more or less interrelated and that the properties are dependent upon the chemical composition of the material. This discovery points the way to modifying the old systems of mechanical and chemical analyses of the soil so that they will give more information concerning what a given soil will do and what it needs. Applications of the new information are already being made in the general fields of soil fertility, soil engineering, and soil classification.

Incidental to the investigation of the fertilizer value of the several cocoa by-products, research by the Bureau of Soils brought out the fact that solvent-extracted (defatted) cocoa, a waste product, is suitable raw material for the preparation of the alkaloidal drug, theobromine. As a direct result of this discovery, a large drug manufacturing concern already has started construction of an alkaloidal extraction plant with sufficient capacity for handling the entire output of the defatted cocoa by-product. The investigation indicates furthermore that the ultimate defatted, dealkaloidized product may prove to be a better "crude ammoniate" than the present by-product.

From the point of view of the future development of a large and permanent potash industry the greensand beds of New Jersey, Delaware, Maryland, and Virginia are America's most promising deposits of potash-bearing minerals. In the greensand deposits of New Jersey alone it is estimated by the Geological Survey that the mineral here available by open-pit mining methods alone would supply 257,000,000 tons of potash, which at present rates of importation from the European market would supply the United States for nearly 1,000 years. If consideration were given the additional quantities obtainable by underground mining and available in other States, these figures would be enormously increased.

Processes for the extraction of potash from greensand developed in the Bureau of Soils make possible its recovery on a commercial basis, together with a list of side products including iron oxide, ochers, alum, alumina (the raw material for the manufacture of metallic aluminum), and "glaucosil," a form of silica of many unique and valuable properties. This process is now under active exploitation by a company at Odessa, Del., and is being investigated by chemists and engineers generally with a view to large-scale production of potash from greensand. Research work is still in progress on this problem designed to improve certain steps in the process and the purity of the products obtained.

Investigations in the laboratories at Arlington Experiment Farm on the home-mixing of fertilizers have shown that, using the materials employed commonly by the trade, it is not only feasible but under many conditions advantageous to the farmer to mix his own fertilizers. Of special interest is the work showing that home-mixed goods are as uniformly mixed as factory-mixed goods. This is a question long in dispute.

The most concentrated materials suited for use in fertilizers are ammonium phosphate, potassium phosphate, and potassium nitrate. These three materials represent all the possible combinations of the three essential constituents of fertilizers. Complete fertilizers may be made by combinations of any two or all three of

these materials, and certain of these mixtures are the most concentrated that it is possible to make.

Processes for the manufacture of these materials have recently been developed in investigations being conducted in the Bureau of Soils laboratory at Arlington Experiment Farm. A process which gives the two first-mentioned materials simultaneously has been tested on a semicommercial scale and shown to be entirely practicable. A new process also has been developed for the preparation of potassium nitrate, the third of the concentrated materials mentioned. This process gives a product, which, unlike those now recovered in the arc process of nitrogen fixation, is not strongly hygroscopic. The process has not yet been tested on a commercial scale, but the simplicity of the procedure and the relative superiority of the recovered product over those now obtained in the synthetic preparation of nitrates make the process a promising one for commercial application.

Predatory-Animal Control

Good progress has been made in the cooperative campaign of the department in the Western States for the reduction of losses, mainly on the public domain, from such destructive predatory animals as timber wolves, coyotes, and mountain lions. Since this campaign began in 1915 more than 5,830 wolves, hundreds of thousands of coyotes, and more than 1,460 mountain lions have been destroyed. In some States where timber wolves existed by hundreds and were excessively destructive their numbers have been brought down to less than a dozen. During this year the cooperating States contributed $394,374, with the active participation in the field of great numbers of stockmen. The department expended $270,967.

Several outbreaks of rabies among predatory animals on the ranges in different States were suppressed by prompt and intensive campaigns against them, and similar action prevented the possible spread of foot-and-mouth disease by these carriers. The success of the cooperation of the Biological Survey with the Bureau of Animal Industry and the State of California in suppressing a serious outbreak of foot-and-mouth disease among deer has saved that State, and possibly the country, from a grave danger.

Losses in cultivated crops, orchards, vineyards, and forage from a variety of injurious rodents, as prairie dogs, ground squirrels of many species, jack rabbits, and pocket gophers, aggregate many millions of dollars each year. In addition, these pests undermine roads, irrigation-ditch banks, and railway embankments. So heavy are the losses from this source that the department receives vigorous cooperation from the 18 States in which organized campaigns against rodents are being conducted.

During the year the States provided $447,041 and the active field assistance of many thousands of farmers and other landowners, as against the expenditure of $158,675 by the department. The eradication of most of the prairie dogs and ground squirrels was accomplished on more than 11,500,000 acres, and in addition the second treatment by poison or fumigation for the destruction of these pests covered more than 7,700,000 acres.

Under the authority conferred by the new Alaska game law, passed at the last session of Congress, the Secretary of Agriculture

appointed a game commisison which will cooperate with the department in enforcing its provisions for the conservation of the valuable resources of game and fur in the Territory. During the year more than $2,000,000 worth of furs was procured in Alaska, and probably half that value of game. These resources under proper guardianship can unquestionably be increased.

The members of the new game commission, one from each of the four judicial divisions of the Territory, and the fifth, the chief representative of the Biological Survey in Alaska, met in April and May and recommended for promulgation by the Secretary an admirable set of regulations governing the conservation of wild bird and mammal life. The keen interest of the members of the Alaska Game Commission in the future of the wild life of the Territory and the good will shown by Alaskans in accepting the new law, indicate an excellent opportunity for building up and perpetuating one of Alaska's most valuable natural resources.

Federal Protection of Migratory Birds

Migratory birds, both as destroyers of injurious insects and as game, are actually worth many millions of dollars annually to the country. In enforcing the terms of the migratory-bird treaty act the department has succeeded in vastly increasing the number of game birds and many of the insectivorous species.

A very definite and growing menace to the future of our supply of migratory wild fowl lies in the rapid and indiscriminate drainage of water areas throughout the country. Such drainage operations are generally with the avowed object of increasing available agricultural lands. In many instances, however, the result has been the destruction of valuable water areas, leaving worthless lands exposed, a great acreage of which continues to lie in an unproductive condition. The adverse conditions affecting wild life through the increase of population call for an increasing effort to conserve our wild-life resources.

The Banding of Migratory Birds

Under supervision of the department numbered aluminum bands are placed on the legs of migratory wild fowl in order to learn the movements of these individuals from one part of the continent to another for the purpose of ascertaining their routes of migration and to gain other information necessary in the administration of the migratory-bird treaty act. A striking illustration of the practical value of banding operations is afforded by the results obtained during the summer of 1924 on the breeding grounds of wild geese near the delta of the Yukon in Alaska. During the succeeding autumn a considerable number of these banded birds were killed in the extensive area from the Queen Charlotte Islands on the coast of British Columbia to Washington, Oregon, and California, where in restricted areas these geese and certain ducks banded on the breeding grounds with them evidently have their winter homes. The operations furnish an example of how bird banding affords data on which protective measures for a species can be scientifically based.

VIII. The Department of Agriculture: The National Forests

Grazing Leases

During the last year the viewpoint has been expressed by representatives of the range-livestock industry that the status of grazing as a permanent and desirable use of the national forests should be defined by legislation and not left, as at present, to the exclusive control of the Department of Agriculture through administrative regulations. Thirty-one thousand livestock owners range approximately 1,800,000 cattle and 6,500,000 sheep in the national forests for varying portions of the year. These represent about 20 per cent of the cattle and 28 per cent of the sheep in the 11 Western States, and with their dependent ranch investments constitute an important part of the economic structure which the national forests should sustain. No provision for grazing in the national forests has been made by Congress and the use of their ranges has been developed entirely under regulations of the Secretary of Agriculture. Although having the force of law, these may be modified or revoked in the discretion of the department. Hence many stockmen desire legislation that will fix the status of grazing with reasonable definiteness, as the production and utilization of timber are now safeguarded and authorized by acts of Congress.

The desires of other grazing permittees in the national forests go much further. They ask for some form of permanent or vested property right acquired by past use of the range in connection with local ranches dependent upon pasturage in the national forests for their economic utility. This viewpoint is the outgrowth of a sense of proprietorship in the national-forest ranges by virtue of pioneer settlement. It seeks to place public ranges in the same legal relationship to the property of the livestock producer as a water right acquired under the usual terms of State law or an easement secured through a long tenure of use. Carried to its logical conclusion, this conception of vested rights would exclude from national-forest range any new user, settler, or livestock producer of the future, except as the grazing preferences of present users might lapse or be acquired through purchase. It would in effect close the national forests to the use of range in connection with the development of new agricultural land or the normal expansion of small livestock enterprises, except as old users might choose to sell their rights to the newcomer.

The stockmen recognize that grazing in the national forests should not be permitted to injure other resources, such as the regrowth of forests, water sources, or the perpetuation of valuable wild life. They also recognize the need for preserving the forage itself from injury through overgrazing or unwise methods of grazing. But in seeking to base the use of the range upon a legal right, they desire to set aside direct administrative control by officers of the department, for protecting the range and other resources, and to substitute for it a judicial determination of the responsibilities of the range user with resort to the Federal courts in all cases of dispute. The most extreme viewpoint of the relationship desired by stockmen toward

the general conservation program of the national forests is that the range user should be responsible to the courts only for such *willful* damage as may be charged against him.

The sense of a moral right acquired through long usage in connection with dependent ranches underlies the attitude of many range men regarding the fees which should be charged for grazing in the national forests. It is argued that long use of the range in connection with the early settlement of agricultural lands has resulted in capitalizing the value of the public pasturage as part of the value of the ranch; and hence for the Government to charge the present commercial value of the forage is in effect to confiscate property values previously acquired by the pioneer. Many stockmen thus maintain that the Government should charge no more for grazing than the cost of administering this use of the national forests and of improving them for the benefit of livestock production. To charge more than a nominal rate based on these principles is vigorously combated as a policy of commercializing public resources not consistent with the equities acquired by the old range users. At the Salt Lake meeting of representative sheep and cattle growers, held in August, 1925, a resolution was adopted to the effect that no charge for grazing on national forests should be made which will depreciate the value of the ranches owned and used by the permittees. Many other stockmen offer no objection to a reasonable fee for grazing, but oppose a fee based on the rentals paid for comparable private range lands.

The Department's Grazing Policy

Although Congress has never enacted legislation dealing with grazing in the national forests, the department has always recognized forage as one of their important resources. Under its general authority "to regulate the occupancy and use of the national forests," a complete scheme of grazing administration has been built up by administrative regulation. The first object of its policy has been to provide for the fullest and most permanent use of the ninety-odd million acres of forage-bearing land in the national forests that is consistent with the preservation of the forage itself and with the protection of the timber, water, and other resources that must be safeguarded. Reductions in the number of livestock pastured and other adjustments of range use have been made from time to time to prevent overgrazing and to avoid injury to other resources. No other policy would have been consistent with the essential purposes for which the national forests were created; but this has not prevented a large and continuous use of the ranges with a minimum of disruption in the local livestock industry. The department has also sought to stabilize the contribution made by the national forests to the livestock industry of the Western States by a fair allocation of the grazing lands available between sheep and cattle and between individual permittees, and to build up the productivity of these mountain pastures through proper stocking and better methods of range management. It has pioneered in grazing research under open-range conditions and has sought to put into effect demonstrated betterments in the handling of the ranges as a

means of making them a more permanent and stable asset of the livestock industry.

The department has sought the fairest possible distribution of grazing privileges in which the old user has been protected as far as consistent with affording reasonable opportunity for the settler and small rancher to establish his home and develop his means of livelihood. The principle laid down by Secretary James Wilson in 1905, for the use of the range and other resources in the national forests, was that of the greatest good to the greatest number in the long run. It was felt that the settler who was engaged in developing from raw land a new farm unit contributing to the food supply and wealth of the Nation and who in this process needed the related use of national-forest grazing resources should be granted such use even though that necessitated a reduction in the privileges of the established occupants of the range. As a result of this policy the number of range users has increased since 1909 by nearly 25 per cent and the national-forest ranges now contribute to the maintenance of approximately 4,500,000 acres of cultivated land and 22,000,000 acres of grazing land in private ownership.

This policy has, of course, necessitated some reductions in the size of the herds grazed by old users in various localities; but that has been felt to be in line with the economic progress of the Western States. At the same time a system of preferences in the use of the national-forest ranges has been put into effect so that the established users of the range would be protected from arbitrary or drastic reductions and the whole industry given the greatest possible stability in its relationship to the national forests. In fact, the use of the national-forest ranges during the last 15 years has been more stable than the tenure of any other range areas in the West with the exception of a few of the very large private ranches.

It has been possible largely to accommodate the new settlers by taking up slack range voluntarily surrendered by old users, so that the extent of forced curtailments of former grazing privileges has, in the aggregate, been very small. For example, the intermountain district, comprising Utah, Nevada, and parts of Idaho and Wyoming, represents the region of most intensive demand for public range. This district supports about 40 per cent of all the cattle and horse permittees in the national forests, and 44 per cent of the sheep and goat permittees. It pastures 25 per cent of all the cattle and horses in the national forests and 43 per cent of all the sheep and goats. During the past 10 years the policy of range distribution followed by the department for the benefit of the new settler and small owner resulted in a reduction of 4 per cent of the cattle and 2.9 per cent of the sheep and goats grazed by the large operators.

Stability in Use of Ranges

The possibility of affording greater stability in the use of national-forest ranges has been given much study by the Forest Service. It is fully recognized that there are limits beyond which the curtailment of the established sheep and cattle outfits should not go, and that from the standpoint of the permanent welfare of the industry reasonable safeguards must be placed around the established and fully

developed livestock ranch. In cooperation with the permittees, this study led to the issuance of grazing permits for periods of 10 years, beginning with the season of 1925. These permits assure the holder that during the decade his use of the range will not be curtailed for any reason other than to protect forest resources against serious injury, with the exception that at the end of the first five years his herd may be reduced not more than one-tenth if necessary to provide room for new applicants qualified for a place in the national forests.

In many localities the settlement and development of agricultural land have progressed to the point where further subdivision of the range is unnecessary and, indeed, likely to be uneconomic. In these localities future use of the range can largely be stabilized in its present occupants. At other points, however, new agricultural developments will create a demand for range privileges from settlers who should be accorded the same opportunity to establish their homes as their predecessors have had in the past.

In 1906 the Department of Agriculture began charging fees for grazing in the national forests under a regulation of the Secretary which indicated that the rates would be advanced from time to time as the value of the range and the demand for it might warrant. The present fees, which were based roughly upon range values prevailing in the Western States in 1916, average approximately 12 cents per month for a cow and 3 cents per month for a sheep. Following a commitment made in 1920, when the charging of higher fees was seriously advocated in Congress, a detailed survey of the thousands of grazing allotments in the national forests was made by the Forest Service with a view to determining their physical characteristics as a means of arriving at the fair compensation which should be paid by the range user. An exhaustive study was also made of the rental value of private range lands in the Western States comparable to those in the national forests as fixed by leases holding over a long period of years. The results of this survey, which was completed in 1924, indicate that while the grazing fees paid on some of the national forests have been equal to or in excess of the actual value of the forage, on the ranges as a whole the present fees are less than the well-established value of similar private lands by at least 75 per cent. The free discussion of these figures among the grazing permittees and livestock associations of the West has led to a general protest from the industry against increasing the grazing fees and against a policy of "commercializing" the national-forest ranges.

Except where existing fees were found too high, the range appraisal report has not been approved by the Secretary of Agriculture. At the time of its completion the livestock industry was undergoing a severe depression, during which it was patent that no increased charges should be placed upon the producers who use the national forests. The reductions below existing fees shown to be required in equity to the permittees were made effective in 1925, involving a total decrease in annual grazing receipts of $46,600. Otherwise all changes in grazing fees have been deferred until not earlier than 1927 in order to afford a further opportunity for the recovery of the livestock industry and also to permit a further check and review of the charges indicated by the appraisal. To

insure the careful consideration of this question from every angle I have designated as my personal representative Dan B. Casement, an expert of life-long experience in every phase of the livestock industry, to make an independent study of the whole subject.

Grazing Legislation Desirable

The department believes that the production of livestock has a permanent and valuable place in the national forests, and that every reasonable form of security should be given the livestock producer in making the most advantageous use of this public resource. Legislation establishing a permanent place for grazing in the national forests would be desirable, in order that this important economic service may be freed from even the remote danger of sudden or drastic change in the more essential policies concerning the use of the range. It is my judgment, however, that any program for stabilizing grazing as a permanent feature of the national forests must square with the general interests of the public on certain points which are vital to the whole conception and plan of conserving natural resources.

In the first place, the use of the range must be subject to such control and adjustment as may be necessary to conserve and protect all of the resources in the national forests, including the forage itself, and this protection must be afforded through the direct supervision of the agencies responsible for the administration of the national forests as a whole. In the second place, although the stabilization of range use should be a primary feature of the policy, reasonable leeway must be retained for meeting the requirements of new settlement or land development where called for by the principle of the greatest public benefit. And in the third place, I believe that the use of the forage must rest upon a clean business basis of dealing with the public, with fair compensation for the value of the resource utilized, reasonably adjusted to current economic conditions in the livestock industry.

Vested property rights in national-forest range can not be harmonized with these requirements. It is possible, however, to further stabilize the grazing industry on the national forests by a program of legislation and administrative action which will provide for the permanent production and utilization of forage in the national forests as one of their major resources, with the licensing of livestock grazing on such areas in such numbers and under such systems of herding or management as in the judgment of the responsible administrative agencies will not injuriously affect the continuous production of forage, the regrowth of timber, the protection of watersheds, or other resources or lawful uses of national forest lands.

I favor a provision of law that will authorize firm contracts or licenses for periods of 10 years, to be binding upon the Government as long as their conditions are met, and under which the requirements to be observed by the range users, possible reductions in the numbers of livestock, and the provision for grazing fees shall be specifically set forth. Legislation of this nature will place the use of the national-forest ranges on the same footing of legal recognition and specific contract relations which now exists in the utilization of timber.

Other desirable features of stability in livestock production can be largely, if not wholly, provided by the department itself. The department favors the encouragement of individual grazing allotments wherever practicable, extending the policy already effective on many national forests, so that in connection with permits or contracts for 10-year periods the user of the range will have every inducement to improve his allotment and will reap the benefit of the betterments secured during the tenure of his permit. Where local economic conditions and the circumstances of land development warrant, the department favors restricting the further distribution of grazing privileges for the ensuing 10 years in order that greater stability may be secured by the established livestock producers and the desirable economic relationship between ranges and agricultural lands already developed may not be impaired. Elsewhere where land settlement or new development may require a further distribution of grazing privileges for the benefit of new users, this should be made within such equitable limits as will not cause undue hardship or necessitate an unwarranted readjustment of range operations by the established permittees.

It must be borne in mind that there can be no real stability of livestock production where overgrazing is causing a progressive decline in the carrying capacity of the range. A reasonable regulation of the grazing use, designed to bring about better methods of range and livestock management, has steadily strengthened the industry of the West and will continue to strengthen it. Such regulation must be continued. In the past it has had the support of a large proportion of the local livestock producers affected. The department believes in developing this phase of grazing administration more completely along the lines of local self-government by the livestock permittees directly concerned. To that end, a system of local boards, functioning for the national forests or the State, is believed desirable. Ordinary matters of local grazing management and range administration may thus be settled by the stockmen themselves in cooperation with local officers of the Forest Service. The numerous questions involved in the local adjustment of grazing are not susceptible of judicial determination. They should be dealt with on the ground in a cooperative spirit by practical range users and experienced grazing officers of the Forest Service. And in order that responsibility for the administration of the national forests and the conservation of their varied resources may not be devided, or antagonistic policies put into effect in different sections, it is believed imperative that a final determination, on appeal or otherwise, of all questions of a distinctly administrative nature, should rest with the head of the department. At the same time every user of the national forests should have ready access to the Federal courts for the determination of his rights under the law or of disputes arising in his contractual relations with the Government.

A program of greater stability for the livestock producers who use the national forests can readily be developed along these lines without imperiling the purposes and functions of the national forests. The essential point is that while the use of the ranges should be given a permanent and definite status and stabilized as far as pos-

sible, this use of the national forests must be fitted into and harmonized with the entire plan for the conservation of public resources.

During the past year 2,145,029 acres were covered by intensive range reconnaissance, making a total of 20,572,203 acres covered to date. This work involves a very careful survey of our grazing resources and provides the basic data necessary to the establishment of scientific methods of range management. There still remains to be covered nearly four-fifths of the total area of range lands before the work will be complete. It is, however, through work of this character that real stability of range use, based on realization of the highest productivity that the resource permits, will ultimately be attained.

Reforestation

Reforestation has come to signify in popular acceptance whatever looks toward the establishment of a new timber crop, whether by natural reproduction from the old stand or by tree planting, and whether the new crop succeeds the harvested one or restores tree growth on deforested and idle land. In this broad sense reforestation has made great progress during the past year.

Timber growing on the vast area—about one-fourth of the total land surface of the United States—better adapted to this than to any other form of use, is bound to come in time through the slow working out of purely economic forces. Its nation-wide adoption in place of timber mining, however, is still remote, and many obstacles lie in the path. The public must take a hand in hastening reforestation, or suffer during an unnecessarily protracted transition period. In face of the evils of increasing timber shortage and declining productiveness of forest lands it is urgently important to press the work forward.

It can safely be said that never before has the forest problem of the country been so much to the fore in the public mind. Further, there is increasing disposition to act on it; and there is an increasingly intelligent conception of what it really is. Nevertheless, the public does not yet see clearly and fully what ought to be done. It is largely groping in the dark.

There is need for leadership; there is need for much more in the way of public education, to the end that what is done may be intelligently done; there is need for creating a far greater body of knowledge than is now in existence, both to guide public policy and to shape private practice; and there is need not only to develop this knowledge but also to diffuse it in effective and manifold ways, so that it may actually reach and be used by those who will profit by it. All these needs are being met by the Forest Service to the extent of its resources, yet inadequately in comparison with what should be done.

In the forest industries there is taking place a very marked change of attitude toward reforestation. It is of real significance, but its interpretation must not be too hastily made. Powerful economic forces are beginning to create a distinct trend toward a new basis organization of these industries; yet many conflicting forces are at

work, and it would be a serious mistake to assume that a radical transformation is about to take place. Nevertheless, the process of conversion is under way.

The lumber industry, the naval-stores industry, and the pulp and paper industry are outstanding examples. In all of them serious thought is being given to timber growing as the source of raw material. Individual companies in considerable numbers are actually making investments with this end in view. Some are definitely embarked on enterprises that contemplate permanency based on sustained timber yields from their own lands under forest management. On the Pacific coast, in the southern pineries, and, most of all, in the Northeast, forestry has unquestionably gained a substantial foothold.

It is essential that this movement toward the practice of forestry on the part of landowners and industries be facilitated in every possible way. One way is through obtaining and communicating to them better knowledge of the methods that they should employ, of the returns that can be realized through use of these methods, and of the relative costs of improved and current practices. Another way is through public cooperation in the form of organized fire protection and tax reform, both of which necessitate State action. The Federal Government is now in position, through the provisions of the Clarke-McNary law, to extend help to those States which wish to receive this help. The largest immediate need in forestry is for State movements based on a clear conception of the forest situation and requirements in each State, to bring about the adoption of forest policies that will accelerate the trend now unquestionably perceptible toward timber growing as a voluntary private enterprise. Here again there is opportunity for the Forest Service to contribute much of value in leadership and knowledge obtained through research.

Better Utilization of Timber

The traditional methods used in harvesting timber and working it into useful articles cause enormous losses of wood—partly inevitable, partly avoidable—at every stage from forest to consumer. The quantity of wood so lost is in fact greater than the quantity used. As a reduction of these losses would relieve the heavy drain on our forests, it is obvious that economy in wood utilization is an important phase of conservation and should have in the forestry movement a place equal to timber growing. We need not only to grow timber but to learn to use wisely what we now have and what we shall grow in the future.

Recognizing that the public and the forest industries have an equal interest in reducing waste, the late Secretary Wallace called a national conference on the utilization of forest products, which met in Washington in November, 1924. At this conference over 400 representatives of the timber-producing and timber-consuming industries, together wth foresters and engineers, formulated a program of attack on timber waste, pricipally through an organized and voluntary effort by industry aided by the Government to improve the methods of manufacturing, marketing, and using forest products.

As recommended by this conference, a national committee on wood utilization has been formed under the leadership of the Department of Commerce with the support and participation of the Forest Service. This committee, acting as a coordinating and steering body to various timber-producing and consuming associations, will closely parallel in organization and methods the central committee on lumber standards, which is dealing so successfully with the intricate problem of standardizing lumber grades and specifications. The committee on wood utilization will seek to deal with like problems that offer an opportunity to make conspicuous reductions in waste. This movement, promising as it does to prolong our timber supply and give greater security to the public and to the industries dependent on that supply, is a striking example of a great industrial reform undertaken through intelligently directed effort by the business group immediately concerned.

Forest Road and Trail Building

During the past fiscal year 1,800 miles of roads and 4,085 miles of trails within and adjacent to the national forests were constructed at a total cost of $12,834,738 Federal funds and $2,291,325 cooperative State and county funds. The first appropriation for the construction by this department of national-forest roads and trails was made by the act of August 10, 1912, under which 10 per cent of the national-forest receipts was made available for this purpose. The total that has been appropriated, under various acts, expressly for the same purpose, has been $50,591,149. Of this amount $44,179,226 has been expended in cooperation with $12,740,135 appropriated by States and counties. The expenditures made to the close of the fiscal year 1925 have resulted in the construction of 10,022 miles of forest roads and 21,497 miles of forest trails and the maintenance of 13,978 miles of forest roads and 38,858 miles of forest trails.

The roads constructed from these forest road appropriations are two kinds, expressly defined by Congress in section 23 of the Federal highway act of November 9, 1921: those required for the administration, protection, and development of the national forests, called forest development roads, and those required to complete the State and county systems when they traverse or adjoin the national forests, called forest highways. The law expressly stipulates the method by which these two funds are to be apportioned to the States containing national forests. The forest development fund is apportioned according to the relative needs of the forests, taking into consideration existing transportation facilities, value of timber and other resources to be served, relative fire danger, and comparative difficulties of road and trail construction. The forest highway fund must be apportioned according to the area and value of the national-forest lands.

IX. The Department of Agriculture: Federal-Aid Roads

A greater mileage of Federal-aid roads was completed during the fiscal year 1925 than in any previous year. The aggregate length

of the projects completed was 11,329 miles, and the largest previous year's record was less than 10,000 miles. This addition brings the mileage completed since 1917 up to a total of 46,486.

In addition to this completed mileage, which includes only the projects that are entirely completed, there were under construction at the close of the fiscal year other projects the aggregate length of which was 12,463 miles. A very considerable portion of this mileage is actually completed, but will not be so reported until the projects in which it is included are completed in their entirety.

The total cost of the projects completed during the year was approximately $243,000,000, of which approximately $111,000,000, or more than 45 per cent, was paid by the Federal Government. The cost of the entire mileage completed from 1917 to date has been more than $845,000,000, and the Federal Government has paid of this total approximately $373,000,000.

This total Federal expenditure over the nine-year period has been large enough to make the Federal participation effective without necessitating extravagant expenditures of State funds to meet it. As the Federal excise taxes on motor vehicles, tires, and motor-vehicle accessories have produced since 1918 Federal revenues amounting to $800,000,000, it may be seen that the Federal-aid highway expenditures have been far more than paid by owners of motor-vehicles. The same motor-vehicle owners contributed to the State treasuries in license fees and gasoline taxes during the last fiscal year more than sufficient funds to pay the States' share of the cost of the Federal-aid roads in all States with the exception of New Mexico.

In the roads completed during the year all approved types of construction are represented. Gravel roads, of which there were 4,203 miles, constitute the largest single class. The completed mileage of all types was as follows:

	Miles completed
Graded and drained earth roads	2,064
Sand-clay roads	719
Gravel roads	4,203
Water-bound macadam roads	129
Bituminous macadam roads	912
Bituminous concrete roads	341
Portland cement concrete roads	2,807
Brick roads	107
Bridges (over 20 feet in span)	47
Total	11,329

One of the most important projects recently completed is the Wendover cut-off across the Great Salt Lake Desert between Salt Lake City and the Nevada line. The completion of this road brings to a successful conclusion a five-year effort to bridge the obstacle to transcontinental travel which has always been presented by the salt desert. Its construction could not have been undertaken but for the financial assistance offered by the Federal Government; and the flow of interstate travel which has already begun between Salt Lake City and northern and central California is one of the outstanding evidences of the necessity for Federal participation with the States in interstate highway construction.

Road-Marking System

As an outgrowth of the designation and improvement of the Federal-aid highway system and the several State highway systems, and in recognition of the rapidly increasing interstate highway traffic, the joint board on interstate highways has designated a system of main interstate and transcontinental highways and has devised uniform danger and direction signs for the marking of the designated highways in all States.

The various routes will be indicated by numbers, and the numbering will be continuous on each route in all States through which it passes. The roads included in this system are parts of the Federal-aid highway system. Their improvement is thus assured at an early date; and their uniform marking in accordance with the standards established by the joint board will add greatly to their value and service as interstate and transcontinental arteries. The board was appointed in February, 1925, by Secretary Gore at the suggestion of the American Association of State Highway Officials. Its membership includes State highway officials and representatives of the Bureau of Public Roads.

The highway traffic surveys conducted by the Bureau of Public Roads in cooperation with officials of the States of Connecticut, Maine, Pennsylvania, Ohio, California, and Cook County, Ill., have already produced information of great importance as a basis for the scientific planning of highway improvements and the control of traffic.

Demand for Highway Service

The demand for highway service varies greatly on different roads. Recognizing this condition, it is the purpose of the traffic surveys to reveal the relative density and weight of traffic on all highways of the State or county system as an index of the degree of improvement required and justified by the traffic and as a guide to the equitable allocation of available revenues. These are fundamental decisions which must be made by every State highway department and all other authorities in control of the highways, and they are decisions which can be rationally made only on the basis of the relative traffic demands. In these respects the surveys thus far undertaken have had results of the highest practical value.

Of the 681 miles of major national-forest roads completed during the last fiscal year, 635 miles were in the States of the far West and the Territory of Alaska. Although the work of forest-road construction is overshadowed in the eyes of the public generally by the more extensive Federal-aid work, its importance is fully realized by the people of the West, and in the great territory west of the one hundred and third meridian it is in fact no less important than the bigger work. Occupying the crests of the mountain ranges the forests control all the more important highway passes. They practically surround and control access to the national parks; and they interpose between sections of all the Western States virtually continuous bands of national land, in which the highways, if they are to be improved at all, must be improved by the Federal Government. The improvement of the major forest roads is, therefore,

not only of vital concern to the States in which they are located but is of importance to the Nation as a whole, since it is essential for the accommodation of interstate and transcontinental traffic.

X. The Department of Agriculture: Insular Experiment Stations

The department maintains agricultural experiment stations in Alaska, Hawaii, Porto Rico, Guam, and the Virgin Islands. In Alaska it is seeking to develop a type of agriculture for that region that will supplement the development of other industries. In Hawaii and Porto Rico it is trying to diversify the agriculture of those territories, at present centered very largely on cane-sugar production. In Guam an effort is being made to improve agricultural practices and to restore agriculture to its former important position. In the Virgin Islands the problem has been to show how diversified agriculture may improve the disturbed economic conditions of those islands and furnish employment for many who formerly were engaged in other industries that are now in need of fewer laborers.

In Alaska homesteads are being acquired and former prospectors, miners, and fishermen are turning to agricultural pursuits to supply local demands for products. The stations through their plant-breeding work have developed varieties of wheat, barley, and oats than can be depended upon to mature in average seasons in the interior of the Territory. Hybrid strawberries have been produced that are hardy in most parts of the country and they are being extensively grown for home consumption and for market. New varieties of potatoes have been developed that surpass in yield and quality any of the varieties grown in Alaska that are standard elsewhere.

Considerable attention has been given to livestock, and Galloway cattle have been found adapted to the rigorous winter climate of southwestern Alaska. In order to obtain higher milk yields and still retain the vigor of the beef type reciprocal crosses have been made between the Galloway and Holstein breeds, and some of the second-generation animals are now in milk. Their production is intermediate between that of the best Holsteins and the best Galloways of the herd, and the average percentage of butterfat in their milk is considerably higher than that of the Holstein cows. The crossbred animals stay with the Galloways during stormy weather, while the Holsteins seek shelter. For the interior of Alaska the Fairbanks station is trying to develop a beef animal that will withstand the winter's cold without undue sheltering and feeding, and it now has three calves resulting from crossing the Asiatic yak with Galloway cows. Crosses between yak and domesticated cattle are common in Mongolia, and it is believed they will prove of value in the interior of Alaska.

Progress in Hawaii

The Hawaii station, from its establishment, has worked for the diversification of agriculture in those islands and the development of new industries. That it has been successful to a gratifying degree is shown in the changed practices and larger production of a number of

commodities. Through the station's efforts the methods of rice growing have been changed, and now the oriental growers fertilize their crop with ammonium sulphate instead of with nitrate of soda, and the cost of production is lowered and the yield increased. Soon after the establishment of the experiment station attention was given to a diseased condition of pineapples that was threatening that crop. The trouble was found to be due to large quantities of manganese in the soil, making iron unavailable to the pineapple plant. By the simple expedient of spraying the plants three or four times a year with a solution of iron sulphate perfect crop production is assured, and more than 10,000 acres of land that had been abandoned has been planted to pineapples again, and this crop has become second in importance to sugar production, the export of canned pineapples in 1924 amounting to about $28,000,000.

Attention was given quite early to the improvement of stock ranges, and many valuable forage plants were introduced and established. One of the outstanding achievements was the introduction of the pigeon pea, which was obtained from the Porto Rico experiment station. This has proved such a valuable acquisition for feeding and fattening all kinds of stock that more than 10,000 acres have been planted for those purposes. It has been found also to be an excellent crop to rotate with pineapples, improving the soil very greatly.

The station is engaged at present in developing a starch industry from the edible canna. This plant grows readily on lands not adapted to sugar cane or pineapples and in no way competes with them. Some technical details of manufacturing remain to be worked out, but one factory has already begun the commercial production of the starch.

When the mosaic disease of sugar cane appeared to threaten the destruction of the sugar industry of Porto Rico, the experiment station found among its varieties the Uba or Japanese cane, that was but little affected by the disease. Through the Bureau of Plant Industry of the department additional supplies of this variety were obtained and disseminated to the worst-affected districts, and it is now being extensively grown. This variety has some undesirable qualities, and through plant-breeding experiments other resistant varieties are being obtained that will soon replace it. A testimonial signed by 30 planters was recently presented the station in acknowledgment of their gratitude to it.

Tick Eradication in Porto Rico

The first dipping tank for use in the eradication of the cattle tick in Porto Rico was constructed at the station, and as a result of its successful use there are now about 200 public and private vats on the island, and the time is believed to be soon at hand when the island will be free of this menace to the cattle industry. Following the clearing of the station grounds of ticks, dairying was taken up, and through the introduction of purebred sires a valuable high-grade herd has been developed that is serving as an example to many ranchers and milk is becoming more available for the diet, especially of children.

The station has given much attention to the introduction of improved varieties of agricultural and horticultural crops, and many

of its introductions have become important factors in the life of the people.

When the Guam experiment station was established agricultural production had fallen to a low state and the problem was to restore it and develop it along modern lines. Agricultural practices were very primitive and the livestock of the island had degenerated through inbreeding until all kinds were in a deplorable condition. Immediate attention was given to the improvement of livestock through the introduction of purebred animals, and remarkable results have been obtained, especially with swine and poultry. This was accomplished very largely through the organization of boys' and girls' clubs, and high-grade pigs and chickens, as well as many purebred ones, are now to be found throughout the island. Connected with livestock work was the introduction of forage and pasture plants, and a number have been established to take the place of inferior native plants.

Copra is the only export of importance and it is the main money crop of the island. The station has greatly improved the quality produced and a higher price is now obtained for all that is produced. Unfortunately the coconut scale (*Aspidiotus destructor*) has made its appearance on the island, having been found in destructive abundance in December, 1923. This scale has practically destroyed all the coconut plantations on Saipan, an island 120 miles north of Guam. Energetic measures were undertaken under the direction of the station, and much good was accomplished in checking its ravages. Under special appropriations from Congress a campaign for the control of the scale was begun late in the last fiscal year. In addition to the coconut the scale in Guam also infects many other important economic plants.

Food Crops in Virgin Islands

The Virgin Islands experiment station, which is located on the island of St. Croix, was obtained through the cession of those islands by Denmark in 1916. Economic changes have been so great in the Virgin Islands that agriculture is about the only important industry that is left. The experiment station is endeavoring to improve agriculture in all its phases, but it is paying particular attention to the growing of food crops to supply local needs as well as to provide employment to persons who were deprived of their usual occupations by changed conditions. Attention is being given to livestock problems as cattle raising is second only to sugar production.

Porto Rico offers a good market for cattle, and investigations have been begun in breeding up and feeding the native stock. New forage plants have been successfully established and they are being distributed rapidly. Vegetable growing has received quite an impetus, and local supplies are more numerous than formerly. A very successful experiment in growing Bermuda onions for local use as well as for shipment to New York has just been concluded, and as an outcome of the experiment a Bermuda onion growers' association has been formed.

One of the outstanding achievements of the station is its variety of sugar cane known as SC 12/4. This variety, originated several

years ago as a seedling, has proved valuable for conditions resembling those of St. Croix where cane is grown without irrigation. It has been given extensive trial in the Virgin Islands, Porto Rico, and Cuba, and is highly commended not only on account of its high tonnage of cane, but also of the outturn of sugar and the comparative freedom from injury by the mosaic disease.

XI. The Department of Agriculture: Publications and Press Work

The informational work of the department was consolidated under one head on May 1, 1925. The Office of Information, which was reestablished at that time, includes all publication, press service, and radio work, either within itself or under the supervision of the director. During the past year the department issued a total of 5,374,000 copies of new publications exclusive of periodicals, of which 2,314,000 were Farmers' Bulletins. In addition, nearly 15,000,000 copies of various publications were reprinted, about 9,500,000 of them being Farmers' Bulletins for popular distribution. Economies in printing have helped in a measure to meet the demand for publications with a smaller appropriation. In an effort to prevent waste distribution, the practice of sending publications to large mailing lists has been stopped and instead inexpensive announcement cards, calling attention to the new publications, are sent out. It is estimated that this method has saved many thousands of publications and has resulted in getting bulletins only to those persons most interested in them.

Releases of mimeographed stories for the press during the year numbered 1,062. In addition, there were 103 issues of mimeographed material for the use of radio broadcasting stations and 52 issues of a printed weekly Clip Sheet for the use of newspapers. The Office of Information has improved its contacts with newspapers, press associations, and the farm and trade press through various means. A study of the several hundred publications of various kinds indicates a large increase in the use of department material by all classes of newspapers, magazines, and trade journals.

It appears to me that the press has been noticeably receptive to all information of a scientific and an economic nature. This tendency has been of the utmost value to the department in carrying on its work, which consists mainly in acquiring new facts which are of value only when they have been brought to the attention of persons who can apply them—on farms, in factories, and in the home.

Respectfully,

W. M. Jardine,
Secretary of Agriculture.

XII. FINANCIAL STATEMENT

EXPENDITURES, DEPARTMENT OF AGRICULTURE, FISCAL YEAR 1925

Expenditures for work under the supervision of the Department of Agriculture during the fiscal year which ended June 30, 1925, including road building, totaled $164,395,010.99, classified as follows:

Expended and obligated, fiscal year 1925

(1) For regular work of department (activities with whose execution the department is directly and independently responsible), as follows:			
Office of the Secretary			$894,996.70
Division of Accounts and Disbursements			72,582.62
Office of Publications			1,090,197.12
Office of Experiment Stations			333,491.50
Extension Service			1,576,467.91
Weather Bureau			2,291,652.77
Bureau of Animal Industry			[1] 11,839,854.88
Bureau of Dairying			508,544.71
Bureau of Plant Industry			3,719,037.47
Forest Service			9,503,015.13
Bureau of Chemistry			1,463,058.57
Bureau of Soils			382,875.15
Bureau of Entomology			2,174,680.15
Bureau of Biological Survey			913,327.10
Library			70,754.96
Bureau of Public Roads			464,154.62
Bureau of Agricultural Economics			4,777,126.73
Bureau of Home Economics			105,551.57
Insecticide and Fungicide Board			173,887.51
Federal Horticultural Board			707,092.31
Packers and Stockyards Administration			441,683.78
Grain Futures Administration			91,234.71
Fixed Nitrogen Research Laboratory			241,454.09
Farmers' Seed Grain Loans			71,891.99
Total expenditures for regular work			43,908,614.05
(2) For work administered by department, supported by Federal funds provided as direct aid to States or for special forestry conservation work and similar objects, as follows:			
(*a*) Special conservation items (Weeks law of Mar. 1, 1911)—			
Cooperation with States in fire protection of forested watersheds of navigable streams	$399,260.17		
Acquisition of lands for protection of forested watersheds of navigable streams	834,678.45		
		$1,233,938.62	
(*b*) Colleges and stations—			
Payments to State agricultural experiment stations for research work (Hatch and Adams Acts funds)	1,440,000.00		
Payments to State agricultural colleges for extension work in agriculture and home economics (Smith-Lever Act funds)	5,880,000.00		
		7,320,000.00	
(*c*) Road construction (Federal aid road act of July 11, 1916, as amended and supplemented)—			
Payments to State highway departments for cooperative construction of Federal-aid highway system	97,497,976.41		
Forest roads and trails	9,989,694.29		
		107,487,670.70	

[1] Including $2,730,845.96 paid to livestock owners as indemnities for animals destroyed in connection with tuberculosis and foot-and-mouth disease eradication.

(2) For work administered by department, etc.—Continued.			
(*d*) Forest Service receipt funds—			
Payments to States for benefit of local roads and schools	$1,346,352.09		
Roads and trails for States	518,689.30		
Cooperative work, consisting principally of forest road and trail construction (paid from contributions from private sources)	2,475,852.14		
Refunds to users of national-forest resources of moneys deposited by them in excess of amounts required to secure purchase price of timber, use of lands, etc	103,894.09		
		$4,444,787.62	
Total expenditures for work administered by department (other than regular work)			$120,486,396.94
Total expenditures for regular activities of and work administered by department			164,395,010.99

FEDERAL FUNDS FOR REGULAR WORK

As indicated by the foregoing table, the total expenditures for the regular or ordinary work of the department during the fiscal year 1925 amounted to $43,908,614.05. Partially offsetting this figure, earnings in connection with these activities during the year, amounting to $5,306,392.72, deposited in the Treasury of the United States to the credit of "miscellaneous receipts," and $198,372.98 received as fees for classifying cotton and credited to the revolving fund for that purpose, make the actual net cost to the Federal Government of the department's regular work $38,403,848.35.

Of the total expenditure of $43,900,000 for regular work, approximately (1) $10,100,000, or 23 per cent, was used for research, including investigations and experiments in animal and plant production, breeding and improvement, in methods of controlling diseases, insects, and other animal and plant pests, for soil studies, for the investigation of farm management, marketing, and crop utilization problems, and other scientific studies and investigations of the fundamental problems of agriculture, horticulture, forestry, etc., by means of laboratory and field experiments; (2) $2,400,000, or 5.5 per cent for extension work—that is, demonstration and educational work by means of county agricultural agents, through exhibits, motion pictures, or otherwise, with a view to the dissemination of the information developed by the experiments and discoveries of the department and the various States; (3) $8,600,000, or 19.6 per cent, for the direct eradication or control of plant and animal diseases, insects, and other pests; (4) $9,500,000, or 21.6 per cent, for the administration of regulatory laws, such as the food and drugs act, the meat inspection law, the migratory-bird treaty act, the grain standards act, the warehouse act, and other laws, some 30 or more in number, with the enforcement of which the Department of Agriculture is charged; and (5) $13,300,000, or 30.3 per cent, for service work, including such activities as the administration and protection of the national forests, the weather service, crop and livestock estimating, market news service, shipping point and terminal market inspection service on perishable farm products, and other work of like character for the benefit of the public, not primarily involving research or the enforcement of special laws of a regulatory nature.

FEDERAL FUNDS ADMINISTERED BY DEPARTMENT FOR ACTIVITIES OTHER THAN REGULAR WORK

As shown in the above table, of the total expenditure of $164,400,000 charged against the Department of Agriculture for the fiscal year 1925, approximately $120,500,000 constituted funds administered by the department but not used for the prosecution of its regular or ordinary activities. The larger part of this amount, or about $107,500,000, consisted of Federal aid to States for highway construction and for forest roads and trails; $7,300,000 was the Federal contribution to State agricultural colleges and experiment stations for research and extension work under the Hatch, Adams, and Smith-Lever Acts; $4,500,000 (consisting of receipts derived from business on the national forests and funds contributed by Forest Service cooperators) was used principally for local road and school purposes; and $1,200,000 was applied to special forest conservation work, under the Weeks law, including the purchase of additional forest lands and cooperation with States in the protection of State and private timberlands against fire.

INCOME TO GOVERNMENT IN CONNECTION WITH DEPARTMENT'S ACTIVITIES, FISCAL YEAR 1925

Incident to the department's work during the fiscal year 1925 direct receipts aggregating $9,214,322.72 were covered into the Treasury and fines were imposed and judgments recovered by the courts amounting to $176,804.45 in connection with the enforcement by the department of the regulatory laws which devolve upon it for administration and execution, as follows:

RECEIPTS

Deposited to credit of miscellaneous receipts fund—		
Regular work—		
From business on the national forests	$4,502,955.92	
From other sources	803,436.80	
		$5,306,392.72
Work administered (other than regular work)—		
Ten per cent of net receipts from business on the national forests, appropriated as a special fund for forest road and trail construction in 1926	497,181.57	
Contributions from private cooperators, appropriated as a special fund and used mainly for the construction of forest roads and trails	2,104,219.23	
Proceeds from sale of surplus war materials transferred to States for road-construction work	130,924.72	
		2,732,325.52
Total receipts deposited to credit of miscellaneous receipts fund		$8,038,718.24

Deposited to credit of applicable appropriations and funds of department:		
Fees collected for classifying cotton, deposited to credit of revolving fund for conducting this work	$198,372.98	
Reimbursement to various appropriations of department for expenditures made therefrom	977,231.50	
		$1,175,604.48
Total receipts		9,214,322.72

FINES

Fines imposed and judgments recovered by the courts in connection with violations of statutes intrusted to Department of Agriculture for enforcement	176,804.45
Total direct income to Government resulting from activities of the Department of Agriculture	9,391,127.17

Acreage of crops in the United States

Crop	Annual acreage, 1910–1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924 [1]	1925 [2]
CEREALS	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*
Corn	105,240	106,197	105,296	116,730	104,467	97,170	101,699	103,740	102,846	104,324	105,012	106,621
Wheat	48,953	60,469	52,316	45,089	59,181	75,694	61,143	63,696	62,317	59,659	54,209	53,994
Oats	38,014	40,996	41,527	43,553	44,349	40,359	42,491	45,495	40,790	40,981	42,452	44,467
Barley	7,593	7,148	7,757	8,933	9,740	6,720	7,600	7,414	7,317	7,835	7,086	8,826
Rye	2,305	3,129	3,213	4,317	6,391	6,307	4,409	4,528	6,672	5,171	4,173	4,184
Buckwheat	826	769	828	924	1,027	700	701	680	764	739	816	823
Rice	733	803	869	981	1,119	1,063	1,336	921	1,055	895	892	998
Grain sorghums	----	4,153	3,944	5,153	6,036	5,060	5,120	4,635	5,064	5,792	5,085	5,234
Total	203,664	223,664	215,750	225,680	232,310	233,073	224,499	231,109	226,825	225,396	219,725	225,147
VEGETABLES												
Potatoes	3,686	3,734	3,565	4,384	4,295	3,542	3,657	3,941	4,307	3,816	3,662	3,453
Sweet potatoes	611	731	774	919	940	941	992	1,066	1,117	993	938	1,014
Beans (commercial)	----	928	1,107	1,821	1,744	1,060	847	777	1,079	1,320	1,376	1,584
Onions (commercial)	----	----	----	64	65	53	65	57	63	62	60	57
Cabbage (commercial)	----	----	----	93	116	96	124	105	134	105	110	106
Total	4,297	5,393	5,446	7,281	7,160	5,692	5,685	5,946	6,700	6,296	6,146	6,214
MISCELLANEOUS												
Cranberries (3 States)	----	23	26	18	25	25	25	25	25	28	28	28
Flaxseed	2,402	1,387	1,474	1,984	1,910	1,503	1,757	1,108	1,113	2,014	3,289	3,093
Sugar beets	498	611	665	665	594	692	872	815	530	657	817	776
Tobacco	1,209	1,370	1,413	1,518	1,647	1,951	1,960	1,427	1,695	1,877	1,720	1,693
All hay	66,356	67,904	72,356	71,415	71,120	74,038	73,888	74,401	77,030	75,424	76,385	74,796
Cotton	35,350	31,412	34,985	33,841	36,008	33,566	35,878	30,509	33,036	37,123	41,360	[3] 46,448
Sorghum cane for sirup	----	----	----	415	422	487	536	518	447	380	404	397
Peanuts	----	----	1,043	1,842	1,865	1,132	1,181	1,214	1,005	896	986	909
Broomcorn	----	230	235	345	366	352	276	222	275	536	442	191
Clover seed	----	----	939	821	820	942	1,082	889	1,170	775	747	----
Grand total	313,756	331,994	334,333	345,825	354,247	353,453	347,639	348,183	349,851	351,402	352,049	[4] 359,692

[1] Subject to revision in December.
[2] Preliminary, Oct. 1.
[3] Acreage under cultivation June 25.
[4] Not including acreage for clover seed, for which no estimate is yet available.

Crop	Annual average 1910–1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924 [1]	1925 [2]
CEREALS												
Corn ..... bushels	*Thousands* 2,732,457	*Thousands* 2,994,793	*Thousands* 2,566,927	*Thousands* 3,065,233	*Thousands* 2,502,665	*Thousands* 2,811,302	*Thousands* 3,208,584	*Thousands* 3,068,569	*Thousands* 2,906,020	*Thousands* 3,003,557	*Thousands* 2,436,513	*Thousands* 2,917,836
Wheat ..... do	728,225	1,025,801	636,318	636,655	921,438	967,979	833,027	814,905	867,598	797,381	872,673	697,272
Oats ..... do	1,157,961	1,549,030	1,251,837	1,592,740	1,528,124	1,184,030	1,496,281	1,078,341	1,215,803	1,305,883	1,541,900	1,470,384
Barley ..... do	186,208	228,851	182,309	211,759	256,225	147,608	189,332	154,946	182,068	197,691	187,875	226,786
Rye ..... do	37,568	54,050	48,802	62,933	91,041	75,483	60,490	61,675	103,362	63,077	63,446	51,968
Buckwheat ..... do	17,022	15,056	11,662	16,022	16,905	14,399	13,142	14,207	14,564	13,965	15,956	15,823
Rice ..... do	24,378	28,947	40,861	34,739	38,606	41,985	52,066	37,612	41,405	33,717	33,956	35,810
Grain sorghums ..... do		114,460	53,858	61,409	73,241	130,734	137,408	113,990	90,524	105,835	114,231	102,056
Total	4,883,819	6,010,988	4,792,634	5,681,490	5,438,245	5,373,520	5,990,330	5,344,245	5,421,344	5,571,106	5,266,550	5,517,935
VEGETABLES												
Potatoes ..... bushels	360,772	359,721	286,953	442,108	411,860	322,867	403,296	361,659	453,396	416,105	454,784	344,227
Sweet potatoes ..... do	57,117	75,639	70,955	83,822	87,924	97,126	103,925	98,654	109,394	97,177	71,861	74,337
Beans (commercial) ..... do		10,321	10,715	16,045	17,397	13,349	9,185	9,150	12,793	16,004	13,619	17,754
Onions (commercial) ..... do		7,664	8,562	19,138	19,423	14,548	21,043	14,165	18,763	17,306	17,627	16,948
Cabbage (commercial) ..... tons		671	255	475	883	646	1,105	687	1,089	806	973	845
FRUITS												
Peaches ..... bushels	45,842	64,097	37,505	48,765	33,094	53,178	45,620	32,602	55,852	45,382	53,137	47,730
Pears ..... do	11,184	11,216	11,874	13,281	13,362	15,006	16,805	11,297	20,705	17,845	18,628	18,164
Apples ..... do	197,898	230,011	193,905	166,749	169,625	142,086	223,677	99,002	202,702	202,842	179,101	164,042
Cranberries (3 States) ..... barrels		441	471	249	352	549	449	384	560	652	562	567
MISCELLANEOUS												
Flaxseed ..... bushels	18,353	14,030	14,296	9,164	13,369	7,178	10,752	8,029	10,375	17,060	30,173	23,223
Sugar beets ..... tons	5,391	6,511	6,228	5,980	5,949	6,421	8,538	7,782	5,183	7,006	7,513	6,547
Tobacco ..... pounds	991,958	1,062,237	1,153,278	1,249,276	1,439,071	1,465,481	1,582,225	1,069,693	1,246,837	1,515,110	1,240,513	1,228,972
All hay ..... tons	81,640	107,263	110,992	98,439	91,139	104,760	105,315	97,770	112,013	106,611	112,450	98,135
Cotton ..... bales	14,259	11,192	11,450	11,302	12,041	11,421	13,440	7,954	9,762	10,140	13,628	14,759
Sorghum sirup ..... gallons	14,974	14,823	13,668	37,472	33,387	39,413	49,505	45,566	36,440	32,001	27,339	26,161
Peanuts ..... pounds			919,028	1,432,581	1,240,102	783,273	841,474	829,307	633,114	647,762	616,200	581,331
Broomcorn ..... tons		52	39	57	62	53	36	38	37	81	76	28
Clover seed ..... bushels			1,706	1,488	1,197	1,484	1,944	1,538	1,955	1,228	977	

[1] Subject to revision in December.

[2] Preliminary, Oct. 1.

Exports of domestic foodstuffs and cotton from the United States

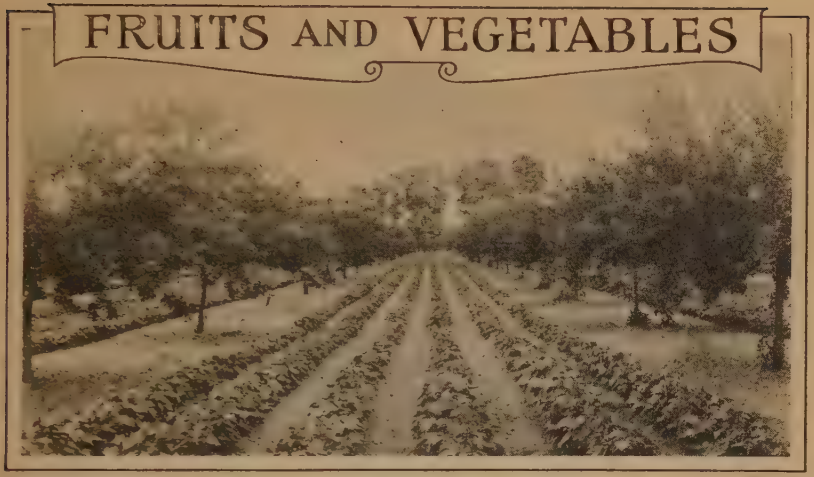
[Foreign Commerce and Navigation of the United States, 1910–1918, and monthly summaries of the Bureau of Foreign and Domestic Commerce, June, 1921, 1922, 1923, 1924, and 1925]

Article exported	Unit	Average 1910–1914	Year ended June 30—										
			1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
		Thousands	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*
Wheat, including flour	Bushel	104,967	332,465	243,117	203,574	132,579	287,402	219,865	336,077	279,407	221,923	156,430	258,023
Corn, including meal	do	41,409	50,668	39,897	66,753	49,073	23,019	16,729	70,906	179,490	96,596	23,135	9,791
Oats, including oatmeal	do	9,655	100,609	98,960	95,106	125,091	109,005	43,436	9,391	21,237	25,413	8,796	16,777
Barley, excluding flour	do	7,896	26,755	27,473	16,381	26,285	20,458	26,571	20,457	22,400	18,193	11,209	23,653
Rye, including flour	do	888	13,027	15,250	13,703	17,186	36,467	41,531	47,337	29,944	51,663	19,902	50,242
Rice, including flour, meals, and broken rice.	Pound	18,489	75,449	120,695	181,372	196,363	193,128	483,385	440,855	741,509	370,670	227,757	112,037
Dairy products:													
Butter	do	4,278	9,851	13,487	26,835	17,736	33,740	27,156	7,829	7,512	9,410	5,425	8,384
Cheese	do	4,915	55,363	44,394	66,050	44,303	18,792	19,378	10,826	7,471	8,446	3,938	9,432
Milk, condensed, evaporated, and powdered.	do	15,774	37,236	159,578	259,141	528,759	728,740	710,533	266,506	288,629	159,957	216,319	179,170
Total dairy products	do	24,967	102,450	217,459	352,026	590,798	781,272	757,067	285,161	303,612	177,812	225,682	196,986
Meat and meat products:													
Pickled beef	do	32,873	31,875	38,114	58,054	54,468	45,065	32,384	23,313	26,774	24,185	21,851	22,407
Fresh beef	do	29,452	170,441	231,214	197,177	370,033	332,205	153,561	21,084	3,993	4,017	2,817	3,144
Canned beef	do	9,392	75,243	50,804	67,556	97,343	108,460	31,133	10,763	3,749	2,312	1,545	1,835
Total beef	do	71,717	277,559	320,132	322,767	521,844	485,730	217,078	55,160	34,516	30,514	26,213	27,386
Bacon	do	182,474	346,718	579,809	667,152	815,294	1,238,247	803,667	489,298	350,549	408,334	423,500	236,263
Hams and shoulders	do	166,813	203,701	282,208	266,656	419,572	667,240	275,456	172,012	271,642	319,269	381,564	292,214
Pickled port	do	48,275	45,656	63,461	46,993	33,222	31,504	41,643	33,286	33,510	40,934	37,469	26,726
Canned pork	do	4,227	4,645	9,611	5,896	5,195	5,273	3,262	1,119	2,263	2,699	2,691	4,186
Fresh port	do	2,024	3,908	63,005	50,436	21,390	19,645	27,225	57,075	25,911	43,772	49,113	27,603
Total pork	do	403,813	604,628	998,094	1,037,133	1,294,673	1,961,909	1,151,253	752,790	683,875	815,008	894,337	586,992
Mutton and lamb	do	3,539	3,877	5,553	3,196	2,098	2,174	3,958	7,255	2,502	1,769	1,663	1,460

Lard and neutral lard	do	[1] 517,927	501,533	461,438	462,346	396,765	742,167	610,427	768,702	831,952	979,136	1,039,137	813,156
Oleo oil	do	[2] 116,225	80,482	102,646	67,110	56,603	59,292	71,529	106,415	117,174	104,956	92,965	105,145
Tallow	do	29,009	20,240	16,289	15,209	5,015	16,172	32,937	16,844	27,658	25,665	37,372	28,776
Other meat products [3]	do	115,019	125,895	104,617	98,963	69,834	190,634	134,750	107,473	102,312	63,589	64,446	75,286
Total meat and meat products	do	1,257,249	1,614,234	2,008,771	2,006,724	2,346,834	3,458,078	2,224,932	1,814,638	1,799,989	2,020,637	2,156,103	1,638,201
Apples [4]	Barrel	1,551	2,352	1,466	1,740	635	1,576	1,051	2,665	1,094	1,756	4,098	3,221
Cotton	500-pound bale.	8,840	8,807	6,168	6,176	4,641	5,526	7,087	5,623	6,718	5,253	5,899	8,439
Tobacco, leaf (including stems and trimmings)	Pound	392,183	348,346	443,293	411,599	289,171	629,288	648,038	506,526	463,389	454,364	597,630	430,702
Total, agricultural exports, including forest products	Dollar	1,143,642	1,528,491	1,586,227	2,037,172	2,367,647	3,693,193	4,051,560	2,749,518	2,009,981	1,929,150	2,029,897	2,436,805
Total agricultural exports, excluding forest products	do	1,038,041	1,475,938	1,518,071	1,968,253	2,280,466	3,579,918	3,861,511	2,607,642	1,915,866	1,799,168	1,867,098	2,280,165
Index of volume of exports, excluding forest products	Index No.	100	138	118	118	101	145	134	127	137	112	104	126

[1] 5-year average for lard and 4-year average for neutral lard; neutral lard included with "oleo oil" in 1910.
[2] Includes neutral lard for 1910.
[3] "Other meat products" include the following items: Canned sausage, other sausage, sausage casings, lard compounds, lard oil, oleomargarine, oleo and lard stearin, grease stearin, oleic acid or red oil, stearic acid, and other fatty acids.
[4] Includes boxed apples, boxes reduced to barrels on the basis of 3 boxes to the barrel.

FRUITS AND VEGETABLES



By L. C. Corbett, H. P. Gould, and W. R. Beattie, *Bureau of Plant Industry*

FRUITS, VEGETABLES, AND NUTS produced on farms in 1925, were valued at approximately $2,000,000,000, an amount sufficient to attract attention even in these times when to speak in terms of billions is but to use the language of the day. The total farm value of all agricultural products of the country, exclusive of those fed on farms, may during favorable crop years reach $15,000,000,000. The two crop-years of 1923 and 1924 are typical, their average being $12,114,800,000.

Value of Fruits, Vegetables, and Nuts

According to the fourteenth census, the farm value in 1919 of the fruits, vegetables, and nuts grown in the United States was as follows (fig. 1): Fruits $700,000,000; vegetables, including those grown in farm gardens, $1,300,000,000; nuts $30,000,000. The value of the wheat crop for the same year was about $2,000,000,000, and the corn crop $3,500,000,000, both of which, however, were above the normal yearly average for the census period from 1909 to 1919. A better comparison is obtained from the statistical report of the Division of Crop and Livestock Estimates, Bureau of Agricultural Economics, covering the average for the two-year period of 1923 and 1924, during which the corn crop was valued at $2,714,000,000, or 24.9 per cent of the total of all farm crops; the wheat crop $937,000,000, or 8.5 per cent of the total; cotton, including seed and lint, $1,678,000,000, or 15.4 per cent; hay and forage crops $1,676,000,000, or approximately 16.4 per cent; fruits $619,000,000, or 5.8 per cent; and vegetables $1,143,500,000, or 10 per cent of the total. Fruits and vegetables taken together would, therefore, represent 15.8 per cent of the total agricultural production.

Note.—This article is not intended as a handbook of cultural information on American horticulture, but as a portrayal of the origin and development of the fruit and vegetable industry of the United States and as an expression of its present status and important trends.

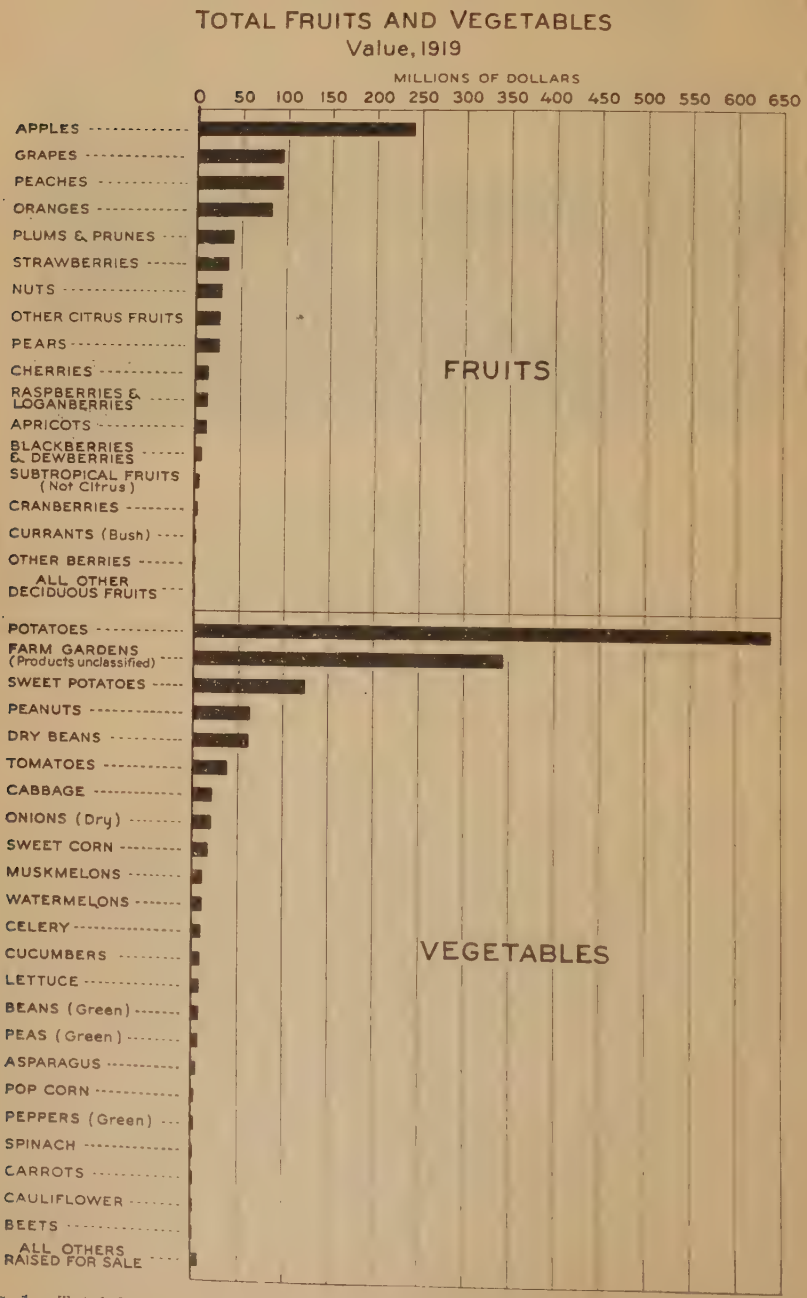


FIG. 1.—Total farm value of fruits and vegetables produced in the United States in 1919

Of the individual horticultural crops, the potato leads in farm value, this being placed at $370,000,000 for the 1923–24 average. Others named for comparison in order of farm values are: Apples, $230,000,000; sweet potatoes, $112,000,000; peaches, $79,500,000; grapes, $72,500,000; oranges, $64,500,000; and dry beans, $59,000.000. The most reliable sources of information indicate that the annual value of the nut crop grown in the United States is approximately $30,000,000.

Twenty important truck crops shipped to the markets and those used for canning in 1925 were valued at $918,813,000. The latest available figures on farm gardens are those given for 1923 and 1924, a yearly average of which is $342,000,000. Assuming that the value of farm gardens in 1925 was practically the same as for the two preceding years and adding that amount to the commercial vegetable crops gives a total of $1,260,813,000. This, however, does not take into account vegetables sold in small quantities and which are not included in statistical reports.

In addition there are many fruits, vegetables, and nuts grown, the value of which can not be determined, but which certainly aggregate many thousands of dollars. Such products, however, are mainly of local or personal rather than commercial value.

Though the valuation of the horticultural products may vary widely from year to year, even though the figures used to express their values are largely estimates and only approximations at the best, they are sufficient to be markedly impressive. If the fact was not otherwise made evident, the yearly value of these products would suggest the large place they take in the lives of the people.

Although the dollar is here used to express the economic status of our horticultural industries and to indicate their magnitude, it is, after all, the more abiding aspects, the deeper things in horticulture, of which the dollar is but an index, that have real significance. Although the material side of horticulture must be recognized, it is its contribution to the happiness and welfare of millions of people which makes its numerous aspects so very much worth while.

Early History of the Fruit Industry

American horticulture, which has attained this great importance, had its origin in both Old World and New World species of plants. When the first settlers came to the New World they found the Indians growing many crops of a horticultural nature. Old World fruits and vegetables were brought to America by the early settlers and wild American species were improved and placed under cultivation. Methods followed by the Indians were adopted and improved upon through the application of Old World cultural practices.

The inquiring mind, taking note of the present magnitude of our horticultural industries, can not fail to ask, "Whence has it all come, and how did it begin?" The development of the horticultural industries of the country has been in a most intimate sense "part and parcel" of the development of the country itself. There is no connected story of this development, and so far as it occurs at all it is found mostly as incidental references scattered throughout the meagre literature and records of colonial days.

The significant fact brought home to the minds of those who take into account the importance of the horticultural industries of to-day is the intimate relationship borne by its products to the life and well-being of all the people. This is not only true from the standpoint of proper food supply but the vast number of persons who, though not actually engaged in production, transport, handle, store, sell, and manufacture the products of horticulture. There is also that vast army of artisans who provide the supplies and equipment which go into horticultural production, all of whom in turn are consumers and must be fed. Much of the progress of the horticultural industries has been brought about through efficiency of transportation and this, together with the development of storage facilities, has made possible the present wide distribution and extended use of fruits and vegetables at all seasons of the year.

Fruits Grown by the Indians

The American Indians appreciated and made use of the wild fruits which in their native habitat were perhaps more abundant formerly than they came to be as advancing civilization made way to so large an extent with Nature's methods of production. It may be supposed that the Indians were satisfied with the products Nature gave them. At least, they knew nothing better.

Some conception of what the early explorers and pioneer settlers found has been presented in another connection,[1] and certain paragraphs very pertinent to this discussion are here quoted.

> The chronicler of the expedition sent out by Raleigh to explore in the vicinity of Hatteras said of the grapes observed there that he had visited those parts of Europe in which this fruit was most abundant, and that the difference in quantity in favor of Roanoke was quite incredible.
>
> Ralph Lane, in reporting his observations in 1585–86, pronounced the grapes of Virginia to be larger than those of France, Spain, or Italy.
>
> John Smith found "Chesnuts whose wild fruit equalize the best in France, Spaine, Germany, or Italy to their tast[e]s that had tasted them all." He early learned to discriminate between the green and the ripe persimmon, for he states: "Plumbs there are of three sorts. The red and white are like our hedge plumbs; but the other, which they call Putchamins grow as high as Palmeta. The fruit is like a medler; it is first green, then yellow, and red when it is ripe; if it be not ripe it will draw a man's mouth awrie with much torment; but when it is ripe it is as delicious as an Apricot." He mentions also chinquapins, cherries, crab apples, and grapes, of which last named the colonists made "neere 20 gallons of wine, which was neere as good as your French British wine." He describes at length the Indian methods of drying nuts and persimmons for the winter supply and of preparing them for food, and mentions among other summer fruits "strawberries which ripen in April" and "Mulberries which ripen in May and June"; he also mentions gooseberries and raspberries as abundant.
>
> The New England colonists made similar reports. In the words of one who was at Plymouth in 1622, "The chestnut, hazelnut, beechnut, butternut, and shagbark yielded contributions to the store of food laid up for winter. Wild cherries, mulberries and plums enlarged the variety of the summer's diet. Wild berries, as the strawberry, the gooseberry, the raspberry, the whortleberry, the cranberry, grew in plenty in the meadow and champaign lands. Vines bearing grapes of tolerable flavor flourished along the streams." Rev. Francis Higginson, writing from the Massachusetts colony

[1] TAYLOR, WILLIAM A. THE FRUIT INDUSTRY AND SUBSTITUTION OF DOMESTIC FOR FOREIGN-GROWN FRUITS. Yearbook of the Dept. of Agr., 1897, pp. 305–344; also Div. of Pomology Bul. 7 with similar title by the same author.

in 1629, says: "Excellent vines are here, up and down in the woods. Our governor hath already planted a vineyard with great hopes of encrease; also mulberries, plums, raspberries, corrance, chestnuts, filberts, walnuts, smalnuts, hurtleberries, and hawes of white thorne, neer as good as our cherries in England, they grow in plentie here." William Wood, who came in 1629, reports, "There is likewise Strawberries in abundance, verie large ones, some being two inches about; one may gather halfe a bushell in a forenoone. In other seasons there be Gooseberries, Bilberries, Resberries, Treacleberries, Hurtleberries, Currants; which being dried in the Sunne are little inferior to those that our Grocers sell in England." He seems to have been a man of discriminating taste, for, unlike other writers of the period, he tempered his praise of some with condemnation of others, as in the following lines: "The Cherrie trees yield great store of Cherries which grow on clusters like grapes; they be much smaller than our English cherry, nothing neare so good if they be not fully ripe, they so furre the mouth that the tongue will cleave to the roofe, and the throat wax hoarse with swallowing those red Bullies (as I may call them), being little better in taste. English ordering may bring them to be an English *cherry* but yet they are as wilde as the *Indians*. The Plummes of the Countrey be better for Plumbs than the Cherries be for Cherries; they be black and yellow about the bignesse of a Damson, of a reasonable good taste. The white thorne affords hawes as big as an English Cherrie which is esteemed above a Cherrie for his goodness and pleasantnesse to the taste." In his account, "New England's prospect," we find that comparisons of latitude and climate were being made with a view to determine the possibilities of domestic wine production, for he says "vines afford great store of grapes which are very bigge, both for the grape and Cluster, sweet and good: These be of two sorts, red and white, there is likewise a smaller kinde of grape which groweth in the Islands, which is sooner ripe and more delectable; so that there is no knowne reason why as good wine may not be made in those parts as well as in *Burdenaux* in *France* being under the same degree."

Roger Williams found the strawberry "the wonder of all the fruits growing naturally in these parts. In some places where the natives have planted I have many times seen as many as would fill a good ship within a few miles compass."

William Penn, writing in 1683, mentioned chestnuts, walnuts, plums, strawberries, cranberries, whortleberries, and grapes as growing naturally in the woods, and questioned whether it was best to attempt to improve the fruits of the country, especially the grapes, by the care and skill of art or to send for foreign stems and sets, already good and approved. It seemed to him most reasonable to believe that a thing grows best where it grows naturally, and that it would hardly be equaled by another of the same kind not naturally growing there.

The abundant and varied supply of indigenous fruits in the Mississippi Valley and Lake regions is still a matter of recollection among the surviving pioneers and their descendants.

Influence of Native and Exotic Species

It is evident, however, that attempts were soon made, to improve, or at least to domesticate some of the native fruits, and to introduce exotic species. It is recorded that Lord Delaware who came in 1610 brought with him French vineyardists who transplanted native grapevines. In 1619 the Virginia Co., sent French vine dressers to America with cuttings of the finest European grapes.

The demands of civilization have long been forcing the issue with insects and diseases, with frosts and drouth and other natural elements, and man has been engaged in inducing fruit trees and other plants, the products of which he has desired, to exceed Nature's requirements. It is not a normal outcome of the seasonal influences for an apple tree to produce at harvest time 20 bushels of fruit, each apple perfect in size, color, finish, and in freedom from every

kind of blemish of insect and disease. That is man's ideal, though if the tree is large he may want from it 40 rather than 20 bushels of perfect fruit. The one aim of Nature in growing fruit is to produce seeds that the species may be perpetuated. It does not matter to Nature if the fruits are small as size has little to do with the number of seeds in an apple and their vitality may not be impaired if insects and diseases blemish the skin. Besides, if every seed that develops should grow, the earth would soon become overcrowded with plant life; so many seeds may fail and still Nature's object be accomplished; she is profligate, wasteful, and in no hurry. Man is impatient of results and strives for perfection in size, flavor, and beauty of finish, none of which is essential to the perpetuation of the species.

An inventory of the fruits that enter into American horticulture will be helpful and perhaps surprising. The largest surprise is in the extent to which the American fruit industry has been built on fruits not native to this country. Of the different fruits with which the markets are somewhat familiar, the following may be claimed as native: Raspberry, both red and black, blackberry, dewberry, strawberry, cranberry, blueberry, huckleberry, elderberry, Juneberry, gooseberry (native in distinction from the European type), persimmon (native in distinction from the Oriental type), plum (native in distinction from the Japanese and European or domestica types), grape (excepting the European or vinifera type), mulberry (certain relatively unimportant types), crab apple.

Among the native nuts the pecan is the only one cultivated extensively for its food product. Others which should be enumerated, however, because of the contribution made from wild trees, include: Hickories (several forms), black walnut, butternut, chestnut, chinquapin, and possibly a very few others of minor importance. Reference also may be made to the papaw, buffalo berry, and various subtropical fruits that are rarely seen in the markets, but which, even growing wild, are more or less esteemed locally.

In contrast, note the following list of fruits which are not native to the United States and for the most part not even to the Western Hemisphere: Apple, pear, quince, loquat, peach, plum, including the prune (European and Japanese types), cherry (both sweet and sour types), apricot, orange(including the tangerine and other types), grapefruit, lemon, lime, kumquat, fig, persimmon (Oriental type), olive, pomegranate, mango, avocado, pineapple, date, grape (European or vinifera type), currant, gooseberry (English type), mulberry (more important types); of nuts, the Persian walnut and almond as the most important, Japan chestnut, European chestnut and a few others.

The foregoing inventory—native and exotic or introduced fruits and nuts—though imposing enough in length, is not intended to be exhaustive but rather to include those fruits with which the consuming public is more or less generally acquainted. Even a casual review of the two lists will impress the fact of the relatively small proportion of the commercial industry represented by the native list as compared with the introduced list. The preponderance of berries in the native list is striking.

Figure 2 visualizes effectively the relative importance of fruits native to the United States and the ones introduced from other lands. Although the great bulk of the fruit grown represents varieties originated here, they have come largely from foreign species. The situation indicated by Figure 2 raises anew the question of the trend of development.

Starting Points in American History

Although, as already stated, there is little on record to show the details of what took place in the early days of American colonization, fragments of information suggest the outlines of the story. In early American history there are certain places and dates that

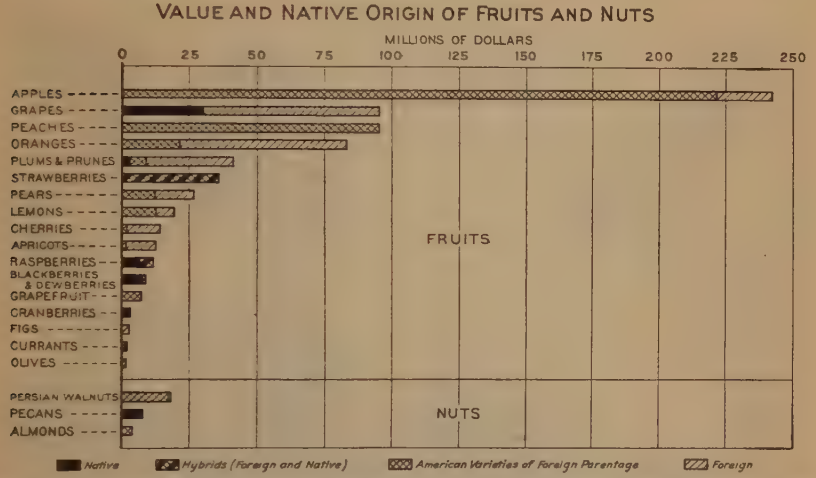


FIG. 2.—The extent to which the fruit and nut industries of the United States are based on foreign species, a situation not generally appreciated. Only a small proportion of these industries are wholly American in their origin. Although only a comparatively small percentage of the different varieties grown are of foreign origin, the great bulk of the fruits and nuts produced consist of varieties of foreign parentage, but which have been developed here. The values shown in millions of dollars are those given in the census for the crop of 1919

stand as starting points: St. Augustine and 1565, Jamestown and 1607, Plymouth Rock and 1620—these are places and dates from which events are reckoned.

On the Pacific coast an equally significant date appears, considerably later than along the Atlantic seaboard, namely, the coming of the Franciscan fathers into California in 1769. That event marked the beginning of a period in fruit history on the Pacific coast comparable with that which occurred on the Atlantic coast. In 1769 the first mission was established at or near the present site of San Diego. Between that time and 1823 the Franciscans founded, in all, 21 missions and at nearly all of them fruit collections were planted, some of them of considerable size. Naturally these plantings consisted of the fruits with which the Franciscans had been previously familiar—oranges, lemons, olives, figs, pomegranates, wine grapes, and others. Remnants of some of these early mission plants still remain (fig. 3).

As an abiding monument to the vision of those early laborers for mankind, there are to-day in California the Mission fig, the Mission olive, the Mission grape—varieties that trace back to these early missions for their beginnings in California, the fig and olive varieties still being among the most important in the industries they represent.

The Franciscan fathers were active in other parts of the southwest while Spain still held sway there. Near the present town of Manzano in central New Mexico there stand the ruins of an ancient mission church. At this spot in the seventeenth century there was an Indian pueblo known as Ouarai. It is recorded that the church was built in 1629. It was abandoned in 1675 because of the depredations of the Indians. Near its ruins there are to be seen to-day the

FIG. 3.—Olive trees planted at the San Diego Mission, near the present site of San Diego, Calif., about 150 years ago, as they appeared in May, 1920. In recent years the trees have received but little care and are much depleted as a result of neglect; also from attacks of twig borers

remnants of an ancient but still producing apple orchard, which tradition says was planted sometime during the occupancy of the mission. If this be true, than the orchard must trace back at least for 250 years. The trees now standing give evidence of being 100 years old or more, and it is believed by those who have examined them that they have grown from the roots of an earlier stand of trees after the original tops had died. Though much must be left to the imagination and few facts concerning the early history of these trees are authenticated, their great age is clearly indicated. The source from which the Franciscans obtained them in the beginning or the seeds from which they grew, assuming that the legend of their planting is true, furnishes a wide field for speculation.

Apparently authentic though not fully verified statements indicate that the Spaniards brought oranges to Florida as early as 1560—even before the founding of St. Augustine. Oranges had

been growing long enough in Florida, and the trees had become so numerous in a more or less wild state in some sections as to give to early settlers the impression that they were indigenous.

Though it seems impossible to fix the date when figs were introduced in Florida or in the Southeastern States, it is generally assumed that they, too, were brought in by the Spaniards or early explorers or settlers. Because of its historical setting, interest in early horticulture possibly centers in the colonies farther north—Jamestown and Plymouth Rock, and the parts of the country these places stand for historically. It was from the Atlantic seaboard, in the main, that fruit growing spread into the Mississippi Valley and westward.

As an insight into the manner by which many fruits of the Old World early became established in the New World, there is perhaps no more significant record anywhere than that to which Smith [2] has called attention. He mentions two entries in the records of the governor and company of the Massachusetts Bay at New England, one of which, undated, was evidently made during 1629, if not the preceding year, and which consisted of a memorandum of things "to prouide to send for New England." Among them were to be "stones of all sorts of fruits, as peaches, plums, filberts, cherries." The second record is a reference to a letter dated April 17, 1629, from Gravesend, England, by the governor and deputy of the New England Co., to Capt. John Endecott, then "governor and council for London's plantation in the Massachusetts Bay in New England," from which one reads: "As for fruit stones and kernels, the time of year fits not to send them now, so we purpose to do it pr. our next."

Thus within a decade after the landing of the Pilgrims the foundation of a future fruit industry was being laid in fruit seeds brought from the Old World homes of the first settlers.

A Remarkable Fruit Tree

Specific reference to one of the most remarkable fruit trees in the history of American pomology is of interest here—the old Endecott pear tree standing near Danversport, Mass. Figure 4 shows this tree as it appeared when in bloom in May, 1920. Figure 5 as it looked in September, 1923, the two views being from a slightly different angle.

If tradition be true, this tree was planted in its present location by Gov. John Endecott soon after "Orchard Farm," as the tract of land was very early designated, was granted to the governor, which was on July 3, 1632. That many trees were planted here within the next few years after the grant was made is clearly evident, since it is a matter of record that 500 trees were injured in 1641 by a fire that was set by children.

Whether the Endecott pear tree was first planted where it now stands or was transplanted from Governor Endecott's garden in Salem is uncertain. That it may have been brought from overseas is not impossible. In fact, there is a tradition that it came in the ship *Arbella* with Winthrop in 1630. Whatever the facts, there are enough very early references to this pear tree which connect it

[2] SMITH, ERWIN F. PEACH YELLOWS: A PRELIMINARY REPORT. U. S. Dept. of Agr., Div. of Botany, Bul. 9, p. 11 (1888).

FIG. 4.—The Endecott pear tree as it appeared when in full bloom in May, 1920

FIG. 5.—The Endecott pear tree as it looked in September, 1923, nearly 300 years after it was planted

definitely with Governor Endecott to give much support to a very early date of planting, though the exact year in which it was done is a matter of some conjecture. In line with the view that it was transplanted from the governor's garden in Salem to its present site, what could have been more natural than that the tree grew from a seed in the garden, from whence it was removed to its permanent location at Orchard Farm soon after the grant of land was made in 1632. That the tree is a seedling rather than one grown from a bud or scion on some other root is indicated by the fact that the fruit borne by the two parts of the double trunk, which are readily seen in Figure 5, is the same as that produced by the original "main" tree, this fact being commented on by William Lincoln, of Worcester, who addressed the Massachusetts Horticultural Society in 1837 concerning this pear tree. In part, he spoke as follows:

> Its appearance at this time is rather dwarfish, being only 18 feet high and 55 feet in the circumference of its branches. The trunk exhibits all the marks of extreme old age, being entirely hollow, and mostly open on the south side, with just sufficient bark to convey sap to the branches. It is 7 feet 4 inches in circumference near the roots, and is divided into three parts, two of which are connected, to the height of about 18 inches; the other is entirely distinct from the ground upward. There is bark only on the outside of these divisions, until they reach the height of 7 or 8 feet, where they are completely encircled with it, and form distinct limbs, with numerous lateral branches, all of which appear in a perfectly sound and healthy state. Two suckers have sprung up from the roots, one on the northeast, and the other on the southwest side, each 10 or 12 feet in length, and I presume it is known that this tree has never been grafted, but is natural fruit.

In a painting of this tree made in 1816 two sprouts on opposite sides of the main trunk are clearly evident. Presumably, they are the suckers referred to in the above quotation, and they are even more plainly shown in a wood engraving of the tree published in 1845; also in a drawing of the tree made in 1863.

When the main trunk of this tree disappeared does not seem to be a matter of record. During the past century and more the tree has suffered much from severe storms. In 1815 it is recorded that it was badly shattered by a gale, and again in 1837, and still other storms are reported to have wrought havoc with it. Still it survives. The present owner of the tree and of "Orchard Farm," himself a direct descendant from Governor Endecott has the following to say about it:[3]

> When visited on October 11, 1924, it was found that the original trunk described in 1837 had entirely disappeared, but the two suckers were in good condition, the taller, the one on the southwest side, being about 14 feet high and having a circumference of 25 inches at 3 feet from the ground. The other sucker measured 22 inches in circumference at 3 feet from the ground and was somewhat hollow-hearted below that point. During a recent storm a northerly branch from this sucker had partly broken off. No new suckers were to be seen. Many pears lay on the ground and half a bushel of the fruit had been carried to the house that morning. The pear is undoubtedly the old-fashioned "sugar pear," well known in old gardens. It is round, slightly red on one side, has an average diameter of 2¼ inches, and when ripe is

[3] Credit for information concerning the old Endecott pear tree is due Frank C. Damon, Danvers, Mass., and to the present owner of the tree, William C. Endicott, Boston, Mass., who furnished the photographs from which Figures 4 and 5 were made, and other information. The substance of this account has been taken, and published in part direct, from a book entitled "Memoir of Samuel Endicott with a Genealogy of His Descendants," of which Mr. Endicott is the author, and privately published by him.

The name Endecott was changed to Endicott apparently by a member of the fourth generation from Governor Endecott. As the pear is named for the latter the spelling is made to correspond.

usually decayed at the heart. This is a characteristic of this pear everywhere, but when just right to eat it is juicy and sugary sweet, and well accounts for its name.

Not the least interesting thing concerning the old Endecott pear tree is the fact that, whatever its exact age may be, it bridges completely the whole span of years from very early colonial days to the present time. It seems safe to assume that it represents the oldest planted fruit tree now growing in America.

Smith [4] makes other citations of much interest. In reference to peach growing in Maryland in 1635: "Although there be not many that do apply themselves to plant gardens and orchards, yet those that do it find much profit and pleasure thereby. They have peares, apples, and several sorts of plummes, peaches in abundance, and as good as those in Italy." Again, in 1656, a writer referring to an earlier time, said: "Orchards innumerable were planted and preserved," and of his own time this writer spoke:

> The country is full of gallant orchards, and the fruit generally more luscious and delightful than here. Witness the peach and quince. The latter may be eaten raw savourily; the former differs and as much exceeds ours as the best-relished apple we have doth the crab, and of both most excellent and comfortable drinks are made.

Another has recorded for the same period:

> All early travelers in and writers about Maryland have noted the fact that even before the first generation of settlers has passed, the country was thickly planted with orchards of apple and peach trees, which seemed to grow in the most flourishing way. It is certainly remarkable that within 22 years after the landing at Saint Mary's in 1634 orchards should have become a notable and even conspicuous feature in the landscape; but the evidence of the fact is conclusive.

In 1680 it is recorded by a personal witness concerning New Jersey:

> I have traveled through most of the places that are settled, and some that are not; and in every place I find the country very apt to answer the expectations of the diligent. I have seen orchards laden with fruit to admiration; their very limbs torn to pieces by the weight, and most delicious to the taste and lovely to behold. I have seen an apple tree from a pippin kernel yield a barrel of curious cider, and peaches in such plenty that some people took their carts a peach gathering; I could not but smile at the conceit of it; they are very delicate fruit, and hang almost like our onions that are tied on ropes.

In a similar manner the development of fruit growing might be traced throughout the eighteenth century. The foundation of a pomological development was laid, apparently coincident with the determination of the first immigrants to make their future home in the New World.

Beginning early in the nineteenth century, or even during the last decade of the eighteenth, the horticultural interests assumed greater importance. The Revolutionary War had been fought and won. Things distinctively American began to develop. In a most effective manner Bailey [5] has reviewed some of the outstanding features of this epoch in American horticulture, especially in recounting its status at the period centering around the year 1800 and in pointing out some of the influences that were operative in a directing way, especially during the first half of the nineteenth century. On this review the following statements, greatly condensed, are based.

---

[4] Ibid.

[5] BAILEY, L. H. SKETCH OF A CENTURY OF AMERICAN HORTICULTURE. The Florists Exchange, Vol. VII, No. 17 (Mar. 30, 1895), p. 387.

The Beginning of American Horticultural Literature

It was during the latter half of the eighteen century that American agricultural literature had its beginning. Not until 1804, however, did a strictly American horticultural book appear when "The American Gardener," by John Gardiner and David Hepburn, was published. This was followed in 1806 by Bernard M'Mahon's "American Gardener's Calendar." The first strictly pomological book indigenous to the New World was entitled "View of the Cultivation of Fruit Trees," by William Coxe, published in 1817. This was followed in 1822 by James Thacher's "American Orchardist." Several earlier books appeared in America before the one by Coxe but they were based largely on English conditions or were American editions of English works.

In 1818 the first horticultural organization, the New York Horticultural Society, came into being. The second organization to be founded for the advancement of horticulture was the Pennsylvania Horticultural Society, which dates from 1827 and which is still active.

The New York society is said to have gone out of existence about 1837. It was comparatively early in this century, too, that current horticultural literature first appeared. The New England Farmer, established in Boston in 1822, was the first journal to devote any considerable space to horticultural subjects. Thirteen years later, or in 1835, the Horticultural Register and Gardener's Magazine first appeared also in Boston. The number of horticultural publications, including many that have specialized in particular phases of horticulture—fruit growing, vegetable growing, floriculture, and landscape gardening—that has followed in their trend has been legion.

Leaders in Early American Horticulture

The beginning of the nineteenth century thus witnessed the setting in motion of influences that were to have a marked effect on the trend and rapidity of development of the pomological interests of the country. Books on fruit growing and gardening began to appear and the number increased, for those days, with considerable rapidity; magazines and papers devoting space to horticulture were established; societies to promote horticultural interests were organized; and, men of horticultural vision and strong influence appeared. The names of Adlum, Jonathan Chapman (Johnny Appleseed,) Patrick Barry, William Cobbett, William Coxe, Andrew Jackson Downing, Charles Downing, John James Dufour, George Ellwanger, Thomas Green Fessenden, C. M. Hovey, William Kendrick, Henderson Lewelling, Nicholas Longworth, John McIntosh, Bernard M'Mahon, Robert Manning, William Prince, William Robert Prince, John J. Thomas, John A. Warder, Marshall P. Wilder, and a host of others not less worthy or influential than many of those included in the roll will forever be linked with the developing fruit interests of the country during the first 50 years of the nineteenth century. America was developing during this time her own fruit experts and specialists. Although many of these men lived well into the second half of the century and perhaps did some of their most effective

work during their later years, it perhaps did not count for as much as in the more formative period.

It is impracticable in this historical background to more than touch a few of the most outstanding points. But a very hurried sketch of the status of the apple through the early colonial period is enough to give us an insight into much that has since followed.

That the first immigrants to the New World obtained seeds of many of the fruits they knew in their former homes seems indisputable. Hence the first fruits grown by them were apparently seedlings. As to the apple, it was seemingly prized for cider above all else. At least it is recorded that as early as 1647 a single individual in Virginia made 20 butts of it. But the early Bostonians were doing likewise, for in 1721 a small community of 40 families near there is said to have made about 3,000 barrels of cider. Moreover, in 1644, Gov. John Endecott, of the Massachusetts Colony, wrote to John Winthrop as follows: "My children burnt mee at least 500 trees this spring by setting the ground on fire neere them"; and in 1648 he traded 500 apple trees 3 years old for 250 acres of land. Even in those days apples were evidently grown in considerable abundance in some centers. In 1817 Coxe could list "one hundred kinds of the most estimable apples cultivated in our country." In 1825 William Prince, from his nursery at Flushing, Long Island, offered 116 apple varieties at 37½ cents apiece. Seventeen of these were deemed especially good for cider, while 61 of the number were considered to be of American origin.

The Prince catalogue for 1823 listed 114 varieties of apples, including crab apples, among which were many names familiar to most apple growers of to-day, for example, Summer Rose, Maiden Blush, Fall Pippin, Newtown Spitzenburg, Esopus Spitzenburg, Lady, Yellow Bellflower, Vandevere, Swaar, Rhode Island Greening, Yellow Newtown, Winesap, Yellow Harvest, which undoubtedly is Early Harvest, Red Baldwin Pippin, which without question is Baldwin of the present day, and a number of others no less generally known. In this connection it is of interest to note that some of these varieties were old even in Prince's time. For instance, the Baldwin traces its history back to 1740; Rhode Island Greening to 1748; Yellow Newtown to 1759, by which date it must have been pretty well established, since in that year Benjamin Franklin received specimens of it in London, and it was only a few years later (1765) that a tree of it had become noted in Albemarle County, Va., for its fine fruit.

Other varieties not named by Prince lend a sense of venerableness to the apple industry. The Roxbury is supposed to have originated early in the seventeenth century in Massachusetts, to have been taken into Connecticut soon after 1649, and to have gone from t' ere to Ohio in 1797; Westfield was introduced into Ohio from Connecticut as early as 1796; Wagener dates from 1791; and Tompkins King, Tolman, Ralls, Red Canada, Wine, Hubbardston, Northern Spy, Ortley, and still others have rather definite histories going back from 100 to 125 years.

In his catalogue for 1823 Prince offered 107 varieties of pears; 74 varieties of peaches, including Oldmixon, Heath, Early Newington, and Columbia, the last two better known to peach growers of a

slightly earlier day than to those of the present time; also 48 varieties of plums and 53 of cherries, the latter including the Early Richmond, English Morello, Yellow Spanish, Elkhorn, and May Duke.

In the list of apples described by Coxe in 1817 one finds the following familiar names: Summer Rose, Maiden Blush, Vandevere, Wine, Esopus Spitzenburg, Newtown Spitzenburg, Rhode Island Greening, Yellow Newtown, Winesap, and several others. He also described 38 varieties of peaches and 65 of pears not many of which are in the American trade at the present time. Thus it is seen that long lists of varieties have early precedents. The development of commercial fruit growing has been a gradual process though it had early beginnings as some of the foregoing historical references indicate.

Extensive peach orchards came into existence earlier than did correspondingly large apple orchards so far as indicated by historical evidence. For instance, about the year 1800 a seedling peach orchard consisting of 18,000 to 20,000 trees was planted in Anne Arundel County, about 20 miles south of Baltimore, Md. The entire product of this orchard, however, is said to have been used in making brandy.

It was during the decade following the Civil War that peach growing assumed the status of a somewhat modern commercial fruit industry in what was then the recognized peach belt—Maryland, the Delaware peninsula, and New Jersey. The first commercial peach orchard in western Maryland was planted near Edgemont in 1875.

Though peach growing has existed in Georgia for many years (the Elberta peach originated from a seed planted near Marshallville in the fall of 1870), it was not until the late J. H. Hale undertook operations at Fort Valley in the early nineties that central Georgia began to assume the status of a prominent peach district. The development of other peach-growing regions in the more recent years, although perhaps as interesting as the earlier ventures, must be passed by without comment.

Apple growing expanded in the older parts of the country somewhat steadily from its early beginnings as an amateur enterprise into a commercial industry. It was feared some 65 years ago that within a decade the production of apples would become so great that they would not be worth picking, and there is said to be a record of one man in western New York during that period who cut down his orchard because of his fears in this respect.

First Attempts at Spraying

Although modern apple growing can hardly be said to date from the time when spraying was first used as a means of controlling insects and diseases, it is of interest to note here that the first recorded instance so far as known of spraying an orchard was when in the spring of 1878 an apple grower in Niagara County, N. Y., sprayed his apple trees with Paris green for the control of canker worms. In due course it was observed that the sprayed trees were not only less severely injured by canker worms than the unsprayed but that the fruit was less injured by the codling moth. This seemingly was the first suggestion that "wormy apples" might be prevented by spraying.

This first attempt at spraying apple trees attracted a good deal of attention in western New York, not all of which was of favorable purport. Other similar efforts followed the next year and in subsequent years. Bordeaux mixture began about 1885 to receive attention as a fungicide. From this time on spraying gained ground constantly as a regular orchard practice until it came to be recognized as an essential operation if fruit growing was to succeed as a commercial enterprise. However, a review of the experiment station literature, the annual reports of the various horticultural societies, and the current horticultural press of the period will show that discussions of the question, "Does it pay to spray?" continued practically until the end of the century—1900.

The development of spraying marks, in a striking manner, the development of the modern fruit industry. The development of cold storage and improved transportation facilities was practically coincident with the working out of effective insect and disease control methods.

Thus, from 1880 or 1885 to 1900 great things fundamentally important to the fruit industry took place—the development of spraying, of cold-storage methods and facilities, and of improved transportation equipment. During the last 25 years much advancement has been made but it has been based in a peculiar sense on the constructive efforts that were put forth during the preceding 15-year period.

In yet another way the growth of the fruit industry is outlined or at least is indicated by the export trade in apples. The fact has elsewhere been noted that Benjamin Franklin received Yellow Newton apples in London in 1759. It is further recorded that there were "large apple exports" in 1773. The records for the next 75 or 80 years are rather fragmentary, but the growth in apple exports since 1851 as shown by definite export data has been rather constant. In 1851 there were exported 28,842 barrels of apples. The average exports for the 10-year period 1851 to 1860 were 38,860 barrels; for the period 1861 to 1870 (shipments for 1869 omitted), 88,589 barrels: the decade 1871 to 1880, annual average 214,448 barrels; 1881 to 1890, 560,385 barrels; 1891 to 1900, 575,549 barrels. Since the season of 1902–3, the annual exports have dropped below 1,000,000 barrels but three times. The largest yearly export was in the season of 1920–21, when 2,665,000 barrels were shipped. These export figures are of interest in this connection only in suggesting the tendencies and at the same time the growth of an important phase of the apple industry.

Not less marked has been the expansion of the citrus industry, especially in Florida and California, with interesting developments in the Gulf coast region of several States and in Arizona. The story of the rise and development of grape growing is little short of a pomological romance. The extension of fruit growing to the frontier outposts as the settlement of the country proceeded westward is a part of the history of the country itself.

The particular citations that have been made with respect to apples serve to suggest substantially what has been the course of development with other fruit industries, specific reference to which must be passed over in the present connection.

This phase of the account must end here. The background of the pomology of the country and its initial impetus have been stated. For a hundred years since the real foundation was laid the industry has been gaining momentum.

Early History of the Vegetable Industry

Writers on the kitchen garden and other phases of vegetable growing are particularly silent with regard to the early history of the vegetable industry and give little information that would aid in the formation of a connected account of its development. It is significant, however, that such authors as Bernard M'Mahon, whose work was first published in 1806, give detailed directions for the preparation of hotbeds, the starting of early plants, and the culture of a majority of our vegetables, also that cultural practices recommended to-day show few departures from those given by these early writers. The foundation of the American vegetable industry seems to have

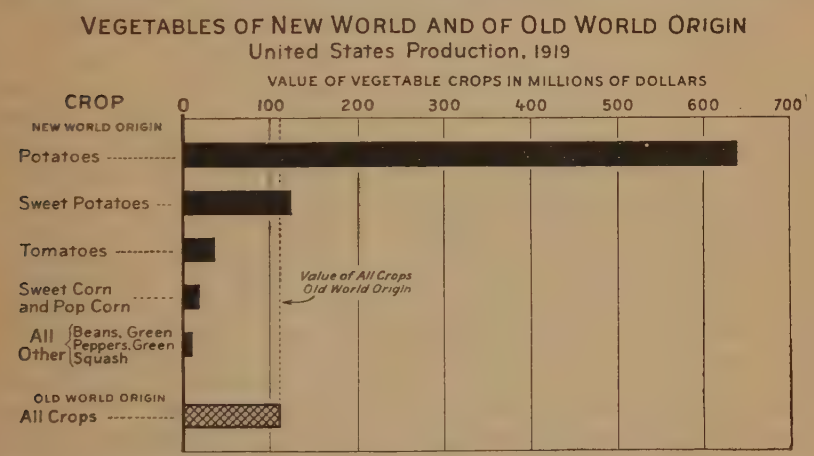


FIG. 6.—Comparison in farm value of vegetables of Old World and New World origin

consisted of the knowledge brought over by Old World gardeners supplemented by that obtained from the Indians. Old World species, together with those grown by the Indians, were the materials from which the structure of the industry was built. The graph shown in Figure 6 illustrates in a striking manner the relative importance of Old World and New World vegetables.

The American people of to-day are deeply indebted to those pioneers in horticulture who during the latter part of the eighteenth and the early part of the nineteenth centuries preserved and improved both the Old World and the New World types of vegetables, many of which came into general use almost immediately, others, however, requiring long introductory periods before being accepted as having real merit. It is significant that the vegetables grown and used by the Indians were readily accepted as food crops by the early settlers whereas those that were later introduced, or which were not being used by the Indians, required a longer period for their adoption. For example, beans and corn came into almost immediate

popularity, while tomatoes and potatoes, both of which are of South American origin, were introduced into Europe where they became popular and later brought to North America from Europe.

Early development of the vegetable industry in America was, for the most part, in the vicinity of the main population centers, such as Boston, New York, Rochester, and Philadelphia. Here also were located the first seed firms, including M'Mahon, Buist, Landreth, Thorburn, Vick, and others. It is to these seedsmen that we are indebted for most of the earlier cultural information. In fact, it is only during comparatively recent years that standard American works on vegetable gardening, written by persons not connected with the seed trade, have been published and even these are based largely upon the information supplied by the seedsmen as a stimulus to the sale of seeds.

Many of our present American varieties are the products of work performed by amateur horticulturists and botanists who used both the Old World and New World species in the creation of these newer varieties. Comparatively few of the more important varieties of vegetables have been originated by the seed trade. However, the seedsmen have been the important factor in the introduction and dissemination of these varieties. In a few instances the originator of a variety has been the introducer and to a certain degree has become a growerdealer of that and closely related varieties. Practical vegetable growers, during recent years, have originated many of our most important varieties of vegetables.

Vegetables of American origin, especially the potato and tomato, have become an important factor in the world's agriculture, while certain of those of Old World origin now form the basis of some of our largest vegetable production, transportation, and manufacturing enterprises. Although the potato has undoubtedly contributed more to the general well-being of the world's inhabitants it would be unfair to the credit of numerous vegetables of Old World origin to fail to call attention to their great economic importance. It is unfortunate indeed that a more detailed and connected account of the early development of the vegetable industry as a whole in America is not available. The early history of the individual vegetable crops, especially those of Old World origin, is reasonably clear in most instances. The record varies in character, however, to such an extent as to render it impracticable to consider it under a general sketch, therefore, further reference to the history of the vegetables will be left for consideration under the individual crops.

RELATION OF THE FRUIT AND VEGETABLE INDUSTRY TO OTHER FARM ENTERPRISES

By L. C. Corbett and W. R. Beattie, *Bureau of Plant Industry*, and H. R. Tolley, *Bureau of Agricultural Economics*

COMMERCIAL FRUIT GROWING is concentrated in the few regions naturally best adapted to the several kinds and having adequate market and transportation facilities, whereas fruit growing for home use is limited only by the desire of the grower and the physical environment. Commercial fruit production has developed in two general ways, either out of other farm enterprises by a gradual readjustment as has taken place in certain sections in New York, Virginia, Michigan, and the Carolinas, or as an independent reclamation activity where lands not previously used for agricultural purposes have been cleared and immediately planted to orchards or have been reclaimed through irrigation and immediately devoted to orchard enterprises.

Where commercial fruit production has displaced other farm enterprises the transition has been rather gradual as one farmer after another, finding fruit growing more profitable than other agricultural enterprises, has gradually extended his area in fruit. Other farmers in the region have gradually followed until the dominant enterprise of the community has become fruit growing rather than general or special agricultural production. In such regions fruit growing as an enterprise is found in all stages of development and associated with various other farming enterprises according to the secondary adaptabilities of the region and the choice of the farmer. In some regions the transition has been from general cereal production to fruit growing, whereas in other regions the change has been from dairying, stock raising, or stock feeding to fruit depending upon the adaptabilities of the region, transportation facilities, markets, and other limiting factors.

The same general plan of procedure has characterized the development of the commercial vegetable industry. In the beginning market gardeners developed a seasonal production to meet the requirements of the local market. With the development of transportation and the growth of city populations, special markets which

would absorb large quantities of particular crops covering a long period led to the development of regional crop areas and the extensive planting of special crops to meet the seasonal requirements of the markets. This extensive planting of special crops in certain localities led to car-lot shipments and the rise of what we now term the "trucking industry." Such areas naturally develop on a regional basis along lines of transportation which provide facilities for moving the crops in season. With truck crops the location of the producing areas, in addition to being arranged along suitable arteries of commerce, is geographically located to provide supplies of particular crops during a certain period each year—as, for example, the production of early potatoes in the United States begins in Florida and progresses, with the season up the Atlantic coast until the fall harvest of the late crop of potatoes is completed in New York and the New England States. By taking advantage of the progress of the seasons and the possibility of storing the crop, a 12-month's supply of potatoes is provided for.

Vegetables as Special Crops

In addition to this special seasonal and geographic development of crop production there is another type of vegetable production which is usually a corollary to various types of general farming. This production is primarily intended to meet the requirements for special crops, such as potatoes, cabbage, carrots, squash, turnips, celery, etc., which are required in vast quantities and which are either stored or manufactured to provide a long season supply. Many of these special crops are in the aggregate grown on a very large scale. So far as the individual grower is concerned, he plants a relatively small acreage, but the fact that these special crops are handled by a large number of growers provides the country with the necessary quantity.

The cabbage production of New York, Wisconsin, and Colorado is chiefly handled on a special-crop basis. The so-called "canning crops," including peas, beans, tomatoes, corn, etc., belong to this type of special farm crop which is grown in connection with general farm enterprises but constitute a considerable portion of the cash return from the farm. In many instances a single crop, such as cabbage, corn, potatoes, onions, or carrots, is grown. In other instances, the farm-cropping system may be made up almost entirely of a number of these special crops so chosen with reference to labor requirements that they do not interfere or cause an overburden of labor at any one season.

One of the important features that must be taken into consideration by all those who include special crops in their agricultural enterprise is to choose those crops which, so far as time and the character of labor required are concerned, do not demand maximum attention at a given time but follow in sequence of time so that the peak labor-load for one crop does not overlap that of another. As labor is frequently the major cost in the production and handling of both fruit and vegetable crops, it is imperative that the cropping system in any agricultural enterprise be made up of crops which dovetail together in such a way as to develop a fairly uniform labor requirement

throughout the growing season, and if possible, throughout the 12 months of the year.

In most areas outside the irrigated and citrus areas the amount of land suitable for setting to fruit is limited in extent by soil, topography, and location. It is further limited by the contingencies of ownership, the larger the holding the smaller the percentage of total available land likely to be found in fruit.

Determining the Size of Orchards

The size of a man's orchard depends somewhat on his capacity, his labor supply, and his other interests. The size of the orchard tends to run in units of the number of acres one man can care for outside of picking time. Where the size of the orchard is not sufficient to employ the available labor economically or where other land must be used to the best possible advantage, crop and livestock enterprises are engaged in up to the point of interference with orchard work.

The organization of the individual farm as a business unit presents many problems, the proper solution of which may largely determine the economic and civic status of the owner and all that that implies with respect to his personal welfare and that of his family. These problems of farm organization are more or less complicated, depending on the type of farming that is to be followed. The general farm with a few staple crops which are not exacting with respect to when they must be given cultural and other attention is a comparatively simple business unit. But when the more highly specialized crops are grown and the type of farming becomes intensive as contrasted with general enterprises the situation becomes complicated—increasingly so as the number of specialized crops or other enterprises on the individual farm are multiplied.

No special combination of enterprises can be recommended as each agricultural enterprise, and each environment must be taken into consideration in connection with its market and other opportunities in working out and developing the most satisfactory group of crops to use to accomplish the utilization of the time of those employed in the enterprise as well as to produce the most profit from the use of the land and the expenditure of labor.

Agricultural enterprises which are based upon a combination of several crops are, as a rule, more dependable from a financial standpoint, than those based upon a single crop. In the older and more thickly settled portions of the United States where large centers of population are comparatively numerous, and as consequence extensive local markets have developed, agriculture has become more diversified and each farm enterprise is made up of a larger number of crop activities than is the case in those regions where general farming predominates. The New England States, New York, New Jersey, Delaware, and eastern Pennsylvania, comprise a territory carrying the largest urban population of the country. As a result, general farming and cereal production have largely given way to complicated farm enterprises in which dairying, poultry raising, the production of special crops such as cabbage, onions, potatoes,

sweet potatoes, small fruits, and orchard fruits in various combinations have become dominant.

Within the span of a lifetime this territory, a portion of which was once considered the "granary of the Nation," has long since lost its prestige as a wheat and cereal growing territory and is now given over to the quantity production of apples, peaches, strawberries, canning crops, special vegetable crops, and to the dairy and poultry industries, the production of wheat and beef having moved to the extensive farming areas of the States farther west. Every agricultural region is undergoing important and often radical readjustment of its enterprises to better meet the needs of a shifting population and changing food requirements, as the country becomes less rural and more urban.

Distribution of the Farm Income

Farm income is a question of major importance in determining crop combinations in any farm enterprise. The relationship between the gross income and the net income is also of primary importance. In addition, the distribution of income throughout the year is often important from the standpoint of financing the enterprise. Fruit growing is characterized by having its gross income confined to a relatively short period of the year. This may often be supplemented by the production of vegetables, the period of income of which is more generally distributed in combinations of fruit or vegetable growing with dairying. The income from the fruit may be used to meet the major obligations while that from the vegetable and the dairying are used to carry current expenses. In a survey of 178 fruit farms in Niagara County, N. Y., in 1920, the average farm income was $1,558. After allowing for deterioration, interest, and wages for farm work done by the members of the family the farmer could count upon $301 as cash wages for himself in addition to the food, fuel, etc., for the family. In the study of the New York fruit farms the farm living is distributed between the fruits, general crops, livestock, etc. The most important sources of income, however, are apples and peaches. Some wheat, truck crops, milk, and hogs were sold from these farms. In all cases the farmer obtained food, fuel, and other perquisites from his own farm.

Another factor that must be taken into consideration is the amount of care and labor of an exacting nature that must be given the various enterprises. Fruit growing in general requires special care whereas certain of the vegetables especially cabbage and potatoes, can be handled in the same manner as general farm crops requiring less skill in their cultivation and being less exacting as to the time that they are given attention. On the other hand the spraying of apples must be done not only on the day but almost on the hour in order to get maximum results. Points of this character must be considered in the planning of any combination especially where the fruits are included.

Soil Fertility

One of the most important economic factors in establishing relationships between fruit and vegetable growing with other lines of

agriculture is the problem of maintaining soil fertility. Two methods of meeting this problem are being followed by the fruit and vegetable producers of the country. In the case of fruit growing reliance is largely being placed upon nitrates and other commercial fertilizers in combination with orchard cover crops of a soil-improving nature. With the vegetable grower the problem is more complicated, for with the diminishing supply of animal manures he has been compelled to turn more largely to other sources of plant food or readjust his operations so as to provide means for maintaining natural soil fertility. For this reason both fruit and vegetable growers have in many instances readjusted their operations to include livestock and farm crops in conjunction with fruit and vegetable production in order to provide a balanced system of soil fertility maintenance. In cases where livestock can not be included in the system, the problem resolves itself into one of a rotation of crops including those adding a maximum of organic matter to the soil. By supplementing the soil-building crops with mineral plant foods it is possible to maintain reasonable soil fertility without very great interruption in the production of marketable crops. Alfalfa has been used extensively in the orchards of the Northwestern States as a source of both nitrogen and organic matter. Cowpeas, soy beans, crimson clover, rye, and vetch have been the important orchard cover crops for the eastern sections.

There is one outstanding point to be taken into consideration in connection with the use of any crop in an orchard and that is the relation of the cover crop to the moisture supply of the trees in order that the trees may not be robbed of the necessary moisture at critical periods. In sections where irrigation is practiced this objection is not so important but should be given attention in planning any system which has for its object the maintenance of soil fertility.

In order that a satisfactory combination of stock or general farming may be made with fruit or vegetable growing it is essential that not more than 40 per cent of the available land be devoted to either fruits or vegetables. In most cases the ratio should not exceed 25 per cent and in the case of vegetables should be based on a definite rotation covering a period of four or five years. With orchard fruits a plan for definite rotation is not possible, except during the early development of the orchard. The vegetable crops that adapt themselves to best advantage in rotation where the matter of maintaining soil fertility is the main consideration are sweet potatoes in the South, and in other sections beans, peas, potatoes, tomatoes, and strawberries, all of which may be highly fertilized to the double advantage of both the truck crop and the orchard. In conjunction with these there should be planted the various summer and winter cover crops to occupy the ground at all seasons of the year and prevent the loss of soil fertility through washing and leaching.

The Distribution of Labor

Maintaining proper labor distribution where fruit and vegetable growing is combined with other farm enterprises perhaps presents the most serious factor in the organization. Where two or more

crops require the attention of the full farm force at the same time, it is obvious that at least one of them will suffer. If, for example, a farmer whose chief interest is corn growing has also an orchard or a vegetable crop and the corn requires his attention at the same time that the trees need spraying or the truck crop needs cultivation the conflict is serious. As already noted the operations in fruit growing such as spraying must be done with very close regard as to dates depending upon the progression of the season. But the corn grower or the potato grower, as the case may be, is likely to reason that the trees will still remain in condition for spraying after the corn or potatoes have been given attention. On farms where dairying is the primary enterprise with fruit or vegetable growing secondary the case is somewhat different, for the reason that the work in the dairy is more or less regular, the exceptions being the times when feed crops must be handled. For this reason a better arrangement of labor can often be made on dairy farms than on farms devoted to general crops.

Again, a farmer who is chiefly a fruit grower must consider conflicts within the possible range of the different fruits that he may grow. Perhaps strawberries, inherently adapted to the region, may be quite impracticable on a fruit farm which is extensively devoted to apples or peaches because of spraying or other orchard requirements during the harvesting of the strawberries. Summer apples and peaches are liable to conflict during the harvesting and handling of the fruit unless the varieties grown are carefully selected as to their sequence of ripening. There is, therefore, this problem of crop adjustment with respect to the labor requirement. To such an extent does this problem project itself into fruit growing that many of the large fruit growers practically disregard other crop production even to the extent of buying the greater part of the feed required for the teams used in orchard work.

The number of specialized fruit-growing enterprises has greatly inceased during the past 20 or 25 years. Specialization in fruit production may be questioned from the standpoint of the most effective use of labor and of power. In many cases such highly specialized activity has not proved fundamentally sound or economic. This, however, is doubtless a matter largely of local conditions dependent upon the availability of extra labor as it is required, and the organization of the secondary farm enterprise and other factors that are incidental rather than fundamental. The discussion here is directed mainly to pointing out certain facts that are readily obvious from even casual observation. These studies are based on three different groups. In Group 1 with less than 25% of the receipts from apples the extra labor required during the harvesting period was comparatively small. It was somewhat larger in Group 2 but in Group 3, where over 75 per cent of the income was from apples, there was required almost as many months of extra labor at harvesting time as of regular labor throughout the year. In the study made in New York the requirement for extra labor during the harvesting period was relatively small. Similar comparisons can be made for the majority of the vegetable crops, the peak labor requirement usually occurring during the harvesting period.

Selecting the Farm Enterprises

In deciding on the enterprises that shall comprise any farm unit the individual grower obviously must be guided to some extent by personal preferences, also by many factors that are local in their relationships. If fruit growing is the main enterprise, the other activities must be regulated according to the requirements of the fruit interests. Among the combinations with fruit that have been found desirable under many different conditions are dairying, stock raising of some kind, poultry raising, and vegetable growing. Not infrequently these two types of horticulture—fruit and vegetable growing—work out together very nicely. Moreover many nurserymen are also extensive fruit growers. Dairying or stock raising have an advantage over any other side lines in that barnyard manure, ordinarily difficult to obtain by purchase but of great value in fruit growing, is thus provided by the grower himself. Some fruit growers are so situated that they feed considerable numbers of beef cattle during the winter, buying the stock in the fall and selling in the spring. This may be done where it is possible for the grower to produce the necessary roughage—corn fodder and hay, perhaps alfalfa or other feed—during the summer months.

On the whole the economic aspects of fruit and vegetable production in relation to other lines of farming in the United States have not been given the consideration they deserve. Many failures in fruit growing have resulted from the neglect on the part of the promoters to take into consideration the economic relationships involved. Not only must the physical and environmental conditions be adapted to the various phases of the enterprise but the proper relationship must exist as regards the capital and labor requirements. The motorizing of power and transportation on fruit, vegetable, and dairy farms has not only increased the man power on these farms but also greatly changed the economic relationships. Further economy of labor is being obtained through the standardization of production and marketing. The elimination of all but the more important varieties of fruits and vegetables, is also a decided step in the establishment of a more systematic economic relationship on farms where two or more enterprises are combined.

NUTRITIVE VALUE OF FRUITS, VEGETABLES, AND NUTS

By CAROLINE L. HUNT, *Associate Specialist in Foods and Nutrition, Bureau of Home Economics*

FOODS ARE PRODUCED to be eaten and in the last analysis the question as to whether or not a food should be raised, and in what quantities, depends on how it fits into the wholesome and palatable diet. The human body has need of many substances and no one food provides them all. The human palate, too, makes its demands, and it seeks variety of flavor and also differences of texture, to use a term borrowed from the field of textile fabrics. The various flavors—bland, sweet, spicy, acid, savory—must be not only pleasant in themselves, but also well blended or skillfully contrasted. In the meal that satisfies the taste, there is usually a background of comparatively mild-flavored foods, such as bread, butter, cereals, and milk, and against this background and offset by it the savoriness of meat or vegetables or the mild acidity of fruits. There is also a variety of textures, including the richness of fats, the starchiness of cereals, the crispness of salad vegetables, or the succulence of fresh fruits.

It is misleading, therefore, when the subject of the adequate diet is under discussion to consider any one food or class of food materials by itself and out of relation to others. And when many foods of many kinds and many compositions are considered the question of how they all go together from the standpoint of taste as well as from that of body building and health must always be kept in mind. There unfortunately is, or has been in the past, a tendency on the part of students of nutrition to underestimate the importance of palatability, individual preferences, and family customs. This has retarded a very much needed reform, which, if accomplished, would substitute for the more or less hit-or-miss method of selecting foods now in practice, a systematic plan based on the needs of the human body and consequently on the reasonable demands of trade.

The subject of this chapter is the nutritive value of fruits, vegetables, and nuts, foods which differ so widely among themselves that

it is difficult to consider them under one head. In fact, classifications of food materials made by producers and distributors are seldom useful to consumers who must of course consider foods in their relation to the needs of the body. For illustration, milk, cheese, and butter are often grouped together and called dairy products, but from the standpoint of nutrition, milk and cheese are efficient protein foods, whereas butter serves entirely different purposes.

The Make-up of Meals

The process of classifying and grouping products in accordance with the needs and demands of consumers for the purpose of directing production and reducing waste has been slow, partly no doubt because many foods are of complex composition and may be used for many purposes. Delay has been due partly, also, to confusion between the demands of the palate which often determine the make up of meals, and the real needs of the body. This conflict is not, to be sure, so great as it often seems for many food customs have probably been formed in response to instinctive requirements of the body. For example, in the early days of this country people went to considerable trouble to gather wild herbs and greens of various kinds, but not until very recently was it known that these foods provide an important dietary principle necessary for health. In the light of recent studies on the nature of protein it seems probable, too, that the very common custom of serving a small quantity of meat with beans may represent an instinctive effort to make the dish satisfactory in the matter of the quality as well as the quantity of protein it provides.

In a less fertile and prosperous country the instinctive demands of the human body might finally have led to the custom of satisfying body needs by means of simple, palatable meals in which each requirement of the body was satisfied by one or at most two foods. As a matter of fact, it is not in the least unusual for a meal to provide several animal protein foods—meat, milk, and eggs, perhaps; several starchy foods such as bread, macaroni, and potatoes; and several fat foods—butter, cream, and bacon. This custom often involves waste not only of materials but also of the housekeeper's time and energy, but the tide is turning. As the result of cooperation among physiologists, food chemists, students of home economics, practical dietitians, and home makers, there is coming to be a demand for the production of foods in the proportion in which they are really needed. This program must proceed of course from a classification of food materials in accordance with the demands of health and taste.

Taste demands a certain proportion between starch, sugar, and fat in a meal. If starch is present in excess, the food is likely to be dry and tasteless unless condiments are used to an undesirable extent. An undue proportion of sugar and fat characteristic of the so-called "rich" foods or meals soon palls on the appetite. It happens that in vegetables as a class, as in cereals, the largest though not the most important ingredient is starch. In fruits as a class, as in sirups, honey, and candy, the largest ingredient is sugar. In most nuts, as in cream, bacon, and chocolate, the predominating

nutrient is fat. Good meal planning, therefore, suggests that vegetables be considered in connection with the other chief sources of starch, the cerals; that fruits be considered with sweets; and nuts in connection with other fat-carrying materials used to enrich our meals.

In seeking a proper balance between cereals and vegetables, sweets and fruits, nuts and other fat foods, many points including cost, time needed for preparation, flavor, texture, and nutritive value must be taken into consideration.

Needs of the Body

It is apart from the purpose of this chapter to discuss in detail the subject of nutrition and dietetics. Important researches are being carried on and new facts may be discovered at any time. The best that can be done is to enumerate the various foods required by the body and to indicate the trend of investigations. The requirements of the body besides those that come under the head of taste are protein which must be of the right kind and of sufficient quantity; mineral substances, calcium, phosphorus, iron, and others; certain dietary essentials usually called vitamins; and bulk.

The Need for Fuel

Of all the needs of the body that for fuel and energy is best understood in its quantitative relations. The fuel value of all common food materials has been determined and the needs of individuals of different ages and occupations are known. The average adult requires about 2,700 calories per day and the average or census family, which is supposed to consist of father, mother, and three young children, from 10,000 to 12,000 calories a day. From these facts it is possible to estimate somewhat closely the calorie requirements of the Nation and, in fact, of the world.

Fresh fruits and vegetables are of low fuel value, a fact which at first thought seems to be against them. In reality the low fuel value of fruits and vegetables constitutes a very great advantage and an almost unanswerable argument for their greater use. The fuel value of fresh vegetables varies from less than 100 calories per pound in the case of such foods as lettuce and cucumbers, to about 450 in the case of sweet potatoes, shelled peas, and sweet corn cut from the cob. The fuel value of fruit varies from about 60 in the edible portion of melons to about 350 in bananas and plums. In the Bureau of Home Economics it has been estimated that in the long run, when, for example, the food supply for a family for a week or a longer period is under consideration, it is safe to count on about 240 calories per pound from fresh fruits and vegetables in the variety in which they are used in most families and in the form in which they are usually purchased. Cereals, on the other hand, average about 1,600 calories per pound. The fuel value of sugar is 1,800, of butter 3,400, and of fats like oil and refined lard, over 4,000. A glance at these figures will show what most people know by experience that in the allowance of 2,700 calories, a person can easily eat 2 or 3 pounds of fresh fruits and vegetables and still leave a large margin for other needed materials. The only common food materials that can be used

in quantities comparable with fresh fruits and vegetables is milk which has a fuel value of about 300 calories per pound.

It follows from these facts that so far as human capacity for food is concerned, it is possible to use the fruits and vegetables either in very small or in very large quantities. For example, it is quite a common occurrence for people to double or even treble their allowance of these foods without inconvenience. A correspondingly great change in the quantity of cereals, fats, sweets, or meats would, of course, be entirely out of the question. It follows also that if any particular fruit or vegetable is proved to be an important source of some very essential nutrient, iron for example, or vitamins, it is possible to increase the daily allowance of that food almost indefinitely. Low fuel value or succulence may therefore under some circumstances be considered an advantage, for it makes a food or group of foods adjustable to special needs.

Protein

A second requirement of the body is that for protein which furnishes materials that are constantly needed by the tissues. Protein requirements can not be stated except within wide limits, for the various foods in common use differ not only in quantity but also in the kind of protein they furnish, and the proteins of some foods serve far more efficiently than others. It is generally estimated that at least 10 per cent of the total fuel of the diet should be furnished by protein and that more than 13 per cent is never really needed even when most of the proteins are inefficient. These percentages correspond with allowances of from 75 to 90 grams in the 3,000-calorie, or as it is usually called, the per-man-per-day ration, and to from 68 to 82 grams in the daily diet of the average adult.

Fresh fruits and vegetables are often considered mere accessories to the diet. Even those who appreciate their importance as sources of vitamins and minerals seldom realize their value as protein foods. Studies of family food supplies made or analyzed by the Bureau of Home Economics show that nearly half of the total protein is usually supplied by animal foods, such as meat and other flesh foods, milk, cheese, and eggs, and that by far the greater part of the remainder is furnished by bread and other cereal foods. Even in farm families the total protein supplied by fresh vegetables and cereals seldom exceeds 20 per cent of the total.

There is nothing in the composition of vegetables, even when they are fresh, to prevent them from being depended upon for a considerable portion of the needed protein. On page 137 there is a table showing among other things the percentage of protein calories to total calories in 20 familiar vegetables, including potatoes, roots, greens, and also succulent salad vegetables such as radishes and cucumbers. The average percentage of protein calories in these vegetables is 17, which is considerably higher than the requirement of the diet as a whole. It is true that such vegetables are seldom used in equal proportions. Potatoes with their 11 per cent of protein calories often exceed all other vegetables put together, but even under these circumstances the percentage of protein calories in the vegetables of a family food supply seldom falls below 13, which is

slightly higher than the average of protein calories in bread and other cereal foods.

For some purposes the amount of protein per pound is more illuminating than the percentage of protein calories. In the edible portion of the 20 vegetables mentioned the average quantity of protein is about 10 grams to the pound, as the table shows. Even when potatoes are used in larger proportions than other vegetables, the protein seldom falls below 8 grams to the pound. These figures are significant in view of the fact that few people need more than 70 grams of protein a day.

What has been said about the possible usefulness of vegetables as a means of introducing protein into the diet applies, of course, to the vegetables themselves, and not to these foods as they often appear on the table combined with more or less fat or with rich sauces. Those who wish to increase the use of vegetables as sources of protein or for that matter of vitamins, bulk, or minerals, should give careful consideration to the form in which they are served. Raw vegetables, such as celery, lettuce, and cucumbers, can be eaten alone or with just the addition of salt, whereas others such as carrots that are usually cooked can be eaten raw, particularly if they are young and tender. In general, simple methods of cooking and serving are best.

TABLE 1.—*Protein in the edible portion of vegetables*

	Fuel value per pound	Protein per pound	Number of protein calories per pound	Percentage of protein calories to total calories
	Calories	*Grams*		
Asparagus	105	8.2	33	32
Beans, string	195	10.4	42	23
Beans, Lima	575	32.1	128	22
Beets	215	7.3	29	14
Cabbage	145	7.3	29	20
Carrots	205	5.0	20	10
Cauliflower	140	8.2	33	10
Celery	85	5.0	20	23
Corn	470	14.1	56	12
Cucumbers	80	3.6	14	19
Lettuce	90	5.4	22	25
Onions	225	7.3	29	8
Parsnips	300	7.3	29	10
Peas	465	34.7	139	28
Potatoes	385	10.0	40	11
Potatoes, sweet	570	8.2	33	6
Radishes	135	5.9	24	18
Spinach	110	9.5	38	12
Tomatoes	105	4.1	16	16
Turnips	185	5.9	24	13
Average	239	9.8	40	17

Dried vegetables, particularly legumes, are recognized as sources of protein and every community has its characteristic form. Baked pork and beans is a favorite dish of the older portions of the Northern States. Cowpeas boiled with meat are a staple food in many parts of the South, and highly spiced combinations of pinto beans or frijoles, such as chili con carni, are used where Spanish or Mexican influence has been felt. In dried beans the protein calories seldom represent less than 23 per cent of the total calories, which means that the protein is seldom less than 104 grams per pound.

Vegetables Lack Efficient Protein

It is true that none of the vegetables mentioned supply that form of protein which is considered complete or efficient. All lack certain constituents needed to make body protein, and for this reason must, as a rule, be supplemented by animal protein foods. The one vegetable food that supplies complete protein is the soy bean. The peanut, which in spite of its name is not a nut but a legume, is now believed to furnish protein which falls short of completeness only through the lack of certain substances that are found in the protein of wheat, and since wheat in one form or another is seldom absent from the American table, the peanut, like the soy bean, may be thought of as a protein food interchangeable in the diet of grown people with meat, milk, and eggs.

Because of the character of their protein, peanuts and soy beans hold unique positions among vegetable foods. In a sense, too, they are exceptional legumes, for, unlike beans, peas, cowpeas, and lentils, they are fatty and not starchy. In soy beans, the weight of the fat is half as great as that of the protein and in peanuts it is 50 per cent greater in quantity. Therefore, soy beans correspond roughly in fatness with the leaner cuts of beef, such as the round, and peanuts with medium-fat cuts such as the loin. It follows from this that it is not necessary to use much, if any, fat in the preparation of these foods for the table, as it is in the case of the starchy legumes. Soy beans, like most other fatty foods, taste best if eaten with acids of some kind, and tomato juice is often used in their preparation. The same principles apply to peanut combinations. Butter in the preparation of peanut sandwiches is superfluous so far as richness is concerned, and serves to reduce their percentage of protein and therefore their value as protein foods. It is better from this standpoint, as well as from that of taste, to mix the peanuts with a highly-seasoned tomato sauce such as that known as chili sauce.

Peanut-butter soup is a substantial and economical dish similar in nutritive value to the bean and pea puree that were important articles of diet in the early days of this country, and still remain popular. Unlike these soups it can be very quickly prepared, for it is necessary only to dilute the peanut butter with water or tomato juice and to flavor it. If water is used, lemon juice may be added to give zest. Because of the ease and quickness with which it may be prepared, peanut-butter soup is a convenient emergency dish which is to be recommended for use not only in households, but also in the many recreation camps that are springing up all over the country.

Fruits and nuts are not so valuable as vegetables for providing protein. In fruit the percentage of protein calories is about 6 and in nuts about 8. The special uses of these two groups of foods are considered later.

Potential Bulk or Volume

Fruits and vegetables always tend to give bulk to the food residue as it passes through the body. If fresh or undried, they are themselves bulky. A 100-calorie serving of potato is about 5 ounces; of bread, 1⅓ ounces. A 100-calorie serving of orange is about 7 ounces

(the edible portion of a good-sized orange); of sugar, less than 1 ounce. There is also a tendency for these foods to retain their bulk as they pass through the body, for they contain cellulose which is not as a rule digested or absorbed and which tends to hold and even to take up water. Dried fruits and vegetables, though not bulky as purchased, absorb water during preparation for the table and approach in bulk the fresh product.

A certain minimum volume in the food residue of normal healthy people is needed as a means of preventing constipation and for the maintenance of this volume fruits and vegetables are almost indispensable. It is true that whole-grain cereal foods and bran give bulk and that when fruits and vegetables are not obtainable in abundance can be depended on for this purpose. But when some whole-grain cereals and some refined cereals are eaten and in addition fruits and vegetables are used freely and in variety, the diet is to the taste of most people far more attractive. It should be remembered, too, that some of the more delicately flavored fruits and vegetables, such as fresh berries and peas, taste better with white bread or other refined cereal foods than when eaten with coarse cereals which have a more pronounced flavor. In the ideal diet, therefore, in which taste as well as physical well-being is taken into consideration, it is well to throw the responsibility for bulk largely on the fruits and vegetables.

What has been said about fruits and vegetables as a means of giving volume must not be taken as desirable in all cases of constipation. Chronic constipation is usually due to some form of disease and calls for expert medical attention. In some cases bulky foods do more harm than good. No advice given by a layman is, therefore, to be considered safe.

Alkaline Reserve

The tissues of the body are alkaline and health demands the maintenance of what is usually called an alkaline reserve. Eggs, meats, and flesh foods in general tend to reduce this reserve; milk, fruits, and vegetables increase it; cereals have little effect one way or the other. Fortunately, the body has power to maintain its alkaline reserve even if the tendency of the food is to reduce it. Most authorities believe, however, that it is best not to depend too much upon this power of the body, but to maintain the balance between the acid-making and alkaline-making foods. This means that when meat and eggs are used as the chief source of animal protein, vegetables are needed to offset their acid-forming tendencies, a function which bread and other cereals can not perform. The exact proportions in which meat and vegetables should be used can not be stated, but it is well to be on the safe side and use fruits and vegetables in abundance.

Mineral Substances

Many foods other than fruits and vegetables provide minerals, some being very rich in them. Fruits and vegetables may, however, be considered absolutely necessary for the purpose of keeping up the required supply of mineral substances. It has long been considered probable by experts in nutrition that this was the case, and

statistics gathered by the Bureau of Home Economics seem to remove all doubt, for they show a definite relationship between failures to use fruits and vegetables freely and deficiencies in minerals in the diet. It appears, however, from these statistics that the reasons for this relationship are seldom correctly stated. It is often said, for example, that fruits and vegetables are richer in minerals than are other food materials. A statement of this kind which concerns a large number of foods differing greatly among themselves is hardly worth taking seriously, and yet it is so often made that it may be worth while to point out a few of its weak points. Milk and cheese are more useful in supplying calcium than are any of the vegetables. They can in fact easily be used in such quantities as to completely satisfy the need for this element. Lean and medium fat meats and eggs compare very favorably with many of the fruits and vegetables as sources of iron, and whole-grain cereals and many animal foods are important as sources of phosphorus.

It is often said, too, that the required quantities of the mineral substances of various kinds can not be obtained without the use of fruits and vegetables. This statement is also in error. It would be quite possible to use milk, cheese, eggs, flesh foods, and whole-grain cereals in such proportions and quantities as to supply all needed minerals, but this does not represent prevailing food preferences and habits. The fact is that most people eat a certain quantity of sugar and of butter or other fats, foods which add greatly to fuel value without contributing anything to the needed minerals. It is, therefore, with a combination of foods including not only cereals, milk, eggs, and meat, but also the fat and sugar usually eaten with them that the fruits and vegetables are to be compared. This combination of foods varies greatly, of course, with food habits, but it is safe to say of it in general that its percentages of calcium, phosphorus, and iron are all lower than required in the diet as a whole and that they can always be raised to the needed quantity by the use of fruits and vegetables properly selected and prepared.

It is estimated in the Bureau of Home Economics that when fruits and vegetables are used in variety and in quantities sufficient to provide 20 per cent of the fuel, corresponding with 600 calories out of the 3,000 needed per man per day, none of the minerals are likely to fall below the required quantity unless the remainder of the diet is one-sided to an unusual degree. This corresponds with at least five 100-calorie portions a day in the case of the average adult and at least eighteen 100-calorie portions in the case of the typical family consisting of a man, a woman, and three young children. This allowance represents the quantity of fruits and vegetables themselves and does not include any butter, sugar, or sauces that are added. It presupposes, too, that the food supply as a whole has been wisely chosen and that mineral-saving methods of cooking are employed.

The number of 100-calorie portions per pound is given in other publications of the department.[1] It will be sufficient here to give the value of average helpings of a few varieties. A potato of average size (about 5 ounces), 100 calories; a sweet potato (small), 100 calories; apple (large), 100 calories; one-half grapefruit, 100 calories; strawberries, one-half pint, 50 calories; asparagus, a large

[1] U. S. Dept. Agr. Farmers' Bulletin 1313, "Good Proportions in the Diet."

serving (one-quarter pound), 25 calories; lettuce, four leaves (about 2 ounces), 10 calories; cooked spinach, one-half cupful, 20 calories; peas, shelled, one-half cupful, 70 calories; tomatoes, stewed, one-half cupful, 25 calories.

It follows from what has been said that the quantity of various minerals may greatly exceed the actual need. Fortunately, there is no danger from this source. In the diet of those who get most of their efficient protein from milk or cheese, calcium often far exceeds the quantity needed without that obtained from fruits and vegetables. This is often the case in the diets of children who take the quantity of milk now considered necessary; in the diets of grown people who prefer milk and cheese to eggs and flesh foods; and in the food supplies of households in which, for the sake of the children, a large quantity of milk is used for general cooking purposes. On the other hand, in the diet of persons who prefer meat and eggs to milk and cheese and who use whole-grain cereals chiefly, the use of the allowance of fruits and vegetables recommended may have the effect of introducing a 50 per cent margin of safety in the case of iron. This last-mentioned fact may be of interest in connection with disease. There is no reason to suppose that lack of iron alone is the cause of anæmia, but one of the recognized factors in correcting this abnormal condition is an excess of iron in the food. In procuring such an excess, fruits and vegetables are important because if properly prepared they serve to tempt the appetite.

Far larger quantities of fruits and vegetables than those which make up the allowance recommended as a general guide can, of course, be safely used. Special cases which call for larger quantities or for special selection among the different varieties are as follows:

The greater the proportion of refined cereals to whole-grain cereals, the greater the need for fruits and vegetables. This is true of the diet of individuals and also of the food supplies of different sections of the country. In some of the Southern States little cold bread is used and the popular hot bread usually calls for refined flour. In such places fruits and vegetables are greatly needed and because of climate and soil fortunately can be easily produced in variety and abundance.

When milk or cheese forms the protein basis of the diet, special effort must be made to obtain iron from fruits and vegetables. This applies to children who under normal conditions get most of their efficient protein from milk, and also to grown people who for one reason or another depend more on milk and cheese than on meat, fish, poultry, and eggs. As a source of iron, spinach stands in a class by itself. Other green-leaf vegetables such as lettuce and dandelion greens are also important. Potatoes, though containing far less iron per pound than the vegetables mentioned, help to keep up the required amount of this element because of the quantities in which they can be used. A medium-sized potato, 5 ounces, contains about as much protein and starch as a large slice, 1⅓ ounces, of Graham bread or an ounce of whole-grain cereal, but it supplies 50 per cent more iron providing, of course, it is either baked or cooked in some mineral-saving way. This is a good point to remember in feeding children.

Of the fruits, strawberries and huckleberries are richest in iron, but all fruits, particularly when they can be made to take the place of other sweets, are to be recommended. Raisins may be added to breakfast cereals or to puddings as a means of sweetening them. In general, dried fruits are most useful for sweetening purposes if they can be softened without the addition of much water. A good brand of prunes can be satisfactorily cooked as follows: Pour over them just enough cold water to cover, bring the water to the boiling point, cover closely and allow to cool. Prunes so prepared and served with lemon juice have much the quality of fresh fruit and if thoroughly chilled make a refreshing dish in which the percentage of iron to total calories is not lowered by the addition of sugar. Dates, figs, raisins, and nuts, in equal proportions by weight, and finely chopped make a good sweet which is rich not only in iron but in other minerals. The mixture can be rolled into balls, or cut into caramel-shaped pieces and dipped in sugar to reduce the stickiness of the surfaces, or it can be spread on bread. If graham bread is used such sandwiches are a good means of introducing iron into the diet.

When, as often happens in the case of adults, the protein basis of the diet consists chiefly of meat, fish, and eggs, and little milk and cheese are used, fruits and vegetables must be eaten freely or especially chosen to insure calcium. In this case there is no alternative as there is when iron or phosphorus is concerned. In the latter cases whole-grain cereals help, but such cereals are almost as poor in calcium as are the refined cereals. It is somewhat misleading to class eggs and meat in this connection, for eggs contain more calcium than meat, though far less than milk. It is the milkless and eggless diet that is most likely to fall low in calcium.

When extra calcium from vegetables is sought, beans (navy, kidney, and Lima), peas, cowpeas, and lentils, and also turnips, carrots, and parsnips are all more useful than potatoes. Baked beans, bean or pea purees, meat and bean stews, stews made with a little meat carefully browned to develop flavor and combined with large quantities of the savory root vegetables are all helpful. Richer even in lime than the vegetables mentioned are Swiss chard and cauliflower, provided, of course, they are properly cooked. Those who use little milk and cheese can bring up the percentage of calcium in the diet also by using fruit juices, particularly orange juice. Rhubarb contains more calcium than oranges but when sweetened sufficiently to taste good is not so useful.

Since milk, cheese, eggs, meat, and cereals, as well as fruits, nuts, and vegetables contain phosphorus, there is little danger that this element will be lacking. It is, however, occasionally found to be too low for health, particularly in the diet of the poor. When fruits and vegetables are lacking, it is natural to try to make meals attractive by serving rich and sweet foods, but such foods used to the exclusion of fruits and vegetables always tend to lower the phosphorus as well as the iron and the calcium. This is an argument for the use of dried fruits and vegetables when fresh ones can not be afforded and for preserving both fruits and vegetables in times of plenty for use in times of scarcity. In the absence of such foods it is quite possible to depend so much on sugar and fat as to bring even the phosphorus down below the real need.

Vitamins

This is not the place to discuss the nature of vitamins nor the question as to how many vitamins there are. Suffice it to say that the diet must regularly supply certain substances to which the name vitamins has been given. Without vitamins, development is sure to be impaired and in later life the body is likely to fall prey to certain specific ailments. Vitamins do not apparently originate to any extent in the animal body but must be obtained from plants. They are introduced into the human body either directly through the agency of vegetable foods, or indirectly through the agency of foods furnished by animals that have been fed on vitamin-rich substances.

Vitamin A, which is often called the growth-promoting vitamin, is found in all green leaves, including grass and other green feeds as well as lettuce, spinach, and other leafy plants used for human food. Having been taken into the body it tends to associate itself chiefly with the fat of the body and particularly with the fat of actively functioning organs, such as the liver and the kidneys. For this reason it is sometimes called the fat-soluble vitamin. Milk and eggs are among the most important sources of vitamin A. When milk is separated, vitamin A tends to follow the fat. It is found, therefore, more abundantly in whole milk, cream, butter, and whole-milk cheese than in buttermilk and skim-milk products. The yolk of the egg which contains 95 per cent ofd all the fat of the egg, also contains practically all of the vitamin A.

As stated elsewhere, the fact that people have always taken considerable trouble to get greens seems to indicate that these foods filled a need that was felt long before it was understood. Recent investigations show that the complete absence of vitamin A leads to the disease of the eyes called ophthalmia. Since few diets, particularly in this country, are wholly lacking on the foods that supply this vitamin, interest centers more on the results of its deficiency than on those of total absence. Deficiency is now believed to result in lowered resistance to infectious diseases. Considering the suffering, retarded development, and loss of time from work caused by such diseases, even in their less serious forms, it seems wise to keep on the safe side in the matter of introducing Vitamin A into the diet. For this reason those who are able to do so use not only milk and its products and eggs, but also green-leaf vegetables abundantly.

At certain times of the year edible green leaves may be found growing wild. Varieties differ with the region. In almost every part of the country the green tops of vegetables known as "fleshy" roots may be obtained. These include turnip tops, a staple green in the South, and also beet tops and radish tops. In most cases it is necessary, however, to raise vegetables for the purpose of supplying greens for the table. One of the easiest greens to raise is cabbage. The green leaves of this vegetable have a greater value than the white leaves.

Few people realize that mixed greens make a palatable dish. For example, spinach, celery leaves, and onion tops go well together. Such greens as radish and celery tops, and the outer leaves of lettuce

are seldom available in large enough quantities to make a dish by themselves, but they can be satisfactorily combined with the more usual greens like spinach and kale, thus making the total amount of the dish much larger.

The potency of vitamin A is gradually reduced by ordinary cooking processes. For this reason, methods of cooking greens and other foods containing this vitamin have been revolutionized of late. Cabbage, spinach, and similar foods should be cooked only long enough to make them tender and not enough to shrivel them. They should not be cooked with meat, for the time of cooking should be determined by the vegetable itself and not by any added material.

Vitamin B is the most widely distributed of all the vitamins. It is found in almost all foods with the exception of refined sugars and fats. It is more abundant in whole grain than in refined cereal products. The total absence of this vitamin causes a disease called beriberi, not known in this country. A deficiency results in impaired appetite and digestion.

The fact that vitamin B is not found in most sweets and fats, and is less abundant in the refined flours usually used in preparing desserts than in the whole-grain cereals may constitute one of the chief objections to overrich diets. Fat, sugar, and white flour are not in themselves harmful, but they have very high fuel values and if eaten too freely may crowd out other foods needed for vitamin B. No particular dish or class of rich dishes or desserts is to be excluded or unreservedly condemned. In general, however, it is safer to select food materials in correct proportions and to let these determine the richness of meals, than to follow the opposite practice of deciding on the character of the meals to be served and letting these determine the food materials to be chosen. Good proportions among the various kinds of food materials—efficient protein foods, cereal foods, sweets, vegetables, and fruits—are given in another publication of the department.[2] These are not to be taken as fixed rules but rather as guides. It is suggested in the publication referred to that fruits and vegetables be used in such quantities as to supply at least 20 per cent of the total calories and that fat and sugar not be allowed to supply over 30 per cent. If these proportions are followed it is almost necessary to adopt simple methods of preparing and serving fruits and vegetables. The effect of elaborate methods of cooking on proportions of food material is indicated by the fact that a 100-calorie portion of a creamed vegetable or of fruit shortcake or pie seldom supplies more than 20 calories of fruit or vegetable, the remaining 80 calories being in the form of butter, sugar, or flour. An undue proportion of rich dishes makes it impossible to introduce the required quantity of fruits, vegetables, and other foods necessary to supply the necessary amount of vitamin B.

Vitamin C is of special interest in connection with the subject of this chapter. It is far less widely distributed than are vitamins A and B and is found chiefly in fruits and vegetables. It is often called the antiscorbutic or antiscurvy vitamin because when it is wholly absent from the diet scurvy is almost sure to result. This dread disease like ophthalmia and beriberi is practically unknown in this

[2] U. S. Dept. Agr., Farmers' Bul. 1313, "Good Proportions in the Diet."

country and in fact is not prevalent at present in any part of the world. Its tragic history is associated with the lives of sailors who in the past were obliged to pass long periods without fruits and vegetables. It is now believed, however, as a result of animal experimentation, that bodily afflictions resembling scurvy, but not nearly so serious, can result from deficiency of vitamin C. Such afflictions in childhood may lead to imperfect development. Fortunately, this vitamin is found chiefly in foods of attractive texture such as lettuce and cress or those of very pronounced and pleasing flavors such as oranges, lemons, and tomatoes. These foods, because of their succulence and low fuel value, can be used in either large or small quantities.

Every housekeeper knows ways of serving oranges, lemons, grapefruit, and tomatoes in comparatively large quantities. Tomatoes are eaten raw, stewed, baked, fried, broiled, or scalloped and are made into sauces for use on meat, fish, boiled rice, and other dishes. Oranges are eaten as such or made into orange ice or jelly. It is well to keep in mind also, the ways in which these foods can be introduced into meals in small quantities so that the supply will be regular even if it is not large. There are few meat soups or stews or gravies that are not improved by a little tomato juice. A little orange can be introduced by folding a sliced orange into an omelet or by means of an orange "trifle," a dish consisting of custard and sliced orange in varying proportions. Orange juice can be served also as an ingredient of pudding sauces and cake fillings and icings.

Lemon juice, like pickles and catsup, may be used as a condiment and seems to go especially well with fish. To get the benefit of the juice the lemons should be used in such a way that they can be conveniently handled at the table. If they are used as an ornament or garnish they are likely to become greasy and therefore it is better to serve then on a separate dish and in such form that all their juice can be extracted and used.

As yet no chemically quantitative method has been devised for measuring the vitamin content of foods, though progress is being made in this direction. In the absence of exact information on this point it has been recommended by the Bureau of Home Economics that a certain percentage of the total fuel of the diet be regularly supplied from those foods that are known to be particularly useful in supplying vitamins.

It is well in the case of adults to see that at least one-sixth, or 16 per cent, of the total calories be selected from the foods that are rich in vitamin A—that is, milk, cream, butter, eggs, and green-leaf vegetables.

Since vitamin B is very widely distributed, and not much affected by heat, it is not so likely to be absent from the diet as either A or C. A good way to insure this vitamin is to keep the fats, the sugars, and other sweets and refined cereals within limits of approximately 40 per cent of the total calories.

Vitamin C, besides being less widely distributed than the vitamin A and B, is in most cases far more easily affected by heat. There is a conspicuous exception to this rule in the case of tomatoes. Cooked and even canned tomatoes are nearly as good a source of vitamin C as raw tomatoes. It is recommended in the Bureau of Home Eco-

nomics that from 1 to 2 per cent of the total calories of the diet be selected from foods especially rich in vitamin C. It is true that potatoes, if used in abundance, supply enough of this vitamin. The regular use, however, of such foods as tomato, lemon, and orange juices, and raw green-leaf vegetables may be considered a precautionary measure in view of the fact that the other articles of diet vary, cereals being sometimes used in place of potatoes. Since the value of vitamins is more or less reduced by cooking processes, it follows that care should be exercised in preparing as well as in selecting foods.

Saving Minerals and Vitamins

When vegetables are cut into small pieces they cook quickly and require comparatively little water to cover them. In the Bureau of Home Economics the method known as "panning" has been devised. It consists in cutting vegetables into small pieces and cooking them in a flat pan on top of the stove with a minimum of water to which a little fat has been added to prevent the vegetables from sticking to the pan. When so cooked there is a tendency for the water to evaporate and it is often unnecessary to pour any of it off. If carefully carried out, this process often makes it possible to add milk without making the cooked vegetables too moist. The finished product then contains all the minerals of the vegetables and also of the milk and is more valuable for vitamins than if the cooking had been longer continued. The perfecting of this general method as applied to particular vegetables calls for skill, but the results warrant the expenditure of thought and care on the part of those who value vegetables and wish to make the most of their health-giving properties.

Vegetable Meals

The "vegetable plate," which consists of three, four, or five different vegetables served on a large plate having several compartments, has become popular in some restaurants and dining cars. It might occasionally be used in the home to replace the more common dinner of meat and vegetables. On the home table the vegetables would usually be served from separate dishes on ordinary plates but the points that should be observed if these vegetable meals are to be made popular are everywhere the same. The ordinary dinner of meat and vegetables provides as a matter of course a considerable variety of flavors and textures. Care must be taken that the vegetable meal provides the same variety of flavors and textures as the more usual meal of vegetables and meat.

So far as flavor is concerned, a good combination is one mild flavored vegetable such as potatoes or Lima beans; one vegetable of pronounced flavor like cauliflower, cabbage, or onions; and one which is either sour itself or which like spinach or beets is ordinarily served with vinegar.

Variety in texture can be obtained by having one vegetable with a crisp crust like corn fritters or scalloped tomatoes with a layer of well-browned crumbs; a second vegetable served with white sauce, and a third simply cooked in water, as peas or string beans are

usually cooked. A raw vegetable, such as celery or radishes, lends still further variety.

The matter of protein must also be kept in mind. As a rule, one of the vegetables should either be beans or peas, which are comparatively rich in protein, or one served with some food rich in protein such as cauliflower or potatoes scalloped with cheese. Spinach with hard-boiled egg, or sweet corn pudding made with milk and eggs, would also answer this purpose. The addition of white sauce to a vegetable also increases the amount of protein.

Food Value of Nuts

Fat is by far the largest ingredient in most nuts, though there are important exceptions, such as chestnuts. Fat so far exceeds protein in the oily nuts, which include almonds, pecans, walnuts, hickory nuts, filberts, and others, that it is practically impossible for the average person under ordinary conditions of living to get sufficient protein from them without an excess of fat in the diet. Under most circumstances, it is better to consider nuts as sources of fat rather than of protein, and to use them interchangeably with other fatty foods such as butter, oils, and bacon. If instead of being recommended as sources of protein, nuts were classed as fatty foods, they would be brought into comparison with pure fats which supply no protein, minerals, or vitamins, and their advantages would be more apparent. Fat in the diet as a whole should not exceed protein by more than 50 per cent in order to suit the taste of most people. Almonds, which are one of the least fatty of the nuts, contain two and one-half times as much fat as protein, there being five or six times as much fat as protein in most other nuts.

The uses of nuts may be grouped under three heads:

1. *As food accessories.*—Nuts are often served either alone or with dried fruits as a second dessert, or in salted form between courses as appetizers. They are frequently added in small quantities to cakes, cookies, and salads. When so served they are seldom eaten in sufficient quantities to affect the mineral content of the food as a whole to a significant degree.

2. *As emergency rations.*—Nuts supply so much body fuel in so compact and so attractive a form that they are peculiarly well suited for the used of "hikers" or mountain climbers or others who are expending large amounts of energy and who wish to travel light. For such persons the large amount of fuel from fats and carbohydrates as compared with that from protein is not a disadvantage and the minerals in the nuts are a great advantage. A pound of oily nut meats supplies approximately 40 per cent of the protein needed by a man each day, 60 per cent of the phosphorus, and 30 per cent of the calcium and iron. When provision is to be made for one or two meals, nuts and dried fruits as such, are often used. In case of long trips greater variety may be wanted, and under such circumstances canned steamed puddings or fruit cakes have in the experience of travelers in this and other countries proved very useful. In making such puddings nuts can be used to supply most of the fat and dried fruits the greater part of the sugar. This gives

the dish a far greater value from the standpoint of minerals than if enriched by pure fat and sweetened with sugar.

Canned fruit and nut puddings are specially suited for the use of travelers in places where there is danger of contracting dysentery or other diseases carried by water or transmitted by insects, for, besides being palatable and concentrated, they have the advantage of being protected from contamination up to the moment in which they are to be eaten.

3. *As the chief fat in cakes and salads.*—In places where nuts are raised and can be obtained at small cost it may be a means of economy to use them in large quantities in place of other fat foods. A pound of shelled nuts of the oily kinds supplies about two-thirds of a pound, or 1⅓ cupfuls of fat. It is equal for shortening or enriching purposes; therefore, to 1¼ cupfuls of olive oil, or 1½ cupfuls (three-fourths pound) of butter. In the Bureau of Home Economics, light cakes of the richness of ordinary cup cakes have been made with nuts as the only fat, no milk, butter, or egg yolks being used. Since nuts, even those of the same variety, differ in composition, no set rules can be given, but the following proportions may be taken as a guide: Shelled nuts (hickory, pecan, walnuts, filberts, or others), 8 ounces; flour, 3 cupfuls; salt, 1 level teaspoonful; soda, one-fourth level teaspoonful; baking powder, 4 teaspoonfuls; sugar, 1½ cupfuls; water, 1⅓ cupfuls; whites of 4 eggs. The nuts should be put through a food chopper with part of the flour to absorb the oil which otherwise might be lost. Except for this precaution there is nothing peculiar about the method of mixing. It may be necessary to increase the water or the flour a little, but that can be determined by baking a small sample. It is well to bake such cakes in muffin tins for this gives a maximum of crust which is particularly palatable in cakes enriched by nut fat.

Nuts, if finely chopped or reduced to the consistency of peanut butter, can be used in place of oil in salad dressings and in the place of butter in pudding sauces. In club sandwiches finely chopped nuts may be substituted for the bacon and oil.

Summary

There is only one nutrient—that is, efficient protein—of which fruits, vegetables, and nuts can not supply by far the greater part in the diet. Soy beans and peanuts are the only vegetable foods that can be thought of as supplying complete protein.

For the purpose of supplying protein not classified as complete or efficient, vegetables are more useful than generally supposed. As a class vegetables have a slightly higher percentage of protein calories than cereals.

In vegetables as a class the largest ingredient is starch; in fruits, sugar; and in nuts, fat. For purposes of meal planning it is logical, therefore, to consider vegetables in connection with cereals, fruits with sweets, and nuts with such exceedingly fat foods as cream, chocolate, and bacon.

Raising the proportion of fruits, vegetables and nuts to refined cereals, sugar and pure fats (other items being the same) tends to increase the bulk, minerals, and vitamins of the diet.

Bulk is always an advantage in the case of healthy people and more minerals than needed are not harmful. A margin of safety in the matter of alkaline reserve, minerals, and vitamins is assured by the liberal use of fruits and vegetables.

Fruits and vegetables in variety and sufficient in quantity to supply 20 per cent of the total calories are considered sufficient by the Bureau of Home Economics, providing the remainder of the diet is well proportioned.

Calcium can be raised by the liberal use of dried beans, cauliflower, Swiss chard, oranges, and certain other fruits and vegetables. This is apparently necessary when milk supplies less than 6 or 7 per cent of the total calories.

Iron can be raised by the liberal use of fruits in general and of green-leaf vegetables, particularly spinach. Potatoes supply more iron than the same number of calories of any cereal. These points are of importance in the diet of children and of those adults who depend chiefly on milk and cheese for protein.

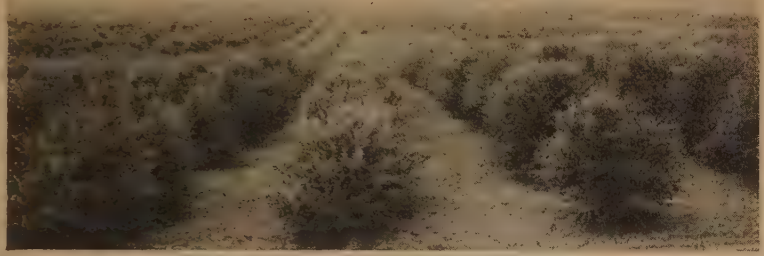
Vegetables selected with reference to the need for minerals are almost sure to be adequate from the standpoint of vitamin A and B. Vitamin C is usually adequate in the diet of those who use potatoes liberally. It is most abundant in oranges, lemons, tomatoes, and raw green-leaf vegetables—foods that can be used in small quantities in such ways as to add attractiveness to the diet even when they are too expensive to be used freely.

The importance of vegetables for the purpose of supplying vitamins and minerals has revolutionized methods of preparing and serving these foods.

In the diet of hikers, mountain climbers, and others desiring concentrated foods easy to carry, nuts are a valuable emergency food. They can be used as the only source of fat in cakes, salads, and many other dishes. Such uses are to be recommended in regions where nuts are raised and can be obtained at low cost.

Statistics of production show that even if the waste occurring in the course of distribution, transportation, and preparation for the table were greatly reduced, the vegetables and fruits produced in this country would not be sufficient to supply the 20 per cent allowance recommended by the Bureau of Home Economics.

FRUIT AND VEGETABLE PRODUCTION



By L. C. Corbett, H. P. Gould, T. R. Robinson, G. M. Darrow, George C. Husmann, C. A. Reed, D. N. Shoemaker, C. J. Hunn, J. H. Beattie, and W. R. Beattie, *of the Bureau of Plant Industry;* J. B. Kincer, *of the Weather Bureau;* and L. B. Flohr, *of the Bureau of Agricultural Economics.*

Relation of Climate and Weather to Fruit and Vegetable Production

CLIMATE AND WEATHER are among the most important factors that influence fruit and vegetable production within the areas where topography and soil are favorable for these crops. Climate, or the normal average weather conditions for a given locality, is the fundamental factor that determines the general adaptability of a region for production, while the prevailing current weather is the important factor in influencing the varying conditions of growth and the yield from year to year.

The principal cause of the relatively greater frost risk to fruits in unprotected orchards is the lack of control of the vegetative epochs in spring, the advancement of which, through premature development, often very greatly increases the danger of frost injury. In the case of vegetables that are subject to harm from frost, planting can be delayed until the frost risk becomes small or is entirely eliminated, even though an unseasonably warm spell of weather early in spring may tempt one to begin seeding.

Weather and Fruit

The Frost Risk

One of the principal weather risks of fruit growers in the United States is the occurrence of frost, particularly in spring. Most fruit trees respond readily and rapidly to short periods of abnormal warmth in early spring, and, consequently, a spell of warm weather in that season may cause premature development of buds and blooms, in which case a later cold period may be destructive. Frost damage to fruit in the United States is relatively much greater than

to any other crop produced. The apple blooms comparatively late and is among the hardier of the tree fruits; consequently, it is less subject to frost damage than some others, but even in this case it has been estimated that frost causes a loss of about 20 per cent, on the average, of the apple crop of the United States.

Another weather danger to fruit trees is the occurence of glaze or ice storms in winter, when an accumulation of ice on the trees may cause much harm by breaking the branches. Widespread, serious damage from this cause, however, is rather infrequent, and is confined mostly to the northeastern portion of the country from the middle and upper Mississippi region eastward.

Critical Temperatures

The low temperature danger point for fruit blossoms, or for the fruit when setting, varies only slightly for different kinds, and ranges in most cases from 27 to 30° F., though in the case of plums it is generally about 31°, and in that of apricots about 32°. Well-developed fruit buds, with petals still closed but showing red, will withstand a somewhat lower temperature than after the blossoms appear. The weather immediately preceding a freeze may have an important bearing on the harm done, as wet blossoms, after a rain, are more susceptible to harm than when they are dry. Damage to the buds and blossoms is invariably greater when the frost is preceded by warm weather.

The heaviest frost damage to deciduous fruits in this country usually occurs in the early stages of growth, to the blossoms or fruit just set, whereas the principal loss to citrus, especially in California, and to the cranberry occurs when the fruit is nearing maturity. In the case of most deciduous fruits an injurious frost or freeze will cause much greater permanent damage after the fruit has set than during the bud or the blooming periods, and the later the frost after the setting of fruit the greater the danger. This is because the critical or dangerous temperature is usually somewhat higher after the fruit has set and, consequently, a given temperature will cause greater damage. With the strawberry, however, blossoms are far more susceptible to frost injury than young fruits. Again, there is a range of several degrees between the temperature at which all the buds or blooms on a tree will be killed and that at which a goodly number will escape, owing to the more favorable location as to position or to different stages of development of individual buds.

Undercooling of Buds

The physical process which enables fruit buds to withstand a temperature considerably below freezing is undercooling of the capillary liquids within the bud; that is, a cooling below the freezing point of water without the actual formation of ice. If there be no solid material in water under certain conditions it may be cooled much below the freezing point without the formation of ice, but in such cases the introducton of a very small quantity of solid matter will result in instant freezing. Again, water in solution with other substances, such as salts, has a lower freezing point than pure water. The liquid contained in the minute capillary tubes of

fruit buds is of such nature and in such solution as to favor undercooling, and will often remain for a considerable time with a temperature slightly below the freezing point of water, and finally warm up again without crystallization and without injury to the bud.

Frost Risk is General

Although in some parts of the country fruits are less liable to frost damage than in others, there is no known section or locality in the United States, including citrus-growing regions, where they are entirely free from possible harm. Killing frost has been experienced in every locality of the United States for which weather records are available, except on a few of the Florida keys.

There is no marked disadvantage in different latitudes of the United States in susceptibility of fruits to frost, as determined by earliness or lateness of blooming in relation to the average date of the last killing frost in spring. This is true also, in general, with regard to difference in elevation, aside from local topographic influences. The average difference in blooming is about four and one-half days for each degree of latitude, and the average lag from south to north in the last killing frost date in spring, disregarding marine and mountain influences, is about five days for each degree of latitude, except in the Southeast where it is about 10 days.

The average retardation in blooming dates with increase in altitude is substantially one day for each 100 feet. Therefore, an increase in elevation of 1,000 feet is equivalent, in retarding the blooming epoch, to a northward displacement on a plain surface of some 150 miles. This is almost exactly offset with regard to the frost hazard, however, by a nearly similar retardation in the average date of the last killing frost in spring with increase in altitude. Frost records for 14 stations in Colorado east of the divide, all under 5,000 feet and averaging 4,200 feet, show May 1 as the average date of last killing frost in spring, whereas 7 stations over 8,000 feet, averaging 9,200 feet, show June 15. Thus, there is a retardation in the average frost date of one day for each 110 feet of altitude. In northern New Mexico, 4 high-level stations with an average elevation of 8,700 feet show June 1 as the average date, whereas 6 stations, averaging 5,500 feet, show April 30, an average of one day for 103 feet. Results quite similar to these are shown also in the southern Appalachian Mountains. Ten high-level stations in the mountains of western North Carolina, with an average elevation of 2,600 feet, show April 27 as the average date of last killing frost, whereas a similar number in districts adjoining the mountains, having an average elevation of 690 feet, show April 9, a lag of one day for each 100 feet difference in elevation. These data show that elevation, in general, disregarding local topography, has but little influence on the frost risk, as the retardation in the frost date with increase in elevation keeps pace, approximately, with that of blooming.

Local Topography of Much Importance

The foregoing statements have reference to differences in general elevation, and do not hold in cases of local variation in topography. Great advantages are often to be had in selecting a location for an

orchard where the general land surface is uneven, especially where alternating moderate slopes and depressions obtain. In general, the lower ground, especially small, inclosed valleys, should be avoided. Such locations are much more liable to frost than higher or sloping ground because of air drainage, whereby a mass of dense, cold air collects over the lower ground during clear, calm nights. Where irrigation is necessary, however, such selections can not always be made, because of the difficulty in supplying water. Slopes too steep for proper orchard care should be avoided. The difference in susceptibility to frost on slopes and bottom lands is often very pronounced. It frequently happens that trees on the higher ground of an orchard escape, while those on the lowlands are frosted. In fact, the danger line is sometimes so sharply drawn that the blossoms on the lower branches of individual trees are killed, while those on the upper branches are unharmed. In cranberry fields the boundary between frost injury and no injury may be determined within a few inches in elevation.

The importance of taking into account the local topographic influence in selecting an orchard site is shown by some recent results obtained by the Weather Bureau in temperature surveys of important fruit districts in southern California. Typical of these may be mentioned the following: Among some 40 stations established in a certain district, two were located about one-third mile apart; one at an elevation of 1,975 feet on sloping ground, and the other on lower land of 825 feet elevation. On the morning of January 6, 1924, a minimum temperature of 25.1° F. was recorded at the lower point, and 48.1° was the lowest reached at the higher station, a difference of 23° in temperature at points only a few hundred yards apart. For 42 critical nights, the average difference in the minimum temperature at these two stations was 15°. This experiment clearly showed why the higher location was practically immune from dangerous frosts, while an orchard in the lower was so unsuccessful that it had to be abandoned. Figure 7 shows the possible effect of air drainage on the temperature during a calm, clear night at different elevations on a steep slope, at the base of which a minimum of 24° F. was reached, whereas at 225 feet above the base it did not go so low as 50°. Wind has a decided influence upon air drainage and in some cases has been known completely to reverse temperature conditions of high and low altitudes. This condition is the exception rather than the rule however. Unfortunately, many orchards in this country have been planted with little regard to these matters, and to this may be attributed, in a considerable measure, the large frost damage from time to time.

Relation of Fruit Blooming and Last Killing Frost Dates

Killing frosts are so likely to occur in most sections during the blossoming period of fruits, that, at the best, the margin of safety is narrow. Both the date of the last killing frost and the blossoming period of fruits vary in time of occurrence from year to year, sometimes the last freeze occurring before the bloom and sometimes after. The very complete phenological record kept for many years by the late Thomas Mikesell, of Wauseon, Ohio, simultaneously with me-

terological records, shows that the average date of full bloom of the Tompkins King apple during a period of 26 years was May 11, and the average date of the last freeze May 6; this gives an advantage in the apple's favor of only five days, while in 40 per cent of the years the temperature dropped to freezing or lower after the apples were in full bloom. The Bartlett pear was in full bloom, on the average, by May 7; Late Crawford peach by May 3, and plums and early cherries by May 4. When these dates are considered in connection with the average date of the last freeze (May 6), the importance of avoiding, as far as possible, locations subject to frost in selecting orchard sites is forcibly emphasized.

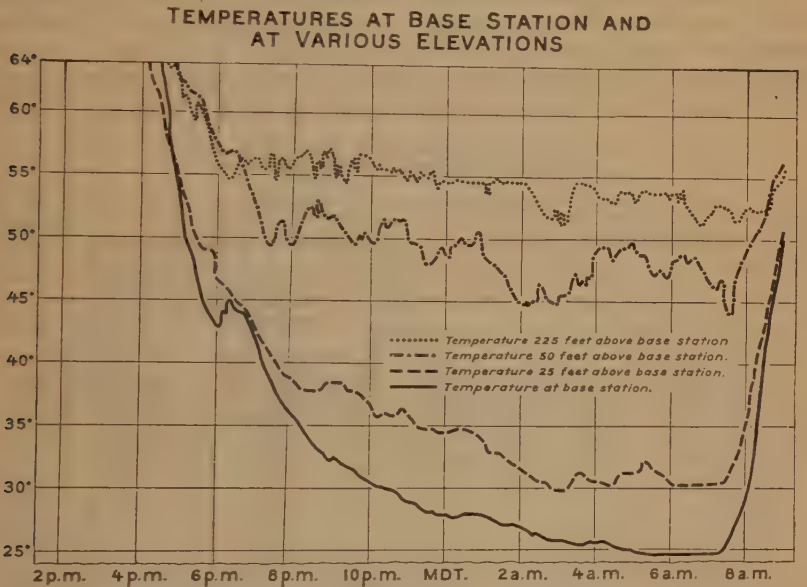


FIG. 7.—Continuance records of the temperature from 4 p. m. to 9 a. m. at the base and at different heights above the base of a steep hillside, showing the great differences in temperature that sometimes develop on a clear, still night. Although the temperature at the base was low enough to cause considerable damage to fruit, the lowest temperature 225 feet above on the slope was only 51° F. Note that the duration of the lowest temperature was much shorter on the hillside than at the base. Although this represents a rather extreme case of temperature inversion, it illustrates the importance of local topography in selecting orchard sites

Relation of Spring Temperatures to Blooming

There is a close relation between the temperature in early spring and the earliness or lateness of the blooming of fruit. Warm weather at this season hastens the appearance of bloom, but does not have the same relation to the earliness or lateness of the last freeze. The Wauseon records show that the most important period in the development of fruit buds and bloom, from the standpoint of temperature in relation to apples, includes the latter part of March and the month of April. A correlation between the temperature and time of blooming shows only a slight relation for January and none for February. March, as a whole, gives a fairly good correlation, whereas the temperature for April shows a closer relation. The most important period is shown to be the interval from

March 21 to April 30. When successive 10-day periods are considered, that from April 11 to 20, inclusive, shows the closest relation. Figure 8 shows graphically the relation between the departure of the temperature from normal for the period March 21 to April 30, and the departure in days from the average date of apple blooming at Wauseon. The graph covers the period from 1883 to 1912, except the years 1900 to 1903, inclusive, for which no record of blooming dates is available.

Favorable Fruit Climates

In general, the most favorable climate for deciduous fruit is one with a continuance of cool weather into late spring, which tends to retard the development of buds until danger from frost is past; comparatively clear and not too hot summer weather, which favors the development of good color and flavor; a prolonged, cool fall

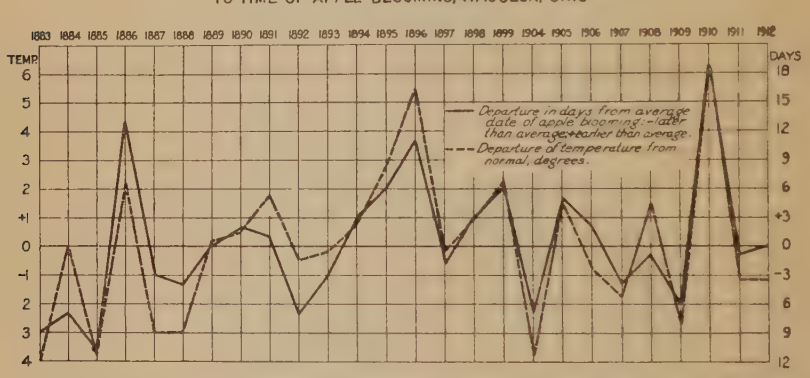

RELATION OF TEMPERATURE FROM MARCH 21 TO APRIL 30
TO TIME OF APPLE BLOOMING, WAUSEON, OHIO
1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1904 1905 1906 1907 1908 1909 1910 1911 1912
TEMP
DAYS
Departure in days from average date of apple blooming: -later than average, earlier than average.
Departure of temperature from normal, degrees.

FIG. 8.—The relation of the temperature between March 21 and April 30 to the date of apple blooming at Wauseon, Ohio, covering a period of 26 years. The correlation between the temperature and the earliness or lateness of apple blooming for the period indicated is greater than for any other period during the winter and early spring months. When the weather was cool during this time apples bloomed comparatively late, and when it was warm early blooming is indicated

without early, hard freezes, which favors maturity and the ripening of the wood; and freedom from extreme cold in winter to avoid winter killing. In middle or higher latitudes, the lee shores of lakes and other large bodies of water stand out as prominent fruit-producing sections because these ideal conditions are more nearly realized in such localities.

Weather and Nuts

Nuts, as with the fleshy fruits, have rather definite climatic requirements but owing to their wide range of species there are those suited to practically all climatic conditions. At present the principal commercial nut crops, including pecans, Persian (English) walnuts, and almonds are grown commercially only in the warmer parts of the United States. The more hardy nuts, including filberts, chestnuts, black walnuts, and others, are adapted to the colder sections, thus extending the range of nut crops to all parts of the country.

The Persian walnut is the most restricted of all in its climatic range and its culture is limited mainly to California. The greatest hazard in the production of Persian walnuts is frost injury to the immature growth in the fall. Forced maturity of the trees through restricted water supply seems to be the best method of safeguarding the walnuts against fall frost injury. Pecans and almonds are more hardy. Pecans are especially adapted for culture throughout the territory south of Virginia and southern Indiana, westward to central Texas. Almonds are practically as hardy as the peach but their commercial production is largely limited to the Pacific coast region where the climatic conditions are especially adapted to their production.

Weather and Vegetables

Vegetables are subject to the same general climatic and weather limitations as are fruits and nuts. As ordinarily grown most of the vegetables are annuals and their period of growth comes within the normal summer season, but in most instances the geographic limitations of production and the season most favorable for growth are definitely determined by temperature and moisture conditions. The majority of our vegetables have a rather definite maximum and minimum temperature range within which they will grow. This limitation in temperature requirement finds its natural expression in the geographical distribution of the crop, the northern limit being determined by reduced temperature and short growing season while the southern limit is determined by an excess of heat. Certain crops like Lima beans have both a northern and a southern limit and are grown to advantage only in the intermediate zone. Other short-season crops like lettuce are adapted to the northern regions during the short summer season, to the intermediate sections during the spring and fall, and to the southern sections in the winter. In all cases rainfall or irrigation bears an important relationship to temperature in determining the geographical distribution of any vegetable crop or group of crops.

Vegetables in their relation to temperature influence on growth may be divided into three general groups: (1) Those which require a relatively large amount of heat and a long growing season; (2) those which do best under intermediate temperature and seasonal conditions; and (3) those adapted to regions where the growing season is comparatively cool and short, or that grow best in warm climates during the colder part of the year. In the adaptation of vegetables to climatic conditions the term "hardy" is applied to those crops which are able to withstand ordinary frost without serious injury, and the term "tender" to those which are especially subject to injury by frost.

Average dates of the last killing frost in the spring and the first killing frost in the fall have an important bearing upon the planting dates for all early and late vegetables. Owing to the wide difference in the temperature requirement for the germination and early growth of several of the more hardy vegetables, these may be planted considerably in advance of the average date for the last killing frost in spring. The usual best dates for spring planting have a definite relation to the average date of the last killing frost

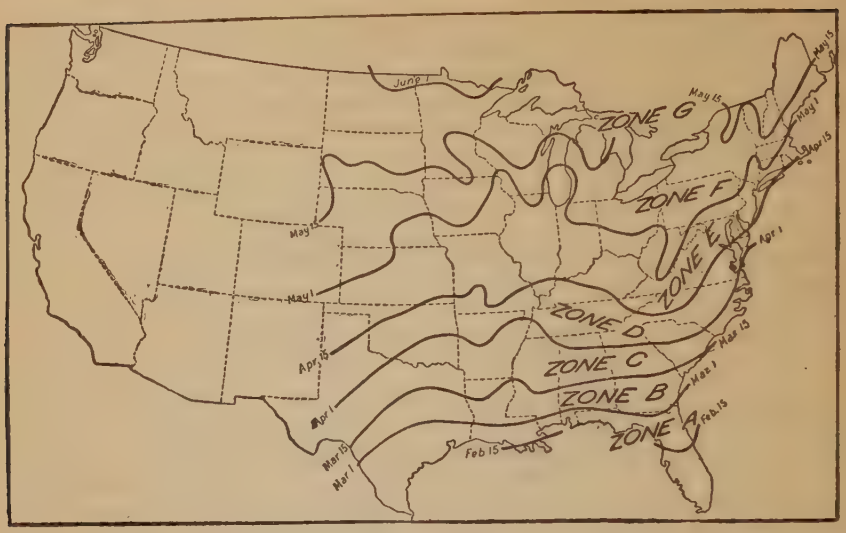


FIG. 9.—A zone map of the United States, based on the average dates of the latest killing frost in spring

but must be determined for each locality. The best dates for planting fall crops must be computed from the average date for the earliest killing frost in the fall. Figure 9 shows for the different sections of the country east of the Rocky Mountains the average dates of the latest killing frost in spring, Figure 10 of the first killing frost in fall. Owing to differences in temperature due to abrupt changes in elevation, the charts do not cover the region from the Rocky Mountains westward.

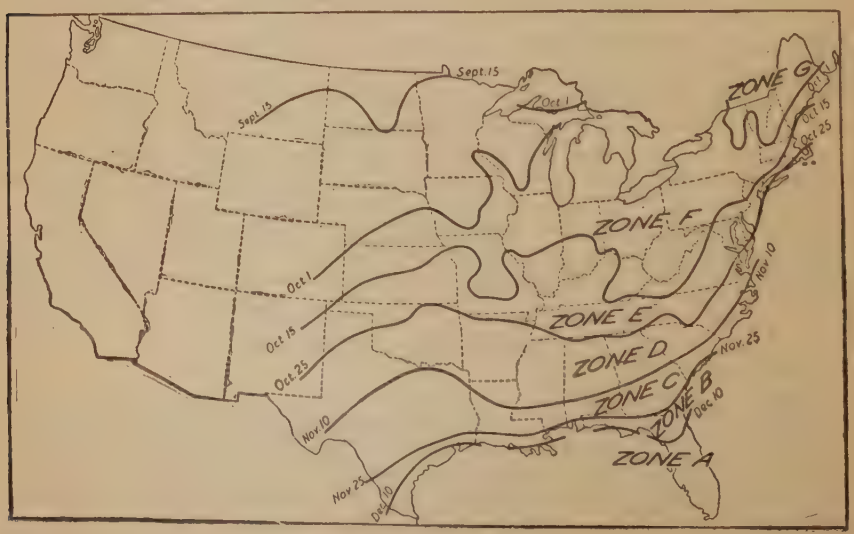


FIG. 10.—A zone map of the United States, based on the average date of the first killing frost in autumn

The dates shown on the charts extend from the first half of February in the southern portions of the country, to the first half of May in the more northern sections. Although these dates are considered to be the best for an average year, general weather conditions vary from year to year making earlier or later planting desirable according to the particular season.

The Growing Season

The annual period of plant growth in countries situated in middle latitudes, such as the United States, is limited by the occurrence of low temperatures. There are two important phenomena that may be considered as constituting central or basic points of reckoning. These are the vegetative temperature and the occurrence of killing frost.

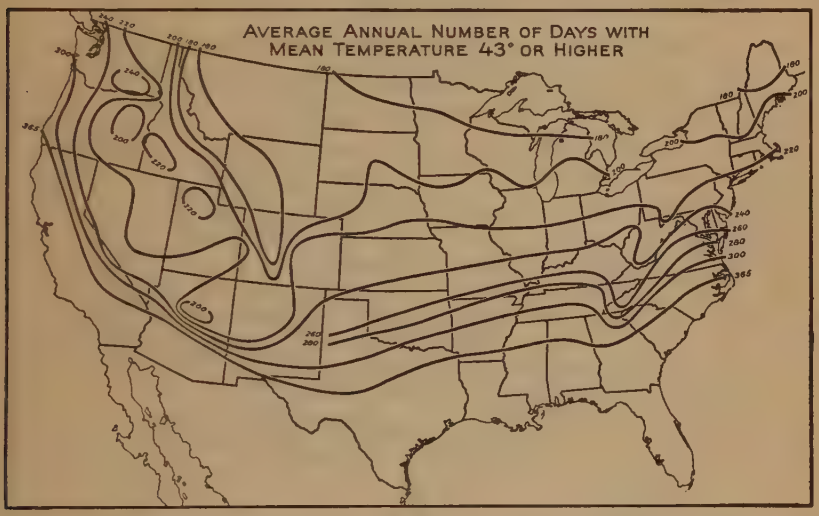


FIG. 11.—The vegetative period is usually considered to be the interval between the time the normal daily temperature rises to 43° F. in spring and that in fall when it goes below 43°. This represents the potential growing season for most crops, but this is often materially shortened by the occurrence of late spring or early fall frost. The above chart shows the average annual number of days with the mean temperature 43° or higher

The first defines the potential period of plant growth, which is determined by the date in spring when the temperature rises sufficiently high to render active the protoplasmic content of vegetative cells, thereby inducing growth, and the date in autumn when it falls below this point and growth ceases. It is usually considered that the vegetative season for most plants comprises the period between the time when the normal daily temperature rises to 42.8° F. in spring and the date it falls below that point in fall (fig. 11). By reason of difference in topography, variations in marine influence, and the wide latitudinal scope of the United States, the length of the frost-free season varies greatly in different sections. A little less than 10 per cent of the area comprising the elevated western districts has a growing season, reckoned from the average date of the last killing frost in spring to the first in fall, less than three months in length. Nearly

three-fourths has less than six months and about 10 per cent has more than eight months. The frost-free period includes the interim between the date of the last killing frost in spring and the first in fall.

The limitation of plant growth by frost is different from that due to lack of heat energy sufficient to induce growth in spring or to bring a growing plant to maturity in fall. The frost limitation results from the definite and abrupt destruction of growing plant tissues, and consequently can be operative only after the vegetative period has been established in spring or before it ceases in fall. The frost-free period is shorter than the vegetative period and any frost protection methods to prevent the destruction of immature vegetation in fall is simply an effort to artificially prolong the former, for the particular plant, so that advantage may be taken of the remaining vegetative period to bring the plant to maturity (fig. 12).

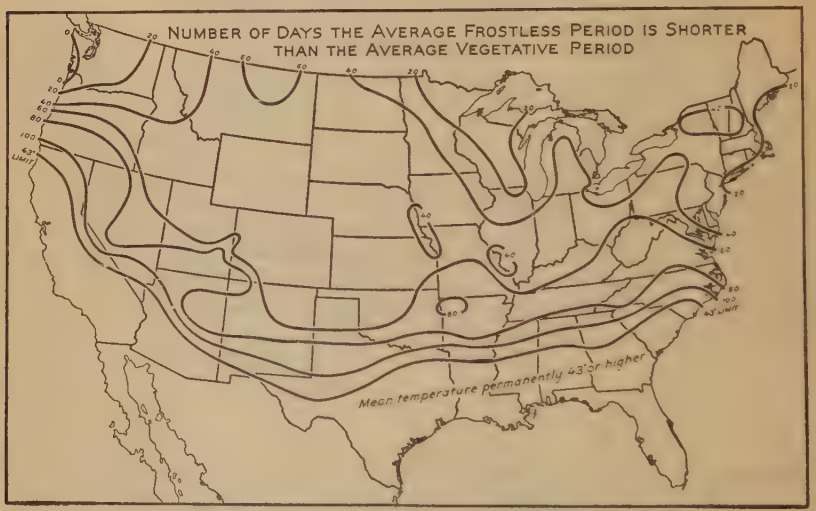

NUMBER OF DAYS THE AVERAGE FROSTLESS PERIOD IS SHORTER THAN THE AVERAGE VEGETATIVE PERIOD
Mean temperature permanently 43° or higher

FIG. 12.—The frost-free period is represented by the average number of days between the last killing frost in spring and the first in fall. This represents the length of the growing season for plants subject to frost injury, and is shorter than the vegetative or potential growth period. The chart shows the average number of days by which the vegetative period for tender crops is shortened through killing frost, or the number of days the average frost-free period is shorter than the vegetative period

Figure 11 shows for different parts of the United States the average annual number of days with the normal daily temperature 42.8° F. or higher, representing the length of the vegetative period, and Figure 12 shows the number of days the average frost-free period is shorter than the average vegetative period. In the North, especially in the region of the Great Lakes, the average frost dates agree closely with the vegetative temperature dates and consequently the potential growing season is not markedly shortened by the occurrence of frost. In the South, however, the vegetative period is much longer than the frost-free period and consequently hardy truck has a much longer growing season than has vegetation susceptible to frost damage. It follows, also, that frost protection can be much more profitably practiced in the South than in the North.

The Occurrence of Frost

Spring frost.—It is important that the frost situation, which varies greatly in different sections of the country, be carefully studied in connection with fruit and trucking operations, particularly in spring planting of truck and garden crops. Under ordinary conditions fairly great frost risks can be taken in early planting for some crops where high prices are usually realized for the early marketed products, but large scale risks are not, as a rule, advisable.

Killing frost does not occur on the average along the south Atlantic coast from central South Carolina southward, and in the southern portions of the Gulf States after March 1. To the northward, the average date becomes progressively later to after June 1 in limited areas in the extreme northern portion of the country and also in the higher altitudes of the West. From the Rocky Mountains westward, owing to diversity of topography, there are wide variations in the frost dates and consequently no general statement can be made applicable to this region. The average spring dates range from before April 1 along the central and southern California coast to after June 1 in the higher elevations of the plateau and Rocky Mountain districts. Killing frost may be expected on the average in half the years as late as the average date of occurrence. That is, in the long run, the time of occurrence in half the years is earlier than the average date and in the other half later than the average.[1]

Fall frost.—In the fall, killing frost may be expected in an average year by September 20 along most of the northern border of the country, including practically the whole of North Dakota, Montana, and the western portions of South Dakota and Nebraska, whereas in some of the higher localities of the West the average date is before September 1. Southward from the northern border States the dates become progressively later until in the immediate Gulf coast region killing frost does not occur as a rule until near the close of November, and in much of Florida and the west Gulf section not until after the 1st of December.

Geographical Distribution of the Commercial Fruit Industry

The Climatic Factor

Although fruit growing in its numerous aspects is widely distributed throughout practically the entire country, the commercial development of the industry is rather definitely restricted to particular regions or sections. Several factors operate to determine these regions. It is not a matter of chance, and often not of choice, except as the latter may be guided by certain basic principles. Some of the determining factors are natural conditions; others are economic. Of the natural conditions the climate is perhaps the most important. It is inexorable. The economic factors, though perhaps as effectively restrictive as the climate in the financial success of an orchard, are more subject to the control of man.

The climate in its relation to the geography of fruit growing is complex, but its most determinative element is temperature. Rain-

[1] Information as to the time of occurrence of frost for any locality may be had by application to the nearest Weather Bureau station.

fall, or the availability of water otherwise, is second only to the temperature factor. Both are influenced by topography and elevation. The soil factor has important relationships but they have to do with local conditions and with particular sites rather than with the broader aspects of the geographical distribution of fruit growing.

Temperature.—The temperature factor is everywhere operative. The northern extension of fruit growing is limited by the occurrence of minimum temperatures that are either so low as to prevent the functioning of the plants or of such severity as to injure them more or less seriously. The southern extension of fruits in many cases is likewise limited by temperature but operating very differently from its manner of influence northward.

Furthermore, it should be understood that it is the temperature extremes that limit the geographical distribution of fruit growing rather than the average or mean temperatures, although the total heat during any given period may be a very important factor. This is the case especially with respect to the limitations northward. Southward, the mean temeprature is somewhat more of a factor though the seasonal distribution is a large element in the results. However, the mean or average temperature of a place is purely theoretical so far as it concerns any actual readings of a thermometer. If the reading ever actually represents the mean of a place, it is purely incidental. In consequence, two places widely separated might have the same mean temperature, but that of itself would tell little or nothing as to the fruits that could be grown in the two places. For instance, in one of the places the extremes in temperature might not vary widely from the mean. In other words, the temperature there is very equable. In the other place with the same mean, the extremes may vary widely, and in the direction of the cold endurance of plants the minimum temperatures are the restricting influence. Even if destructively low temperatures occur but seldom they may as effectively debar the profitable commercial production of fruit as where they occur frequently.

These observations are by no means theoretical possibilities. Examples are not lacking. For instance, the history of orange growing in Florida furnishes a striking illustration of the forcing southward of an entire fruit industry as a result of the occurrence of destructively low temperatures. Although the present area of important commercial growing of citrus fruits in Florida is not immune to frost injury, the industry has been pushed southward by destructive freezes in past years to the sections that are reasonably safe, except for the possible occurrence at some future time of temperatures without precedent in severity. On the other hand, extending southward, citrus growing finds no limits from the temperature factor other than those resulting from high altitudes until the South Temperate Zone is approached.

Again, the apricot furnishes a striking example of a fruit commercially restricted in its geographical distribution by another expression of the temperature factor, which in turn is closely correlated with the early blossoming habit of the apricot tree. Because of the latter characteristic, the blossoms are much subject to injury from frosts, except in favored localities mainly in California, even though the tree may thrive in regions widely separated.

In like manner, peach growing has shifted considerably in the past because the crops in some regions have proved too uncertain on account of the danger of destructive frosts during the blossoming period, even though the trees might thrive.

Again, the northern limits of peach growing are determined mainly by the temperature factor as expressed in minima that are too low either for the fruit buds, the trees, or both, to withstand. The same is true of the apple as well as other hardy fruits such as pears, cherries, grapes, plums, and others, though with most of these fruits there is a wide range in varietal adaptability, some being more hardy that others.

Hence, some varities of fruits may be grown successfully in regions where others of the same kind would fail because of the severity of the temperature.

The operation of the temperature factor in the southern extension of deciduous tree fruits expresses itself in various ways and very differently from what it does in regard to citrus and other subtropical and tropical fruits. The latter are evergreen in their habit of growth. That is, by nature they remain continuously in a state of more or less active growth, never becoming perfectly dormant and always remaining in full leaf. Deciduous fruits, on the other hand, those which normally shed their leaves annually—apples, peaches, pears, raspberries, currants, and the like—must have a period of rest and dormancy every year in order ot thrive and function normally. This period of dormancy is brought about by the lowering of the temperature as the season advances and finally the coming of late fall and winter when the temperature is so low as to inhibit the active functioning of the trees and other plants.

Trees adapted to such a climate do not thrive when planted where the temperature remains throughout the year so warm as not to induce the required rest period represented by complete dormancy. It is possible, perhaps even probable, that the shortening of the daily period of sunlight in the advancing season may be a factor in plants becoming dormant, but this relationship introduces quite another consideration in the behavior of plants in general.

As one result, in the nature of things, there is a decreasing number of apple varieties that are adapted to the southern limits of apple culture, until, as in the Gulf coast region, in the Coastal Plain region of the south Atlantic States, and other extreme southern sections of low elevation, the apple practically is not to be found.

The desirability of locations near large bodies of water for fruit growing is everywhere recognized. The advantages are mainly favorable temperature conditions as influenced by the water. During the summer the water absorbs heat. As the cool autumn season approaches with its accompanying frosts and freezes, the tendency is for the water to become the same temperature as the air, in this process radiating heat into the air. From a large body of water this is sufficient to produce an appreciable ameliorating effect on the temperature of the adjacent land areas, thus retarding the occurrence of frosts. Where tender fruits, as the grape, are involved, the delaying of a killing frost for even a few days may mean the difference between the crop maturing well and being largely a loss because of immaturity.

Again, the water becomes cold during the winter. As spring approaches and the air becomes warm, a body of water tends to become the same temperature of the air as in the autumn, but with this difference, that in the spring it serves as an immence refrigerator and prevents the air of the surrounding land areas from warming up as rapidly as it would otherwise do. This obviously retards the development of vegetation and delays the blossoming of fruit trees growing within the area of influence. The occurrence of serious frosts during the blossoming period of fruit trees is always much feared by fruit growers. Every day of delay, therefore, in the blossoming of the trees gives reassurance to the fruit grower because of the decreasing danger of killing frosts after the fruit buds open. The concentration of fruit growing along the lake shores in western New York, northern Ohio, on the opposite shores in southern Ontario, in western Michigan, and elsewhere, is thus explained. Moreover, land on the leeward side of a lake is more favorably located for fruit growing than that on the other side. This is seen in western Michigan in contrast to corresponding locations on the Wisconsin side of Lake Michigan. The winter winds reach the lake shore of Wisconsin after passing over land areas, but the same winds pass over the waters of the lake before they strike the Michigan shore. In so doing, they are greatly modified. Hence, peaches may be grown successfully in the Michigan fruit belt all along the lake shore, whereas in the corresponding portion of Wisconsin the winter temperatures are too low for peach growing.

Temperature determines more definitely than any other factor the northern extension of peach culture, as already stated, as well as that of other common and relatively tender deciduous fruits such as sweet cherries, grapes, and others. Wherever the winter extremes are too severe for the trees, plants, or fruit buds to endure, there the northern limits of culture become established, until perhaps, more hardy varieties are developed. Then the range may be pushed farther north in accordance with the hardiness of the newly developed variety. Various other aspects of the temperature as a factor in the geography of fruit growing might be cited, but enough has been said to indicate the very potent character of this element of enviroment.

Latitude, elevation, and topography.—Compensating influences due to elevation may become operative in considering latitude and topography in relation to fruit growing. For example, in the southern extension of the Appalachian Mountains into northern Georgia and northern Alabama the conditions due to the higher elevations are favorable for apple growing, though in the same latitude in the Coastal Plain apples are so poorly adapted as to occur only to a very limited extent and in many localities not at all. Likewise, in the higher elevations west of the Mississippi River similar conditions prevail. In certain parts of northern Texas, New Mexico, and other sections apple culture has been established more or less gradually at latitudes farther south than at the lower levels of the Southeastern States. In California, citrus and other subtropical fruits are grown extensively within a few miles of large deciduous fruit interests, the latter occurring at the higher elevations and the subtropical fruits in the warm valleys.

Again, elevation becomes restrictive in the geographical distribution of fruits when it is excessively high. In the Rocky Mountain sections practically no apple growing exists at elevations in excess of 7,000 or 7,500 feet, and in the Appalachian Mountain sections of

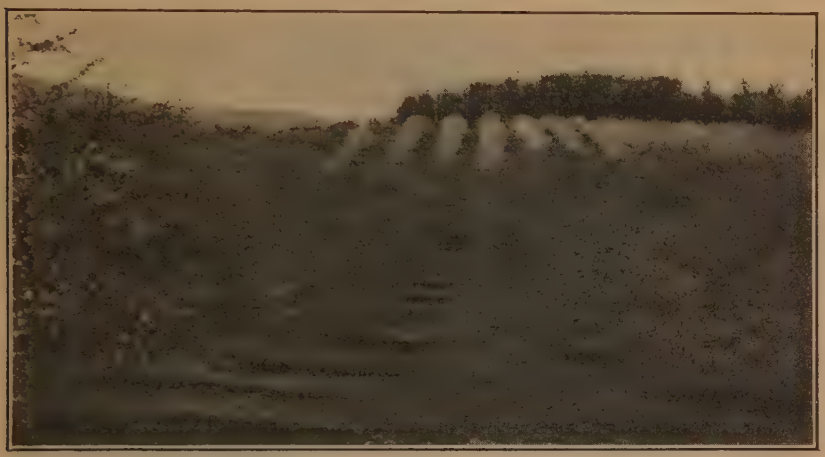


FIG. 13.—Apple trees in the background in an elevated part of the orchard in full bloom on April 6

the East peaches are not found very far up the slopes of the various mountain ridges.

It should be observed in this connection, however, that the elevation factor, like that of latitude, is essentially a climatic factor—

FIG. 14.—The same orchard as shown in Figure 13 one week later (April 13). The trees in the background have nearly passed the blossoming period. Meanwhile those in the hollow this side of the hill have come into full bloom, illustrating the influence on time of blossoming of the drainage of the cold air to the lower level

mainly temperature. The reason apples do not succeed above a rather definite elevation in the Rocky Mountain section is because of insufficient heat, the frequent occurrence of destructive frosts and the shortness of the growing season. The limitations are more quickly

reached in the case of tender fruits such as the peach and they are operative at the lower elevations of the Appalachian regions as compared with the Rocky Mountains.

Relative elevation (not the actual elevation above sea level) is one of the fundamentally important factors in selecting sites for fruit growing. As in the foregoing aspects, it concerns the temperature factor. It is universally recognized that cold air settles to the lower levels. This is referred to as "air drainage." The results of atmospheric drainage, relative elevation, and the stratification of the air at different temperatures are shown in Figures 13 to 16. The application of this principle is discussed in detail on page 154.

Moreover, the soil of the higher sites is likely to be better drained than the lower land because of the fact that soil moisture, like cold air, seeks the lower levels.

FIG. 15.—A peach orchard on the side of a mountain. The photograph was taken on an early spring morning when the atmosphere was very still, but the smoke from the burning stump shows an unmistakable drift toward the lower level, thus visualizing air drainage

It follows, therefore, that sections or regions having a broken or a more or less mountainous topography are likely to possess certain natural advantages over a flat or low-lying region for fruit growing.

Moisture.—Rainfall, or its expression in adequate water for irrigation, is another deciding factor in the geographical distribution of fruit growing. The force of this influence is not much apparent in the humid portions of the country, but it is much in evidence in the semiarid regions where the natural precipitation is insufficient to maintain fruits and where dependence must be placed on irrigation as a means of moisture supply.

The comparative absence of important fruit interests in the Great Plains area and the development of commercial production in many of the irrigated valleys of the intermountain and Pacific States mark the application of this principle.

Soil.—The soil factor, although important and in some instances influential in determining the geographical distribution of fruit production, is more often a deciding feature in the choice of a location or site than in the broader aspects of fruit geography. An example, however, of the latter is the development of an important regional

FIG. 16.—The stratification of air in different temperature layers. The picture shows an orange tree in Florida soon after a freeze. The lower part of the tree was in a stratum so cold that the foliage dried on the tree after it was killed without dropping. The temperature of the air surrounding the central section was cold enough to kill the foliage, which dropped. The top of the tree was in a temperature that was not injurious

apple industry in the adjoining corners of the States of Iowa, Nebraska, Kansas, and Missouri. It is doubtless the occurrence in the adjacent sections of these four States of a large area of loess soil which is highly adapted to fruit growing that accounts for the development of apple interests there of considerable size, rather than

to any other single agency. In many other regions the occurrence of both favorable climatic and soil conditions has had a conspicuous influence. In the absence of either condition, little would have been accomplished.

FIG. 17.—Soils of good depth with deep, friable subsoil are essential to good orchard sites. Many orchards have been planted on shallow soil underlaid by a ledge, as shown in this picture. The trees may thrive for a time but are practically certain sooner or later to die, either from excessive moisture or as a result of extreme drought

Though the general situation with respect to the soil factor is as stated, two aspects stand out with such prominence as to merit specific mention. These are perfect drainage and a deep, friable subsoil. Many orchards have failed utterly because the roots of the trees were submerged in water for too long periods or the soil was soggy and sour because of poor drainage. Many other orchards have

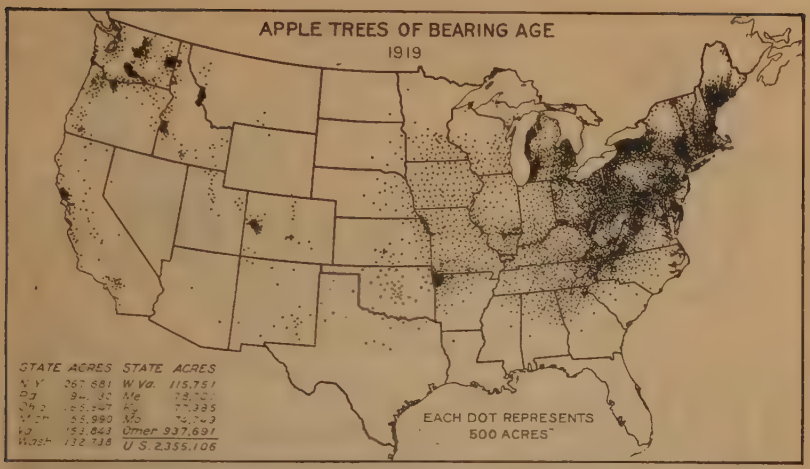


FIG. 18.—Acreage of apple trees of bearing age. The wide distribution and districts of concentrated planting are clearly shown. The relative absence of apple trees in the Gulf coast region, the Great Plains area, and the nonirrigated districts in the intermountain and Pacific States is also to be noted

failed because of unfavorable subsoil conditions even when the surface conditions seemed well suited to fruit growing. A condition frequently prevailing is that shown in Figure 17 where the shallow surface soil is underlaid by a ledge. A very loose, gravelly subsoil is but little better and for substantially the same reasons—plant food and soil moisture conditions. There is this difference, however, that a loose gravel subsoil is rarely, if ever, poorly drained, while a shallow soil over a ledge may be too wet at times as well as being without capacity to hold moisture during drought. Figures 18 to 23 show the geographical distribution on the basis of the fourteenth census of the acreage of bearing and nonbearing apple trees, the production of apples in 1919, and the acreage of pear, peach, and plum and prune trees.

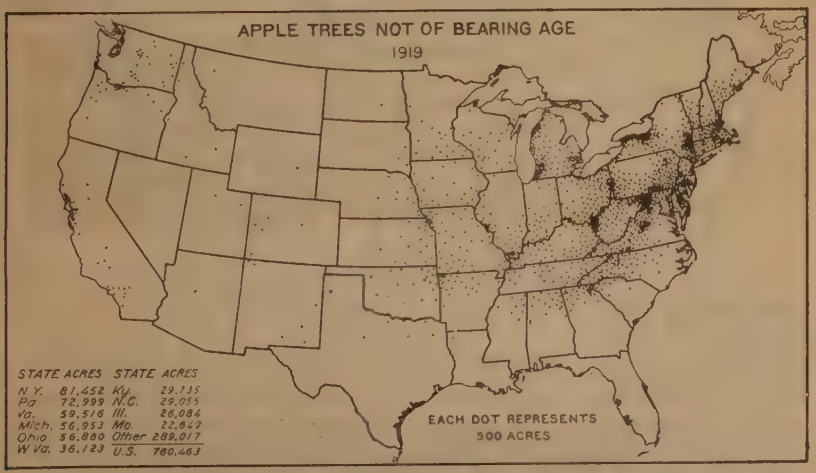


FIG. 19.—Acreage of apple trees not of bearing age. Note distribution and districts of concentrated planting in comparison with Figure 18

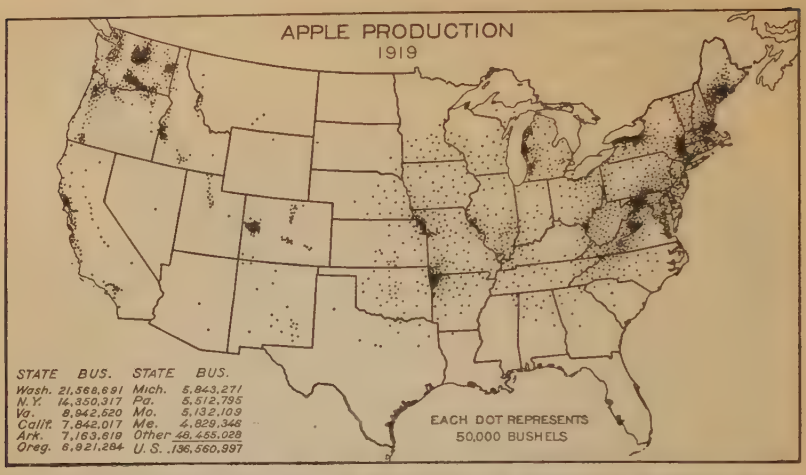


FIG. 20.—In a normal crop year the distribution of production, including centers of concentration, naturally conforms closely to the distribution of apple trees of bearing age. Compare with Figure 18

Economic Factors in the Development of the Fruit Industry

The successful development of a fruit industry in any region requires much more than the occurrence there of favorable climatic and soil conditions. With these two factors favorable, the production of abundant crops of high-grade fruit might be possible and at the same time the enterprise might fail financially. Various economic factors are not less essential than good soil and climate. These differ somewhat with the kind of fruit to be grown.

The relation of a region to markets must be considered. Transportation is vital. Formerly an orchard that was more than 4 or 5

FIG. 21.—Distribution of pear growing throughout the country. The data here presented include trees both of bearing and nonbearing age. The rather scattered distribution of the industry is indicated with only limited concentration in a few relatively small areas, as in the Hudson River Valley and along Lake Erie in New York, in southwestern Michigan, in central California, and to a lesser extent in Oregon and Washington

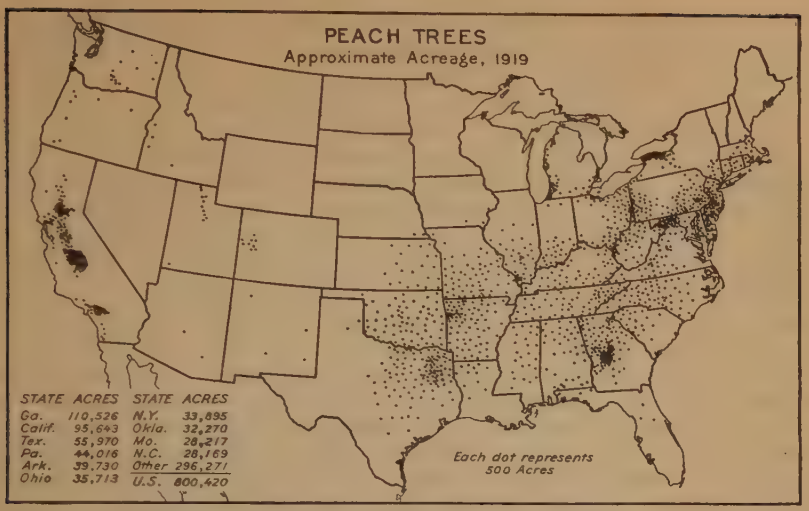


FIG. 22.—Distribution of peach growing throughout the country. The data here presented include trees both of bearing and nonbearing age. The centers of largest concentration are in central Georgia, along Lake Erie in New York, and in California

miles from a shipping station was under a serious handicap. The development of the motor truck and good roads has greatly modified, though not eliminated, this handicap. Large quantities of fruit are now delivered by auto truck over distances of 20 and 30 miles where

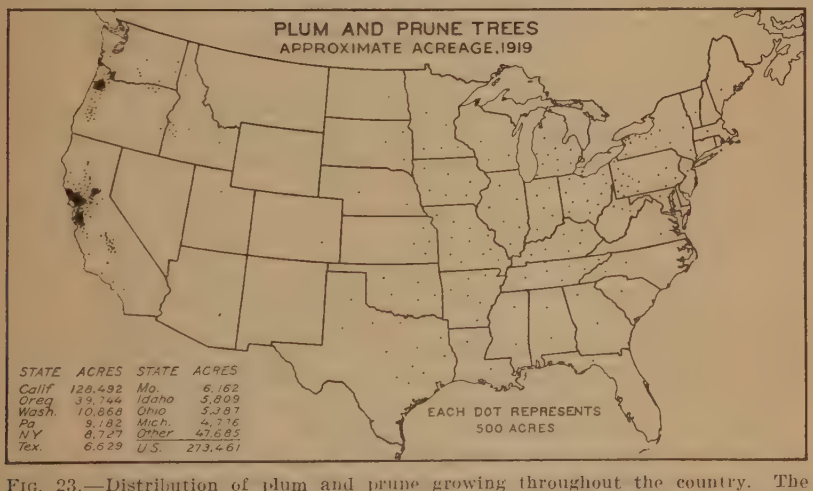


FIG. 23.—Distribution of plum and prune growing throughout the country. The data here presented include trees both of bearing and nonbearing age. The very wide distribution, but at the same time its limited character, are here indicated. The only centers of important concentration are in California and Oregon, where a considerable proportion of the acreage indicated consists of prunes. In 1919 nearly half of the acreage of plum and prune trees in the entire country were in California, and, as shown, the industry is rather highly concentrated in a comparatively small area in that State, the areas including Santa Clara, Sonoma, Placer, Napa, and Solano Counties. In Oregon the concentration of planting is mainly in Marion, Polk, and Yamhill Counties. A small center occcurs in Clarke County, Wash. Practically no prunes are grown east of the Rocky Mountains. The plums grown in the middle latitudes and the South, as well as the upper Mississippi Valley region, consist mainly of native varieties, with some of the Japanese varieties, rather widely distributed

the roads are good. In some cases much greater distances are traversed more or less regularly in delivering fruit to markets, transportation by truck being substituted for railroad service. There are many regions in which fruit is not produced as a money crop but where the natural conditions are as favorable in every particular as in other regions that have become famous for fruit production. The only material difference lies in their accessibility to markets. Lack of suitable transportation facilities acts as an impassible barrier to commercial fruit production in many otherwise suitable regions.

Important fruit industries have developed along the line of some railroad following its completion through a potentially good fruit region. In other cases orchards have been planted in anticipation of the early construction of a projected railroad which never materialized. Lack of access to markets rendered these orchards of small commercial value. Good fruit sections supplied with both water and rail transportation have great advantages in marketing the crop, in obtaining orchard supplies, and in other ways. However, where good automobile roads exist and the orchards are within reasonable trucking distance of markets the shipping problem is perhaps as much simplified and comes as much within the control of the grower as under any system that has yet been devised.

Another factor in the success of many fruit growing enterprises is the time the crop ripens in any location in relation to the time of ripening of the same kind of crop in other sections. This is especially true in the case of a highly perishable fruit which in any one region has a rather short season. The strawberry illustrates this feature in a striking manner. It is not an accident that the commercial strawberry growing regions of the Atlantic seaboard are located in Florida, eastern North Carolina, the Norfolk section of Virginia, and in rather definite order northward in Delaware, New Jersey, and other northern sections. The sequence in which the fruit ripens and reaches the markets is virtually the deciding factor with respect to these locations. In Florida, strawberries are grown under climatic conditions peculiar to the region and ripen over a long period, depending largely on when the plants are set. The fruit from this section supplies the demand until strawberries are ready to ship from eastern North Carolina. By that time in the spring the demand begins to increase and comparatively heavy shipments are required to supply the northern markets. To a large extent shipments cease in the North Carolina area when the Norfolk crop begins to move. For a short time the fruit from that section meets little competition, then that from the more northern points comes in season, and shipments from the more southern points cease.

A similar condition prevails with respect to different peach regions. The variety factor enters into the peach industry more largely than in almost any other kind of deciduous fruit because the production so largely consists of a single variety—the Elberta. The season of large peach shipments begins with some of the varieties which ripen in advance of the Elberta in central Georgia. Then follows the Elberta, which closes the peach season in that section. There is small chance in the market for the earlier varieties from the northern peach sections while the Elberta is moving from a more southern section. In like manner, as the Elberta ripens in sequence

progressively northward in the various peach districts, the peach season from more southern points comes to an end with the close of the Elberta season. Later varieties from southern points would not compete successfully in the northern markets with the Elberta ripening at the same time in sections more advantageously located with respect to distribution.

Not only is the foregoing situation a vital factor in the peach industry, but the feasibility of extending it into any new territory, even with every other condition favorable, will hinge rather definitely on the sequence in the ripening of the Elberta variety there in relation to its time of ripening in other sections. At present, the markets are usually well supplied with that variety practically throughout the peach season. There is little use in developing new peach areas which merely add to an already adequate supply, but if a careful study of the markets should reveal a period of even a few days when the supplies of peaches are regularly short of the demand, the development of orchards in some area suitable for peaches, and where they would ripen during the period of low supplies, might prove very profitable.

The supplanting of the Elberta variety in some of the large peach-growing regions might change the details of orchard expansion, but not the general principle covering the choice of location with respect to the sequence of the ripening of the fruit in different sections. This applies especially to the less perishable kinds such as the apple or pear of which numerous varieties of each are extensively grown. The problem of a continuous and adequate supply of most other kinds of fruit may be met by the selection of varieties that ripen at the desired periods rather than through the selection of a section in which to grow a particular variety ripening at a particular time.

Other economic factors also require attention, such as availability of suitable labor, convenience of obtaining orchard and packing-house supplies, the community interests in their relation to the fruit industry, cooperative organization among fruit growers, and any other local features which may have bearing in any way on a regional enterprise.

The Nursery in Relation to Fruit Growing

The foundation of every fruit plantation, be it orchard, vineyard, or berry field, is suitable young trees, vines, or plants which ordinarily are produced in the nursery, though many commercial berry fields are also sources of new planting material. The growing of nursery stock is a highly specialized art in horticulture. A specialty signifies a specialist. Not many specialists in fruit growing are also specialists in the art of propagation and growing nursery trees. A fruit grower who undertakes to grow nursery trees without experience in nursery work is likely to produce so large a proportion of poor trees that those fit to plant prove more costly than he may realize. The use of poor nursery stock simply because it can be bought for less money than high-grade stock usually proves costly in the end because of unsatisfactory growth after it is planted. However, the grower should not go to the other extreme and assume

that the highest-priced trees listed by a nurseryman are necessarily the best for him to order. In considering the relation of the nursery to fruit growing, it should be noted that practically no fruit variety comes true from seed. It follows therefore that trees and other fruit plants must be multiplied by asexual methods—budding, grafting, cuttings, layering, by the use of suckers, sprouts, or other vegetative parts. As a rule, tree fruits are propagated by budding or grafting, or by both of these methods. The buds and grafts are placed on small seedling trees grown for the purpose. Here a phase of the nursery industry itself becomes specialized, the growing of seedling fruit stocks being largely the work of nurserymen who specialize in their production. However, certain kinds of stocks are habitually grown by each nurseryman for his own use and budded without transplanting. Peach stocks furnish an outstanding example of this kind. A seedling stock is, therefore, the foundation of every fruit tree that is planted in the orchard, unless, of course, some special method to gain a particular end is adopted. Such methods do not concern the rank and file of fruit growers and are passed here with a bare reference to them.

Methods of Propagation

An entire seedling may be used in propagating each tree, or the roots may be cut into pieces 2 or 3 inches in length and one piece used for each scion. The latter is known as a piece-root graft, the former as a whole-root graft. If propagation is by budding, an entire root stock is used for each tree produced. Grafting is done when both stock and scion are dormant; budding, during the summer season when the bark of the stock can be peeled, or is said to "slip" readily and when well-developed buds of the current season's growth can be obtained.

Propagation by cuttings, layers, runners, sprouts, or by use of other vegetative parts varies with the kind of fruit concerned. In general, these methods are used in increasing the berry fruits—raspberries, strawberries, currants, grapes, and others. Layering in one form or another is employed in propagating gooseberry plants; also, in certain instances for tree fruits; quinces for example are propagated to some extent by this method. It is used especially, however, in case of the quince in propagating stocks on which to bud other varieties. More or less peculiar to this fruit, certain varieties of quince propagate by mound layering more readily than do most other sorts, and one variety, the Angers, is largely multiplied in this way for stocks to be used in propagating other quince varieties.

Referring again to fruit stocks produced as seedlings, it should be observed that their quality and character are apparently of much greater importance than has been believed heretofore. In recent years, rather definite convictions have arisen among fruit growers, nurserymen, and investigators that selection in stocks has a bearing on the character and development of individual fruit trees that is comparable in its relation to the future of the tree with the selection of parent trees, or even individual limbs, from which buds or scions are taken for propagation. Although more or less mass selection of stocks has been practiced for an indefinite period in the past,

it is a recent conception that the individual seedling stock is a unit in itself and that every seedling stock differs from every other seedling stock as truly as do the seedling trees grown from the seeds of the same kind, or even of the same horticultural variety. The statement above that fruit varieties do not come true from seed is merely another way of saying that such seedlings differ from one another. It is no less true of seedling stocks than of seedling trees grown to fruiting age.

It is now believed that many of the tree differences that are apparent in practically every block of fruit trees of the same variety—differences in vigor of growth, productiveness, relative resistance, or susceptibility to injury from cold, and in other ways—are due in part at least to differences in the seedling stocks on which the trees were propagated. The exact extent to which this conception may be borne out by facts is somewhat speculative at the present time. Considerable investigational work now in progress was planned with a view to determining the value of discriminating selection of seedling stocks as compared with the usual practice; also the practicability of the asexual multiplication of selected stocks that have proved superior. This line of investigation of fruit stocks was too recently inaugurated to have yielded far-reaching results at this time. The fact of wide variability of seedling stocks, even when graded according to the usual commercial standards, has, however, been well established.

Stocks in Use for Propagation

In any broad discussion of fruit stocks mention must be made of the kinds in common use at the present time. An enumeration of them includes: for apples, French crabs, Vermont crabs, selections from our own domestic cider-mill pomace, which rather recently have been gaining some prominence in certain sections; for pears, French pear seedlings, Japan pear seedlings; for plums, myrobalan seedlings, St. Julien plum layers, and seedlings of some of the native wild species of plums; for cherries, mahaleb and mazzard seedlings; for peaches, peach seedlings grown largely from "natural" peach pits gathered in the mountain region of North Carolina, Tennessee, and adjacent regions, but also from selections mainly of particular varieties from some of the large canneries; for apricots, apricot and peach seedlings. Numerous other seedlings are also in use but those enumerated are the principal ones. There is some interchange of stocks in certain cases. Apricot seedlings are sometimes used, especially in California, as stocks for peaches. Peach and plum stocks are more or less interchangeable in propagating peach and plum trees, but as a rule these interchanges are made to meet particular ends as special soil adaptations or for other reasons.

The tree stocks enumerated above provide only for the propagation of what are termed standard trees; that is, those which are expected to attain normal or full size in their habit of growth. Mention should also be made of certain stocks used when it is desired to produce dwarf trees. For apples the dwarfing stocks are what are termed Paradise and Doucin stocks. These are nothing other than two small-growing varieties of apples, ordinarily multiplied

by mound layering, which because of their dwarf habit of growth so influence and restrict the growth of buds or scions worked on them as stocks that they have become the generally recognized dwarfing stocks for apples. However, investigations made by the Wye College Experiment Station at East Malling, England, have shown that Paradise stocks, the variety most extensively used, vary greatly in habit and vigor of growth, and in their effect on the vigor of the resulting tree when they are budded or grafted. The work of this station has shown that a large number of different strains of the Paradise variety exist. These have been segregated and the habits of each critically observed as a basis for developing selections having a high degree of uniformity.

Quince stocks are used for dwarfing pears. These consist mainly of the Angers variety which is propagated by mound layering as above stated. Some of the small-growing species of native plums have been used to a very limited extent as stocks for dwarfing peaches, plums, and cherries, but as these trees are normally relatively small when fully grown, as compared with standard apple and pear trees, there is not much object as a rule in undertaking to grow them to dwarf form.

The use of grape stocks in propagating most of the vinifera varieties serves yet another purpose. Vines of most varieties might be propagated readily by cuttings though some varieties root more readily than others. But the vinifera, or European varieties, are, as a rule, highly susceptible to the phylloxera, a destructive insect that attacks the roots. Instead of multiplying vines by cuttings and thus growing them on their own roots, they are grafted on other varieties that root readily and which are resistant to this insect.

The extent to which the American fruit industry is dependent on foreign sources for the seedling fruit stocks used in propagation is probably not realized by the great mass of fruit growers. Although many millions of such stocks are produced in this country, the industry being quite largely centralized at present in eastern Kansas, many other millions are imported from France, Belgium, and Holland.

American growers produce a considerable proportion of the apple seedlings used for stock purposes, but France supplies the bulk of the seed from which they are grown. As already stated, American sources of seed are being developed, but at present they furnish only a small part of what is required. The Japan pear seedling stocks used are raised in this country but not the seed; the French pear seedlings used are largely imported as are most of the different kinds of plum and cherry seedlings.

The production of most kinds of seedling stocks is gradually being extended in several different parts of the country, and American sources of seed supplies are being developed with a view to making this country largely, if not entirely, self-sustained with respect to its principal nursery interests.

The nursery business, as an industry basic to the fruit industry, is highly developed and widely distributed throughout most of the country and the fruit grower rarely need experience serious difficulty in obtaining suitable trees and other stock for planting. The question, however, as to what constitutes suitable stock is difficult to

state in tangible terms. In fact a description that would suit one kind of stock might not adequately apply to some other kind. However, there are certain characters that are common to all good nursery stock. Nursery stock should be true to name; characteristic of the variety in habit of growth and in other respects; possess a good root system and a well-formed top, particularly where the permanent top is largely fixed by the manner in which it is developed in the nursery; and be free from all injurious insects and diseases. In size and vigor it should be coordinate with the age of the tree or other plant besides giving evidence of abundant strength and vitality. In general a medium-sized tree of the age represented is preferable. An overgrown or excessively large tree is relatively heavy to handle and to ship. Often it does not withstand the check of transplanting as successfully as a smaller one, and there are, as a rule, few, if any, compensating advantages for these disadvantages. On the other hand an undersized tree is likely to be stunted permanently, to lack vigor, to be poorly formed, or to possess a poor root system or some inherent weakness or fault which accounts for its small size.

Grades of Nursery Trees

Although different nurserymen grade nursery stock differently and use various terms for the grades, the terms in general usually denote "large," "medium," and "small." These sizes are sometimes designated respectively as XXX, XX, and X. The terms No. 1, No. 2, etc., are also used. In general, the caliper, that is, the diameter of a tree just above the ground, or above the bulge of the union if it is a budded tree, is closely coordinated with the height and size, and it is frequently given as a part of the grade designation.

Obviously size is related to age somewhat closely, and planters use trees and other plants of different ages. For instance, in apples the bulk of the trees sold from nurseries for immediate planting are 2 years old. This means that the tops have made two season's growth in the nursery, though they may lack several months of actually being 2 years old. However, many growers prefer a 1-year-old apple tree, that is, one that has made but a single season's growth in the nursery. The use of 1-year apple trees is, to a considerable extent, a regional practice. A 1-year tree is a straight unbranched whip, whereas a 2-year tree is considerably branched and usually bears the limbs when it leaves the nursery which the grower selects at time of planting to form the permanent top. These branches from which the top or head of the tree develops are commonly termed scaffold or framework branches. In some cases, where apple trees make a rather slow growth in the nursery, as for instance in a region where the growing season is short, a 3-year-old tree may be the choice of the grower. In pears, plums, and cherries, 2-year-old trees are much used, although 1-year-old cherry trees are preferred by many. In peaches, 1-year-old trees are habitually used, while in citrus fruits both 1 and 2 year olds are extensively planted. Grapevines, currant, and gooseberry bushes are likewise planted at these ages. The age of the stock used may be governed by the choice of the planter, the ready availability of one and not the other, or some other factor more or less incidental, rather than for fundamental reasons. The nurseryman's influence in the fruit industry can hardly be

calculated, and his responsibility is heavy, whether it is fully realized or not. In no small degree the economic soundness of orchards and other fruit plantations is determined by the nurserymen who furnish the stock for planting. Moreover, in many instances they serve as advisors to the planters in such important matters as the selection of varieties and the details of cultural practice.

Selection of Varieties for Planting

The variety factor is strikingly conspicuous in the production problems of the fruit grower and consequently in the financial success of his enterprise. If a wise selection of varieties is made in planting the grower is fortunate. With a poor selection the enterprise is foredoomed to failure to a greater or less extent, no matter how favorable the orchard site is, or how intelligently the orchard is managed. A faulty choice of varieties is difficult and costly to overcome.

Adaptability to Conditions

The trend of fruit growing has been westward. As the early settlers came and developed an agriculture, they brought from their former homes across the sea the varieties of fruit that they liked, or they sent back for scions and seeds. Varieties, therefore, developed which were adapted to the conditions along the Atlantic seaboard where the early settlers colonized. Varieties that failed because they were not adapted soon dropped out of sight. As the people moved westward they took with them the fruit varieties, especially of apples, which had been developed in the East. There are men still living in Iowa, Minnesota, and Wisconsin who went to those States as boys or in young manhood and who recall vividly the experience of the early settlers in that part of the country, who, planting the varieties which they knew in their former homes, saw the trees fail utterly because they were not hardy enough to withstand the winter conditions. The development of varieties adapted to the upper Mississippi Valley region furnishes one of the many fascinating stories of pioneering in American fruit growing. On the basis of early failures a group of varieties peculiarly adapted to this region has been developed. This story, if fully expanded, would take explorers to Russia for the purpose of procuring hardy varieties of apples from some of the extremely cold regions of that country, several hundred of which were brought to the United States and tested in many sections. A number of these Russian varieties are now extensively and widely grown in this country, but one of the large contributions made to American pomology by these importations was the furnishing of exceedingly hardy varieties that have been much used in breeding new sorts. From this work the varieties that are now grown in the upper Mississippi Valley have mostly come. Breeding new and better varieties for this region is still in progress, and probably greater actual progress has been made in recent years than in any previous period in the history of fruit growing in this part of the country.

What occurred as people sought the frontiers, when the Mississippi Valley was a region almost inconceivably far west, was re-

peated as the Oregon Trail came into being and again in more recent times as the irrigated valleys of the intermountain and Pacific coast States have been planted to fruit.

The story of the covered wagon transportation of nursery stock to the Northwest in an early day is now one of romance. It must have been a fighting reality when it was taking place! But the point in the present connection is that the nursery stock which was used represented eastern varieties. There were no others that it could represent. Fortunately, however, for the early fruit growers of the Northwest, as well as for those in many other western sections in which a fruit industry is a comparatively recent development, the eastern varieties found a more congenial home than they did in the upper Mississippi Valley. As a result, the deciduous-fruit industry of the intermountain and Pacific States is largely based on varieties either of eastern origin or those introduced into the East from foreign sources, and which in due course found their way to the West. There are, of course, striking exceptions to the last statement so far as particular varieties are concerned. In fact, the sweet-cherry industry has very largely developed its regional varieties, and some of the leading berry varieties are likewise of local or regional origin. Yet the general statement applies.

A very different condition prevails from that just outlined in case of the subtropical fruits in California, and for that matter in Florida and in other parts of the country where the climatic conditions permit of growing subtropical fruits. In California the most important varieties of subtropical fruits grown, with few exceptions, are not only not of local origin, but most of them came to this country as alien varieties. Many of these have gained an importance and a place in industry quite unknown for them, even to-day, in the land of their nativity. It is true, on the other hand, that the conditions under which some of the important subtropical fruits have developed in Florida, and especially citrus fruits, have resulted in important varieties of regional origin more generally than in other subtropical fruit regions of the country.

Mention should also be made of the native fruits which in some parts of the country have been so developed that they contribute largely to the welfare of the people and to the fruit industry. Obviously the varieties in cultivation are of native origin, though many have become widely distributed. In the present connection, however, little more is needful than to enumerate the more important native fruits with regard to the "variety question." In many respects grapes stand preeminent among the native fruits. In the range of adaptability of the numerous varieties, taking them as a whole, and in the number of ways in which they are used, there is perhaps no other native fruit that exceeds them. As will appear elsewhere, the varieties of the bunch grape of which the best known member is the Concord, and which in their different forms represent a considerable number of different botanical species, cover a very large part of the country in their range of adaptability. Again, the varieties of the Muscadine group, of which the number is limited, occur only in the south Atlantic and Gulf States. In the region where the Muscadine varieties are at their best it happens that the bunch grape varieties, as a group, are not well adapted.

The native plums, in like manner, hold a place of considerable eminence. There is perhaps no other fruit, including its several native species, that is more widely distributed throughout practically every part of the country than the plum. Although the greater proportion of the named varieties of native plums that have been introduced into the trade represent not more than two or three botanical species, a considerably larger number of species have contributed a few sorts that have been named and are in the trade. It is because of this fact that the native plum varieties, taken as a whole, represent so wide a range of adaptability. Among them are those which endure the extremes of the winter temperature in the far North, and the long, hot summers of the South, including those which may be grown in a climate that approaches subtropical, and others which succeed fairly well under the conditions of limited moisture in the Great Plains area.

There are also the raspberries, red, black, and purple varieties—the latter hybrids of the other two forms—the blackberries, dewberries, strawberries, gooseberries, and numerous others, many of which have not yet been brought to such a stage of domestication as to be represented by any named horticultural varieties.

In the foregoing discussion of fruit varieties the underlying theme is the adaptability of varieties to the conditions under which they are grown. In a smaller country, or one in which the conditions in its different parts are less diverse than ours, fewer varieties would meet the needs and desires of the growers. But where such wide ranges of temperature, moisture, and other climatic factors prevail, where soil differences are almost endless and the market requirements are widely diverse, many varieties are inevitable in the development of a comprehensive, nation-wide, or even world-wide, fruit industry—for it is true that some of our fruits go substantially all over the world. The number of varieties of the different kinds of fruit comprising the product that goes into commerce varies greatly. The bulk of any kind of fruit marketed may consist of only a couple of varieties as in the case of oranges in California where the Washington Navel and the Valencia make up nearly the entire crop, about equally divided between the two; or as in peaches where there is a single variety, the Elberta, that is conspicuous above all others but which is supplemented by many other varieties of lesser importance which ripen both earlier and later; or a large number of varieties of much prominence may exist as in the case of the apple.

The fact that the needs are met by a few outstanding sorts of certain kinds of fruit may mean that the few have a wide range of adaptibility which permits them to be grown successfully in many diverse regions, as is true of the Elberta peach, or it may mean that the industry is regionally restricted as in the case of citrus-fruit growing, thus requiring no very wide range of adaptability. However, in the latter case experience may have demonstrated that for economic reasons a minimum of varieties is desirable. In fact, there is a rather well-marked tendency to reduce to as small a number as possible the varieties of all kinds of fruit grown for commerce.

The summation of the discussion thus far may be expressed in the statement that a primary fundamental in choosing a variety for planting in any section is its adaptability to the conditions under

which it is to be grown. The success of one region over another in the marketing of a variety grown in each may easily exist in the better adaptation of the variety to the conditions in one, as compared with the other; and better adaptability may mean better development of the fruit, better finish (appearance), greater regularity of crops, larger yields, greater vigor of tree, or any one of several other factors.

Suitability to Purpose for Which Grown

Hardly less important than the adaptability of a variety is its suitability for the purpose for which it is desired. This is obvious. It is clear that a variety intended for long-distance shipment would be of little value, however fine its eating quality, if it lacks good shipping quality. A variety of apple reaching full maturity in July, however desirable for that season, would be utterly valueless if one of long-keeping quality was wanted.

The relation of the variety in all of its numerous qualities and characteristics to the satisfaction with which it may be used in different ways or in the making of different product is not generally realized. The importance of this factor is perhaps being emphasized in the wider use of fruits now as compared with earlier years. The large place in industry of the special-purpose variety in no degree contradicts this proposition. The planting of varieties of peaches especially adapted to the canning industry has been done for a long time in California, and varieties still more suitable to the needs of this industry are being earnestly sought at the present time; likewise special varieties are grown for drying. There is the table grape variety; the raisin variety; and, formerly, the wine variety. A high degree of perfection in dessert quality of strawberry varieties has long been recognized, but a satisfactory canning strawberry is still lacking. Such a berry must, above all else, retain its form and its color when canned. None now in the trade adequately meets these requirements.

Though these declarations are largely self-evident and the facts recognized, it is not so commonly observed that certain varieties, for instance, of apples, are much better for fresh juice making, that is, they yield a much more pleasing beverage, than others, and that some produce a much more attractive evaporated product than others. It is of frequent note that some varieties are much better for cooking than others, while the apple variety of high dessert quality is of course separate and apart from others in the esteem of the connoisseur. But to many, perhaps to the majority of consumers, an apple is simply an apple without conscious recognition of varietal differences or qualities.

This status of the variety problem may be safely said to result from a general lack of appreciation of its significance and bearing, not only by the consumer but by every representative of the industry from the grower, or even the nurseryman, through to the ultimate consumer of the fruit. As indicated, the general-purpose variety that is good for use in the fresh state, satisfactory for cooking and desirable for other uses must fill an even larger place than it does now, but the interests of all will be far advanced when the consumer learns better than to use, for instance, for dessert purposes, an apple variety that has merit only for cooking.

Marketing a product of poor grade or quality in great quantity tends to restrict consumption and therefore to depreciate the price of the whole crop. It follows, therefore, that wise and discriminative consideration of the variety problem by the grower is essential, especially from the standpoint of increasing the consumption of fruit.

Sequence in ripening.—Another feature of great consequence is the sequence in the ripening of varieties in an orchard where the grower desires a uniform supply without interruption over the longest period possible. The selection of varieties to ripen in sequence requires an intimate and wide knowledge of them and their habits; otherwise, breaks will occur in the order of ripening or the supply will fluctuate unduly. Even at the best, the grower is likely to find that varieties fully suitable to his needs do not exist or that there is variation in ripening in different seasons due to the diverse response of varieties to seasonal conditions. Such behavior of varieties is not uncommon, but is little understood.

Self-sterility in fruit varieties.—Self-sterility, as the term is used in fruit growing, is the inability of the pollen produced in the blossoms of a variety to fertilize the ovules or embryonic seeds in the blossoms of the same variety. A self-sterile variety does not set fruit and develop it to maturity unless its blossoms are fertilized by pollen from some other variety. Therefore, in planting such a variety provision must be made for cross-pollination by planting with it another variety that blossoms at the same time, or at least with an overlapping of the blossoming periods of the two sorts. The common honeybee is the most important agent in cross-pollination. Conversely, a self-fertile variety is one where the pollen produced by a flower is potent in fertilizing the ovules of the same flower. Such a variety may be planted as an isolated tree far from others or in large unmixed blocks and yet be abundantly fruitful. The fact of self-sterility is comparatively recent knowledge having been first developed about 30 years ago in relation to pear varieties. Since then, and especially during the last decade self-sterility studies have been made on many kinds and varieties of fruits. Every conceivable gradation exists between the extremes of complete self-sterility in some varieties and perfect self-fertility in others. Perhaps the degree of self-sterility that is the most baffling and disappointing to the inexperienced grower is where an excellent crop of fruit apparently sets, develops for a time, perhaps even until nearly full size is reached, and then the fruit begins to drop, and continues to do so until nearly all is on the ground but too immature to be of any use. In such a case the fruits are perfect externally when they drop, but if cut open it becomes evident that the seeds are abortive, thus indicating imperfect fertilization or lack of fertilization of the embryos.

Another characteristic having the same practical results as self-sterility yet not due to any inherent incompatibility of the pollen with the other flower parts concerned is that represented by dioecious species which produce two types of blossoms, staminate and pistillate, each on different trees or plants. Those producing staminate flowers only never bear fruit; those with pistillate blossoms only produce no fruit except as their blossoms are fertilized by pollen from the staminate plants. The latter condition, however, has cer-

tain exceptions, as for instance some of the Japanese persimmon varieties and the Adriatic type of figs, which develop fruit to perfection without pollination.

The Smyrna type of fig, however, requires pollination. Otherwise the fruit drops before it is mature. The manner in which these figs are pollinated is one of the most striking of nature's methods which concern fruit growing. It is given in some detail on page 236.

As different fruit varieties have been investigated with respect to self-sterility, the extent to which it exists has caused surprise. As the matter now stands, many varieties of apples are known to be sterile with their own pollen, also most pear varieties; it is the rule with native and Japanese plum varieties so far as determined, and common among European or domestica plums, also with sweet cherries, the latter being intersterile among varieties in many cases. The same is true of grape varieties, many being self-sterile as well as sterile with the pollen of certain other sorts. Some blackberry varieties must be cross-pollinated and many strawberries must be planted with other sorts. With the latter, however, the case is somewhat different and hardly falls within the scope of self-sterility as the term is generally used, the need of pollen from other varieties in some cases being due to the absence of the flower parts in which pollen is produced. Peach varieties with few exceptions are fertile with their own pollen, as are sour cherry varieties. Apricot varieties are considered highly self-sterile, and no variety of almond is known to be fertile with its own pollen. The foregoing is only a partial statement of the self-sterility problem, but it is sufficient to indicate the character of the self-sterility problem and to suggest the extent to which it enters into the production of fruit. Moreover, as studies of self-sterility are extended they add to the number of varieties known to possess this characteristic. Self-sterility is not in all cases a definitely fixed character. A variety shown to be self-sterile in one region may prove to be habitually self-fertile in another region; or, there may be variation in this respect from season to season in the same orchard, Moreover, it is a common observation that many varieties regarded as highly self-fertile produce more abundantly where cross pollination prevails.

The fact that self-sterility is only one of several causes of unfruitfulness calls for brief comment in this connection. A fully self-fertile variety may blossom abundantly and still fail to set fruit. Among the reasons therefor may be winter injury to the pistils of the flowers, this being the flower part usually the most tender and therefore the first to suffer; low temperatures during the blossoming period which, though not killing any of the flower parts, inhibit the proper functioning of the pollen; the occurrence of heavy dashing rains at critical stages of the blossoming period that wash away the pollen; the prevalence of severe winds which seriously restrict the activities of bees, this applying especially in case of self-sterile varieties which receive no potent pollen in the absence of bees; the occurrence of a widespread attack of some disease destructive to the blossoms; and faulty nutritional conditions of the trees. Other causes of unfruitfulness may occur under some conditions, but those named are the more frequent.

Development and Improvement of Varieties

The need of developing improved varieties of all kinds of fruit is fully recognized—varieties better suited to particular purposes and better adapted to different regions and conditions, as well as those having better dessert, shipping, storing, and keeping qualities.

The perfect variety does not exist. Although there is little, if any, inherent incompatibility of desirable qualities, the fact remains probably without exception that every variety which approaches appreciably near the ideal in some particulars is faulty in others. On the other hand, it may be observed that a variety especially desired for home use because it is so tender and delicate in texture is not likely to have good shipping quality.

With few exceptions the important fruit varieties now in cultivation in the United States originated as chance seedlings; that is, the original tree in each case sprang from a seed that fell by chance in the spot where it grew, or if the seed was planted by man with serious intent, it came from a fruit which developed as a result of natural fertilization and without the exercise of any selection or choice on the part of man as to its parents.

Whatever measure of perfection is now represented in the leading fruit varieties has developed, with rare exception, as a result of Nature's own methods, unaided and without any speeding up or selective guidance on man's part. Nature's object is served when an abundance of viable seeds to perpetuate the species is produced. Man's ideals call for something very different from, though not necessarily incompatible with, Nature's needs. Therefore, man undertakes to improve on Nature in the production of new varieties, employing methods of breeding and selection which he has devised. The details of fruit breeding and the methods followed have no place in the present discussion. Only certain general considerations may be stated here.

Improvement by breeding.—Efforts to develop new and better fruit varieties by the generally employed methods of plant breeding are in progress with practically all the different kinds of fruit that are of recognized importance. These efforts are directed toward improvement in dessert quality, storage, and shipping qualities, the procuring of greater hardiness in tree and bud with respect to cold resistance, the development of varieties ripening at particular times and to meet special needs in different forms of utilization as peach and strawberry varieties for canning, not to enumerate other lines of equal moment.

In some lines of breeding, progress is being made by combining through breeding the qualities represented within the species; in others, the hybridizing of different species offers greater promise in certain directions. Thus, some of the newer and more valuable plum varieties are hybrids between Japanese and native varieties. Some of the most striking developments in citrus varieties have been obtained by combining different species and the development of extreme hardiness in new plum varieties especially adapted to the cold climates of the far North has come about in like manner.

Improvement by bud selection.—Though a part of all improvement by breeding is rigid selection, there is another phase of improvement by selection that must be mentioned. Reference is made

to that selection which takes advantage of any sporting branches or other mutations which appear from time to time and which may represent marked improvement in character of fruit as compared with the parent tree.

This phase of selection has thus far been applied more extensively to citrus fruits than to other kinds, although varieties of merit in other fruits that have originated as mutations are in the trade. It is possible, even probable, that mutations occur in citrus more frequently than in most fruits. However, in this group the off-type bud variations are more apt to represent inferior developments than improvements. Many such mutations are characterized by low productiveness correlated with marked vigor of growth and by undesirable fruit characters.

It has been proved beyond any reasonable doubt that the fruiting and vegetative characters of many citrus mutations, at least, are transmitted to progeny trees propagated from them. Thus a nurseryman, by chance, taking buds for propagation from a sporting or mutating limb that possesses the inherent qualities of low yield and unusual vigor of growth gives rise to a group of trees having the same characterstics. Then, subsequently, in cutting buds for propagation a nurseryman is naturally attracted to such trees by their vigor and apparent desirability on this account. In this way many citrus groves have come to possess a substantial proportion of trees of such character.

In these cases improvement of the nonproductive but strongly vegetative trees is possible through top-working them with buds selected from superior high-yielding trees with a known production record. This course does not result in improving the character of the fruit as compared with the normal type of the variety, but it does improve the crop of the grove as a whole.

Improvement by selection is also operative in the amelioration of fruits from their native habitats. Many varieties of the native fruits have developed in the wild and have been domesticated simply as a result of some one being attracted because of the merits of the fruit of the original plant or tree where it grew from a seed dropped by chance. Most of the native plum varieties have originated in this way, a considerable number of the berry varieties, most, even if not all, of the native persimmons and some other fruits. The bringing of such varieties into cultivation has been in reality a matter of selection.

The variety list for some kinds of fruit is enriched from time to time through the introduction of new varieties from foreign sources. In fact, in certain cases many of the varieties grown in this country are of foreign origin. This is true of avocados, mangos, Japanese persimmons, and certain groups of some other kinds of fruit of which the European or vinifera grape is an outstanding example; the choice dessert pear varieties also are largely of European origin.

Many introduced varieties prove to be of even greater value for use in breeding new sorts than they do in their original form. Thus, some of the plum varieties originating as hybrids between Japanese and native varieties are doubtless more valuable in the trade, regionally at least, than any of the parents.

Orchard Development and Cultural Practices

Preparation of the Soil

Though the details of the preparation of the soil for the planting may vary somewhat with different fruits, there are certain, broad, basic principles that apply generally. Thorough and complete preparation is essential to the best results. Although various compromises are possible without defeating the ends in view, anything that falls short, in effect, of deep plowing and thorough pulverizing of the soil by harrowing or otherwise before the trees or plants are set out is destined to prove costly. "Deep plowing, complete pulverizing and thorough preparation" expresses only relative conditions and the terms may represent different ideals to different growers. For instance, a furrow 5 inches thick is deep plowing by the standards of some, while to others deep plowing may mean 8 or 10 inches; to another, deep plowing is not expressed concretely in inches but by the limits imposed by the motive power available. As to thoroughness, pulverizing "as mellow as an ash heap" is somewhat expressive; likewise, "as well prepared as for planting corn" forms a mental concept that stands for a tangible ideal.

Only a single suggestion concerning compromises in preparation is needed by way of illustration. Many orchards are planted on land but recently in forest. The stumps still remain in the ground when its preparation for orchard purposes begins. Practically complete removal of them is highly desirable before planting the orchard trees, but in many instances to do so would delay the time of planting beyond the grower's wish. The future of the orchard in such a case is not likely to suffer materially if the stumps are removed for several feet in a strip marking each tree row, the soil in that strip thoroughly prepared, and the remainder of the clearing and preparation delayed until later. In such procedure, however, it is essential that the width of the originally prepared strips be extended in advance of the needs of the trees. Moreover, that need, represented by the extension of the roots, will progress much more rapidly than the average grower is likely to anticipate. Another caution—a detail by way of illustrating a principle—is in regard to planting on land recently in sod. Unless plowed well in advance of the time of planting, so that the sod will have time to decay, the grass roots and other vegetation are likely to prove bothersome in planting the trees.

It is likewise a mistake to plant fruit of any kind on soil that is in poor physical condition from the depletion of its humus supply. Trees or other plants set on soil in such condition will, as a rule, make a poor start; this may prove to be a permanent check. Before planting the soil should be put in good tilth in order that the newly developing roots may readily make intimate contact with the soil particles. Although the thorough preparation of the soil, already emphasized, works in this direction, the necessary results can not be procured where a soil is deficient in humus; neither can the biological activities in the soil necessary to productiveness take place under those conditions. Where an abundant supply of animal manures is available a depleted content of humus may be restored by its use with little delay. Otherwise green manure or soil improvement crops to be plowed under must be grown. Several such crops

may be required in case of a soil badly in need of an increased humus supply. By proper planning two or more of them may be grown in a single season.

Another basic feature not less important than those stated is good soil drainage. Fruit trees will fail on a poorly drained site in a degree closely comparable to the drainage conditions. Moreover, the chemical and biological activities essential to productiveness can not proceed normally, if at all, under those conditions.

Many other details call for the planter's attention, but the foregoing considerations are somewhat typical.

Establishing the Plantation

An apple or pear orchard is planted practically for a lifetime; a peach orchard for 15 to 20 years, more or less, depending on the region and the care it receives; an orange grove for perhaps 35 to 50 years. At the least, this type of enterprise is a long-time activity. It, therefore, behooves the grower to consider well all of the requisites in order that the orchard may not be a monument to his folly. The case is somewhat different with strawberries and most other berryfruits in the far-reaching effects of costly errors, though the difference is in degree, not in character. Most berry plantations continue, at best, for but a few years without renewal, and in replanting the lessons of costly errors in establishing them can be taken advantage of fairly promptly. The cranberry is a striking exception to this, however, the oldest planted field still being in good condition after producing for 75 or 80 years.

Details of establishing an orchard or small-fruit plantation following the preparation of the land include a number of important steps or operations. The varieties to be planted usually would have been selected and the stock ordered before the land was prepared to receive the plants. If delivered in advance of the time of planting, the stock whether trees or small berry plants, should be unpacked and heeled in, in order that it may be held without deterioration until the time for planting arrives (fig. 24). It is of the highest importance that the roots be kept in a fresh condition and that the loss of moisture from trunk and branches be prevented as far as possible.

Time of planting.—The time when planting may be done varies with the region and the fruit. In the North most fruits are planted in the spring as early as the soil can be put in suitable condition and before the buds start. If the buds on fruit trees have started into growth when set out, the loss from trees that fail to grow will usually be greater than if they are completely dormant. This is emphatically the case with cherry trees, and suggests the advisability of fall planting whenever it is possible. In the middle latitudes where the winter extremes of temperature are comparatively mild, planting in the fall is much practiced though spring planting is successful. In this area winter injury to peach trees or other tender stock sometimes follows fall planting when apple trees and the more hardy things escape. In the South, with its mild open winters, planting is possible at almost any time during the dormant period, as convenience dictates. In the subtropical regions vegetation becomes less active during the winter, or cooler months, and it is during this

period that most citrus and other subtropical trees and plants are set out. In the semiarid regions where there is no irrigation, as in the Great Plains area, and where excessive evaporation due to many desiccating winds prevails, planting should be done only in the spring. In those sections where there is a rainy in distinction from a dry season, during which for months at a time there is little or no rain, planting may need to be done after the ground warms up following the rainy season, this being particularly true where that season occurs during the winter months. Strawberry plants are sometimes set while in an active condition in late summer or early fall. Other departures from the customary planting periods occur but can not be discussed in detail here.

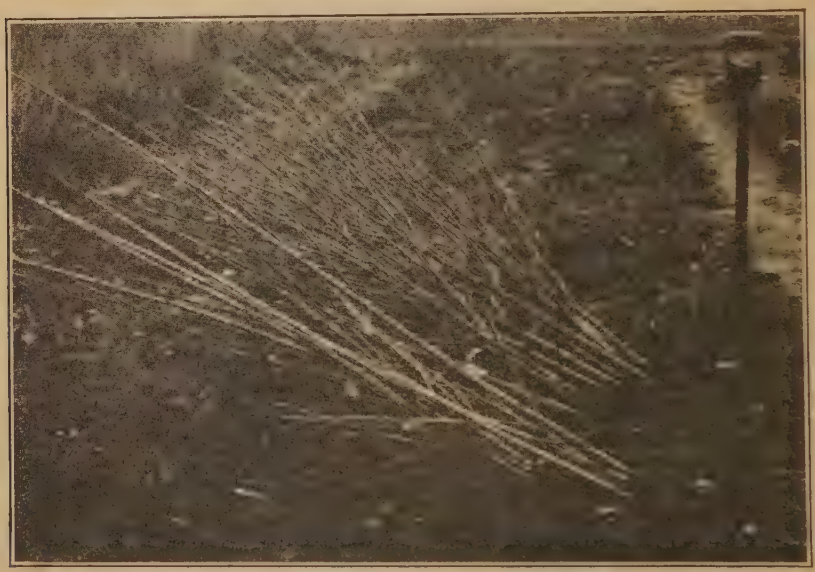


FIG. 24.—Fruit trees heeled in to protect the roots against drying while awaiting permanent planting

A caution should be noted in the fall planting of deciduous fruit trees. It has to do with the time factor. There is a tendency to dig the stock from the nursery before it ripens naturally and the foliage drops normally, thus handling it and delivering to the grower when in a somewhat immature condition. Although it is difficult sometimes to follow the ideal, as when the fall is warm and rainy and the conditions are favorable for growth, the normal ripening of the trees before they are dug should nevertheless be the guide as to time of digging and followed as far as conditions permit.

After deciduous trees become dormant they require a period of rest. Until that period is completed the buds will not start again, even though the conditions for growth are favorable. For this reason, if trees are planted too early in the fall it results in their remaining inactive in their new position, the roots not functioning and the moisture in the trunk and limbs being constantly transpired. The tendency in fall planting is doubtless toward doing it too early rather than too late. The general principles in regard to time of

planting are thus indicated, though no fixed date for planting in either fall or spring can be given.

Systems of arrangement.—A prospective planter must of necessity determine what system of arranging the trees on the ground he will adopt, and the distance apart which he will place them before he can determine how many to buy. The spacing will usually have more influence on the number of trees required than the system of planting. Too close planting is probably the most common fault in planning an orchard. There is some latitude, however, for a given kind of fruit depending on the variety as concerns habits of growth, fertility of soil, region, and other factors. Nevertheless it is rarely practicable to vary the distance between the permanent trees or the rows in an orchard once the spacing is decided, even though certain varieties might permit it. The grower should give searching consideration to the matter of spacing since an error at this point projects itself into the entire life of the orchard. The final decision, however, becomes a matter of detail which rests on conditions more or less local.

Most tree fruits are planted on the square system. That is, the distance between the trees in the row is the same as that between rows. An alternate or triangular system is sometimes followed, especially when trees that are to be permanent are interplanted with others, commonly of another kind of fruit, as apples with peaches. This plan admits of considerable variation as to details.

Another system, the hexagonal, is sometimes used with apples or other kinds of fruits or with nut trees that are spaced relatively far apart. By this system every tree is equidistant from every other tree in the orchard. Thus with a given distance between trees a larger number may be planted on a given area than by any other system. Every tree (excepting the outside rows) is at the apex of six equilateral triangles, assuming lines drawn from any tree as a center to each of the six adjacent ones and then these six surrounding adjacent trees connected by lines. To effect this system, the alternate plan is followed in part, but as may be seen, the rows are not as far apart as are the trees in the rows. It is by means of the gain thus made that a larger number of trees at a given distance apart can be planted on a specified area than by any of the other systems of tree arrangement.

The only other system of arrangement that needs to be mentioned here is the one sometimes followed on steep and irregular slopes and hillsides where the rows are made to follow the contours of the land. This places the rows where each one follows a course that is substantially level, though adjacent rows may not be equidistant apart at all points. By such an arrangement, soil erosion may be largely prevented, especially if terraces are gradually constructed along the rows. In fact, terracing before planting following the contours of the land is sometimes done (fig. 25).

The details of laying out an orchard site, of preparing the holes for the trees, and of placing the trees in the holes, must be very largely omitted beyond a bare mention which merely places these operations in the present phase of the general discussion. Only certain points more conspicuous at this time than others can here be elaborated.

The use of dynamite in the preparation of the holes for trees requires mention in this connection. Though definitely having its field of usefulness, the use of dynamite should be regarded as a special method to meet special conditions rather than a practice to be followed as a matter of course. A soil or site inherently unsuited for orchard purposes can not be made suitable for such use by exploding a charge of dynamite in the soil in each tree position. In fact, under some conditions and if improperly managed such a procedure may prove injurious. Such a condition may be expected if the dynamite is used in a clay subsoil when the latter is too moist. The explosion will then blow a "pot-hole" and compact the surrounding soil instead of loosening or shattering it as is desired. The existence of such a hole may not appear on the surface until at some later time, it may be after the tree has been planted, the surface soil settles into it. Perhaps the one unquestioned condition

FIG. 25.—An apple orchard with rows following the contour of the land on which they are planted. This is an aid in preventing soil erosion

where dynamite may be used advantageously is on a site inherently suited for fruit except that there is a thin stratum of hardpan a short distance below the surface and below which the subsoil is good for fruit growing. In such a case the hardpan may be broken up successfully by the use of a suitable explosive.

The matter of preparing the holes has important aspects. They should be made large enough to receive the roots in their natural positions without bending them, and deep enough so that when a tree is planted and the hole is filled even with the surface the tree will stand an inch or two deeper than it stood in the nursery before it was dug.

Pruning at planting time.—Pruning the top of a tree at planting time has an important bearing on its future, as it is then in large measure that the type of tree to be grown is determined. Such features are largely settled as height of head; type of head, that is, open center, central leader, modified central leader, or otherwise; position of scaffold limbs, and still other aspects, all of which have to do with the tree in its later life. It becomes highly important, therefore, for the grower to anticipate the future of his trees

at the time they are planted and to handle them from the very outset with definite ideals and conceptions in view. Those ideals and conceptions will develop as a result of personal preference based on experience, on observation of the results of others, and on a knowledge of inherent tree and varietal characteristics. No one type of tree or detail of practice is best under all conditions.

Different Systems of Culture

Systems of culture refer to the manner in which the soil is maintained in an orchard. Hardly any two growers follow the same identical plan. However, the numerous practices may be grouped rather readily into three main systems, clean tillage, clean tillage and cover or green-manure crops, and sod culture. To these might be added mulching which is closely allied to sod culture, and intercropping which in effect may be substantially either clean cultivation or cultivation and green manuring. Combinations of these systems are also effective under some conditions.

The name used to designate each cultural system is largely indicative of the outstanding feature of the system. Thus, clean tillage implies that the soil in an orchard is cultivated frequently enough to keep the surface in a fine granular condition until midseason and to hold the weeds in complete subjection in order that they may not utilize the soil moisture needed by the trees. Under this system, tillage usually ceases by the middle of July or the first of August, after which nothing further is done so far as cultural practices are concerned until the following spring or at least until the trees become thoroughly dormant in the fall. The season's tillage operations may begin with plowing the orchard or by use of a disk harrow or any other tillage implement that meets the needs.

Clean tillage and cover or green-manure cropping differs from clean tillage in that when tillage ceases in midseason, or sometimes later depending on conditions, the land is seeded to some crop which will furnish vegetable matter to work into the soil. This crop may be a hardy plant such as rye or vetch which lives over winter and starts into growth very early the following spring. This type of crop is correctly termed a covercrop because it makes some growth in the fall and furnishes a cover for the ground during the winter. This is of greater importance in sections where the winter minimum temperatures are low and the ground bare of snow much of the time than where the ground is well protected by snow throughout most of the winter. On the other hand, a green-manure crop, strictly speaking, is one sown solely with a view to providing vegetable matter to add to the soil. In general it is a crop that is seeded when the seasonal tillage ceases and is killed by the first fall frosts. Cowpeas, soy beans, millet, buckwheat, and various others are typical of the common green-manure crops. Clean tillage may in effect become a cover or green-manure cropping system through the spontaneous growth of grass, weeds, and other vegetation after tillage ceases for the season.

The terms "cover crop" and "green-manure crop," though formerly holding rather distinctive meanings, are now used practically interchangeably and without discrimination. This, however, is an

unfortunate disregard of the real meaning of the terms, though it is true that a cover crop also serves the purpose of a green-manure crop because it supplies vegetable matter for the soil while a green-manure crop may meet the needs of a cover crop. Two types of plants are used for cover and green-manure crop purposes—legumes and nonlegumes. The former consists of such plants as the various clovers, cowpeas, soy beans, velvet beans, vetches, field peas, and the like; the latter, of rye, millet, rape, buckwheat, and others. The tillage and cover-green-manure crop system, though not the best under all conditions, is probably the one by which other systems may best be judged.

Sod culture, as the name suggests, is where the soil in an orchard is not cultivated but is covered with grass, clover or some other kind of sod (fig. 26.). As a rule, the growth of vegetation is mowed two or three times during the season and is left on the ground where

FIG. 26.—Sod culture in a New England apple orchard

it falls to serve as a mulch. The latter, as it decays, works down into the soil forming humus. In the irrigated fruit sections of the West and in the Pacific Coast States alfalfa is extensively used in sod culture. Moreover in some sections, as in the hot irrigated valleys, the shading of the ground by such a crop is of much importance since it prevents a reflection of the sun's rays which in some cases seem to be so intense that they are injurious to the trees.

A combination of sod culture and clean tillage or clean tillage and cover crops may be employed very effectively under some conditions. Such a case is where the growth of the trees does not warrant seeding down throughout for sod culture, and yet to avoid soil washing or for any other reason some such course is necessary. By adopting sod culture in alternate spaces between the tree rows and cultivating the other interrow spaces either with or without a cover crop all the trees receive the benfits of some tillage, and with sod on half

the area, washing of the soil may be largely held in check. After a short period of years the treatment of the alternate row spaces may be reversed. This plan of procedure has much to commend it in many places. In the young peach orchard shown in Figure 27 another method of combining clean tillage with a green-manure crop is illustrated.

In order to apply these systems of soil maintenance intelligently and effectively the grower must understand what the objects of tillage are and, moreover, he must be able to interpret the behavior of his trees in terms of soil treatment. Because a particular system of culture seems to give the best results at one period in the life of an orchard, it does not follow that some other system may not meet the conditions the most effectively at some other period.

Again, the grower should understand that there is no merit in any system simply as a system. It is solely by the behavior of the trees, so far as any system of soil maintenance may affect them,

FIG. 27.—A peach orchard in August of its second season which is receiving the benefits of both clean tillage and a green-manure crop, cowpeas being grown in a strip in the center of the interrow spaces

that the one employed in any orchard may be judged as good or bad, effective or otherwise.

It has long been taught that a dust mulch maintained on the surface of the soil by frequent tillage was the most effective way of conserving soil moisture. Investigations of the movement of soil moisture carried on by the Office of Dry Land Agriculture for many years seem to show that the principal means by which water escapes from the soil are either by gravity as a result of which it seeks the lower levels and drains away, or else through the transpiration of plants growing in the soil, and that loss through evaporation as a result of the capillary movement of the moisture to the surface has been very greatly overestimated.

However, tillage as a means of destroying superflous vegetation that would compete with the trees for moisture has evidently not been unduly appraised nor has the effect of tillage and the proper aeration of the soil on the chemical and perhaps even more especially on the biological activities in their relation to soil fertility been

either overstated or even fully appreciated. Present concepetions suggest an even greater role for some of the biological activities in the soil in relation to its productiveness than has hitherto been realized.

Therefore, except as the system of tillage employed may be determined by expediency, it is for the grower to study carefully the response of his trees to the treatment he is supplying and to be governed by his interpretation of results as to whether any changes in his methods are desirable.

From the foregoing, it may be seen that there is a close relationship between the moisture supply in the soil and the use of cover or green-manure crops and especially in case of sod culture where there is continuous competition for moisture between the trees and another crop. It is this competition, especially in the first half of the growing season, that often makes sod culture inadvisable or even harmful, whereas the use of the soil moisture by a cover crop late in the season may be advantageous in hastening the maturing of the trees. In a dry fall, the competition for moisture between the trees and a cover crop might prove very harmful to the former.

Of course, in the irrigated fruit sections where water is abundant and under the control of the orchardist, the situation is largely in his hands so far as matters of soil moisture and crop relationships are concerned. For example, in some of the irrigated valleys in the Northwest, sod culture with alfalfa in the orchards has become the prevailing practice, whereas in some of the nonirrigated valleys the growing of any kind of crop in the orchards is precluded, because of an insufficient supply of moisture.

Maintaining the Fertility of the Soil

The fruit grower has no means of maintaining the fertility of the soil in his orchards and other fruit plantations which are peculiar to the special type of agriculture in which he is engaged. He must rely on the same methods as the general farmer—perhaps with this exception, that the latter, as a rule, may have available larger supplies of animal manures than the farmer whose main enterprise is fruit growing. Then, too, the fruit grower labors under limitations not experienced by the general farmer because of the permanent occupation of the land by a single crop. Crop rotation as a part of a program of soil maintenance has little or no application in the plans of the orchardist, whereas it may be an important factor in the production of annual crops.

The use of animal manures.—As a general thesis it may be said that a fruit grower with an adequate supply of stable or barnyard manure for his fruit lands would need to apply little else in the way of plant food in maintaining his land in a suitably productive condition. Much reliance is placed on animal manures by some fruit growers. The case may be cited of one of the prominent citrus growers of the country who established a dairy farm comprising several hundred acres solely with a view to providing a supply of manure for his citrus groves. It was his belief that if the dairy enterprise was only self-sustaining it would be fully worth while because of the value of the manure that was thus made available for his main enterprise.

The use of manure supplies not alone plant food, but organic matter which in turn becomes humus, and without which any soil is relatively unproductive no matter how large quantities of mineral plant foods it may contain. In fact, it is frequently suggested that in many cases the effect of the manure on the physical condition of the soil is of greater importance in relation to productivity than is the plant food which it contains. In turn the physical condition may have a controlling influence on biological changes that affect productiveness in a larger degree than has been realized.

There are no arbitrary limits as to the time of applying manure to fruit plantations nor with respect to quantity. Obviously from the plant-food standpoint the composition of animal manures may vary greatly, depending on the quantity of straw and other absorbents they contain, also on the way they have been handled and the feeding of the animals producing them. Generally speaking, manure is applied broadcast during the winter or in early spring before the seasonal tillage is begun and in quantities up to 10 or even 20 tons per acre.

In some of the citrus groves in California placing the manure in deep furrows in the interrow spaces checking both ways, has proved especially satisfactory and efficient as compared with broadcasting. It is claimed that a given quantity of manure can be made to cover a much larger area of grove applied in furrows and with equally good results than when broadcasted.

The use of commercial fertilizers.—In addition to animal manures, fruit growers use large quantities of commercial plant foods or fertilizers—nitrogen (commonly spoken of as ammonia), potash, and phosphorus (more often termed phosphoric acid). However, the effective, economical and profitable application of commercial fertilizers is a much more complicated problem than is commonly supposed. "What is a good fertilizer for peaches?" "What fertilizer do you recommend for sandy soil?" "How much fertilizer should I apply to my vineyard?" These and other similar questions are frequently asked. They can not be answered in any concrete and specific terms. In fact, of two orchards of the same kind and age standing side by side but with the soil managed differently in previous years, one might readily respond very differently from the other to a particular fertilizer application: such difference even might occur in various parts of the same orchard.

In the first place, a soil in poor physical condition from lack of humus is unproductive without regard to the abundance of plant food it may contain: but a soil in good physical condition may be unproductive because it lacks a single plant food. Phosphorus and potash may be in abundance for maximum production but because of a lack of nitrogen the plant may not function properly and is unproductive as a result.

In such case nitrogen is the "crop limiter." Supplying it in suitable quantity, other things being equal, there would normally be the desired response. Lack of any other plant food may likewise limit the performance of the plant. Supplying more of the plant food or foods already present in the soil in sufficient abundance for maximum performance will be without benefit: in fact it represents waste.

The real problem, then, is to determine what plant food or foods are lacking in the soil, and then to supply the "crop limiter." This

can be done only by "questioning the soil," as a revered professor of agriculture of an earlier day was accustomed to express it. To this might also be added "questioning the plant" as well, since the experienced grower learns to interpret many points in the behavior of his trees in terms of their food requirements. But this, in turn, rests back on soil conditions.

To "question the soil" the grower will need a simple demonstration in a representative part of his orchard consisting of the use of nitrogen alone on certain trees, potash on others, phosphoric acid on others, and finally different combinations of each plant food on still other plats, and then noting the results for several seasons during which the same plant food applications are made annually to the same groups of selected trees.

While even this plan is subject to many uncertainties in exactness of results, fairly strong indications may be expected to occur if indeed there are plant food deficiencies that are seriously limiting the performance of the trees.

The average grower is reluctant to "bother" with the details of such a demonstration besides looking on it as being expensive, but one may well take note of the fact that it is likewise expensive to go on year after year, either applying unnecessary plant foods at large cost, or else withholding some essential plant food—the "crop limiter"—which, if applied might yield results quite out of proportion to the cost involved.

The old idea that the chemist could step in at this point and by an analysis of a soil tell just what plant foods were lacking, ceased long since to have place in the order of things. A chemical analysis of a soil is not necessarily without value, at least theoretically. It might show, for instance, whether a soil was deficient in some essential element. On the other hand, an analysis might reveal certain plant foods in great abundance and yet they might be so locked up chemically as to be unavailable to the plant. The plant's ways are not those of the chemist and the latter has no methods, as yet, by which he can determine how much of the plant food he finds in a soil the roots of a plant can get. A chunk of rock chipped from some bowlder might analyze very high in certain plant foods, but a bowlder would not be a good soil for an apple tree.

During the last 15 or 20 years much experimental work has been done in the use of commercial forms of plant foods in orchards in line with the plan briefly sketched above. At least three outstanding results, strikingly different from one another, and on the face of things somewhat contradictory, have come from these investigations. In certain cases, these results have been very upsetting of earlier teachings in horticulture.

1. Of these results, first, may be mentioned the demonstration that many soils when managed so as to maintain an abundant supply of humus and when properly tilled apparently yield all the plant food that is necessary for maximum fruit production. In other words, some of the experiments have failed to show appreciable effect from the application of any of the plant foods usually contained in a so-called complete fertilizer.

2. Another result, and one opposed to earlier teachings, is the widespread absence of favorable response of fruits to potash. It

was long held that fertilizers high in potash should be used liberally in fruit growing. Many tests, widely distributed, have failed to demonstrate any general response to applications of this plant food, especially in case of the range of soil types widely used for deciduous fruit growing.

3. It was long taught that nitrogen, and especially in quickly available forms, should be applied to fruits with much caution or else an undesirable and harmful stimulation of vegetative growth would occur. In the demonstrations, not only have baneful results failed as a rule to appear, but to the contrary, the use of nitrate of soda or other quickly available forms of nitrogen, in even rather liberal quantities, has given more widespread and more generally beneficial results than any other one fertilizer treatment in the growing of deciduous fruits. This fact, however, does not obviate the need for each fruit grower to "question" his own soil and trees, but the results of widely distributed experiments may consistently give direction to any demonstration that the grower outlines.

The foregoing discussion on the use of fertilizers in fruit growing hardly more than indicates the character of the problem and suggests that each individual orchard or plantation is the place where the grower must very largely solve his own problem—for it is fundamentally individual in so far as settling the question of fertilizers is concerned.

When to use plant food.—Most forms of commercial plant food are applied early in the spring, the exact time not being very definitely fixed but commonly just before tillage is resumed, or in case of a sod-culture orchard, with the beginning of the spring activities. In case of nitrogen, however, in quickly available forms, as nitrate of soda or sulphate of ammonia, the application should be at about the time the buds begin to swell, if it is desired to obtain a response in the setting and development of the current season's crop. If applied after the blossoming period, the results may be expected to show in the foliage, the annual growth and perhaps in the formation later of fruit buds for the next season's crop, but the results in such case may be disappointing so far as the development of the current crop is concerned. If the grower deems it wise to make a very heavy application of nitrogen, a portion put on as the buds begin to swell and the remainder a month or so later, may be good planning.

It should be noted, however, that many details of practice in the use of fertilizers have been worked out for particular soil and other conditions that are more or less local. Any grower, therefore, locating where conditions differ materially from those with which he is familiar, will do well to study critically the methods of procedure followed by experienced fruit growers there, and to adopt them in so far as they prove to be sound.

Thus in some regions where large fruit interests have been developed the soil is little more than clear sand with very low plant-food content. Obviously the fertilizer problem in such a region becomes very different from what it is where the soil is naturally highly productive. In case of a sandy, almost sterile soil, practically all the plant food requirements must be supplied artifically, and commonly in several applications during the year.

Crops to supply humus.—The place of cover and green-manure crops in fruit growing has been rather fully indicated in the discussion of cultural systems. Brief amplification from the standpoint of their relation to the maintenance of soil fertility is here in place. Also, on a preceding page the place of animal manures in soil productiveness was indicated. An abundance of manure would largely do away with the necessity of cover and green-manure crops. They are, therefore, in large measure substitutes for manure of which few fruit growers can command an adequate supply. In this connection, these crops simply produce in the orchard or other plantation vegetation to be incorporated in the soil, and, in its decay, to form, humus, the importance of which is not likely to be to much emphasized.

Moreover, when a leguminous crop is used for cover or green-manure purposes it adds to the soil not only humus but nitrogen. In this way, part of the needed supply of nitrogen can be produced more cheaply than through purchase in the usual commercial forms.

No special comments in addition to those previously made are necessary with regard to handling soil-improvement or green-manure crops. It is important, however, to point out that in the case of cover crops which start into vigorous growth early in the spring there is an habitual conflict between the owner's desire to defer plowing them under until they have made as much growth as possible to add to the soil, and the matter of equal or perhaps even of greater importance of plowing them under before they make too serious demands in their growth on the moisture in the soil which ought to be conserved for the use of the trees later in the season. This situation inherently represents a compromise between two somewhat incompatible objects. The only basis of settlement is the grower's judgment and a rigid adherence thereto.

The use of tillage.—A third factor in maintaining soil fertility is tillage. The place of tillage or cultivation in fertility maintenance is no less important than that of the other factors. In fact, in many cases proper tillage alone appears to induce soil conditions that are adequate, for a time at least, to produce optimum yields.

The effects of tillage are somewhat complex and in many respects perhaps not fully understood. The maintenance by frequent tillage of a dust mulch several inches deep has been much emphasized in the past as a means of conserving soil moisture by breaking the capillarity of the soil at the surface. The emphasis is now being placed, at least by many, not so much on the importance of a dust mulch as on a somewhat coarser granular mulch, and on tillage in its relation to destroying weeds and other superfluous vegetation by which soil moisture is often exhausted to an excessive degree.

It is a fact well known that it is difficult to wet a mass of very finely pulverized soil, or any other finely divided substance as flour, meal, road dust and the like. It is equally obvious and easily demonstrated that rains do not sink into the soil as readily when covered with a dust mulch as when the surface is less finely divided, or, in other words, is in a condition that may be described as a granular mulch. There is accumulating evidence that the principal means by which soil moisture escapes, other than by drainage, is

through the transpiration of plants rather than through evaporation from the surface of the soil as formerly held, and as still taught more or less. If this be true, the destruction by tillage of all superfluous growth in an orchard such as weeds is of the greatest importance.

Tillage is of primary importance in other respects also. The relation of the chemical activities and, perhaps even more so, of the biological activities to the fertility of the soil gain new significance the more they are studied. The aeration of the soil is essential to both chemical and biological action and that in turn is greatly promoted through tillage.

Principles of Pruning

The fruit grower performs no operation in his orchard that has greater bearing on successful production than pruning. At the same time, there is no part of orchard management about which more diversity of opinion and practice prevails; perhaps no operation is less understood in its effects; and no other, which in recent years has received more attention from investigators. The results of the investigations have thrown much new light on pruning problems. Only a few of the more outstanding features of pruning admit of presentation in this connection. Though complicated from the standpoint of exhaustive discussion, the essentials of pruning may be reduced to a few rather simple statements of fact and of principle:

1. Pruning in some form is an essential operation in substantially all types of fruit growing including tree fruits, vine fruits such as grapes, and small fruits or berries.

2. The objects of pruning include keeping the tree or other plant within bounds, symmetrical, and shapely; the stimulation of growth at local points; the removal of superfluous growth which includes also the thinning of tree tops to admit sunshine and incidentally to make thorough spraying possible and to facilitate the work of harvesting the fruit; reducing the struggle for existence among the different parts of the plant; the regulation in some cases of the position of fruit-bearing wood to that of the roots; thinning the fruit in some cases, and the removal of dead, diseased, or injured parts. Various other objects occur, but they are in reality corollaries of the foregoing points.

3. Pruning is both a mechanical operation for mechanical purposes and a physiological process of far-reaching effect. The former is comparatively simple and easily comprehended; the physiological aspect is intensely complex in its relationships, the full significance of which in considerable measure still remains to be determined. Obviously pruning for mechanical effects has physiological aspects, none the less because it may be done for mechanical purposes.

4. Some of the objects of pruning, as stated, appear to be contradictory or antagonistic to one another. Academically, this may be true, but not all the objects necessarily exist in the same tree or plant at the same time.

5. Pruning has correlations with nearly every aspect of the growth and functioning of the plant. The type and manner of pruning a young tree may differ, and usually does, from that of a mature tree of the same kind; a vigorously growing tree requires different pruning from a weak one even of the same kind and variety; trees of different natural habits of growth and fruit bearing need to be pruned according to those habits. Differences in habit or manner of fruit bearing, as the character of the wood on which the fruit is produced, may occur in different varieties of the same kind, as well as between different kinds of fruit.

6. Pruning, though it may stimulate growth locally, is a physiological influence devitalizing and depressing in the main and should be done with discrimination and care, and in general with a view to removing the least growth possible rather than the most. This feature is, however, only relative and the

principle must be applied with respect to the conditions that are to be met. The local influence of pruning, especially as that operation modifies the extent of leaf area, has recently been emphasized by the results of some investigations which show a close relationship between the size attained by an apple and the leaf area near it on the branch on which it grows. An inadequate leaf area in close proximity to an apple results in an undersized fruit. The requirements, however, seem to vary with different varieties. Obviously other factors besides pruning may affect the abundance of foliage.

The foregoing statements admit of extended amplification but the limitations of this treatment restrict further discussion to a few of the more important specifications of pruning.

Pruning, especially of fruit trees, as already noted, has received much attention experimentally in recent years. As in some other domains of horticulture, the investigations have shown that some of the teachings of long standing lack the support of facts. Thus, the earlier advice to cut back young trees heavily to stimulate growth and to make them stocky fails largely in the light of the demonstration that such stimulation is mainly local, that the total annual growth in any season of a heavily pruned young tree is likely to be actually less than that of one pruned lightly or not at all, and that the trunk diameter of the heavily pruned tree increases less rapidly than the one lightly pruned, and in general the time of fruit bearing is delayed by heavy pruning.

Again, the former precept that pruning during the summer checks growth and induces fruit-bud formation is found to be directly opposite to the facts in many cases so far as it concerns fruit bearing. As a broad principle, the conception is erroneous. As a detail of practice, it may apply under certain sets of conditions. Likewise, the idea of pruning during the dormant period to stimulate growth proves to be, not a principle of pruning, but rather a detail of practice only that has a place in orchard management.

The pruning of a fruit tree, vine, or other plant normally begins at the time it is set out. In the case of grapevines, berry plants and the like where the top is nearly all cut away at time of planting, the details are simple and are passed here without comment, except to state that the new or permanent top in such cases is formed later from the new growth that develops. Attention, therefore, centers for the present on the tree fruits. Obviously pruning at time of planting has a far-reaching effect. It is then that the branches which are to form the permanent top are selected. Serious errors at this time are difficult, if not impossible, to overcome by any later treatment. In the case of the apple, pear, plum, cherry, citrus fruits, nuts in general, and some others, 2-year-old trees are commonly planted. These, if properly grown, are well branched when planted and already bear the limbs that are to be selected for the framework or scaffold branches of the tree. In case of the peach, apricot, and some others, 1-year-old trees are habitually planted. They make relatively a more rapid development in the nursery than most other deciduous fruits, and are heavily branched unless undersized like 2-year-old trees of the apple, pear and some other kinds. Many growers now prefer 1-year-old trees of most kinds of fruit when planting an orchard. A marked trend has occurred during the last decade in favor, especially, of 1-year apple trees; and 1-year cherry trees have certain advantages over older ones.

Three to five limbs are usually selected at time of planting for the framework which forms the permanent top. The lowest branch will determine the height of the head of the tree from the ground and should be selected so far as possible with that point in view. The others should be arranged symmetrically and at uniform distances about the trunk and with several inches (preferably not less than 5 or 6 inches if possible) between them vertically. This is the ideal that should guide. As nursery trees usually fail to develop according to man's ideals, the grower must select the scaffold branches as best he may and then depend on his skill as the tree develops to overcome as far as possible inherent defects. The branches selected are usually cut back rather heavily when the trees are planted, commonly one-half their length, and all others removed entirely. However, the practice, which formerly was nearly universal, of cutting back the branches very heavily at time of planting has also been modified more or less by the trend away from heavy pruning. Many growers are now heading back young trees less severely than formerly at planting time. Trees planted as 1-year-olds other than peaches, cherries, and apricots, are usually single, straight "whips." They are cut back when planted to the desired height and the scaffold branches selected and trained as they develop.

The manner in which a young tree is pruned when it is planted practically fixes the style or type of tree that is to be developed. The grower then determines whether he is to adopt, for instance, an open center, a central leader, or modified central leader type. Such differences in type concern particularly the apple, since there is greater uniformity in practice with respect to most other kinds. Nevertheless the force of the point in question is universal with respect to the treatment of the young tree at time of planting being projected into its entire future.

The type of tree, whether open center, or some other, is much more a matter of detail in pruning and training and of individual preference than of principle, as is the height at which the head shall be formed. It may be observed, however, that the natural habit of growth of some varieties renders them better adapted to particular methods of pruning and training than others. The principles of pruning with respect to the influence of that operation on growth, fruit-bud formation and development and behavior otherwise are concerned but little or not at all with minor details of practice, as for instance, the particular manner of shaping the top.

In the pruning of young trees, up to the time of bearing, the prevailing practice has long consisted of rather heavy cutting back of the seasonal growth and more or less thinning out of the branches. As previously stated, recently conducted investigations have shown that the tendency of such treatment is to retard the growth of the tree in diameter of trunk, in spread and height of limbs, and to delay the time of fruiting. Although some of the objects of pruning young trees require more or less cutting back at times, as well as the thinning of the tops by removing branches, such requirement varying with the habit of growth of different varieties, many growers have changed their former practice of heavy pruning to that of limiting it to the minimum consistent with the objects that must be attained.

The same general plan of procedure should be followed in the later life of the trees, modified as habit of growth and condition of the trees require, in order to gain the desired ends. In other words, pruning throughout the life of a tree may be said to consist of the judicious cutting back of some branches and the entire removal of others. In fixing upon what is judicious, the grower should keep it in mind that in the tree top the individual bud is the unit of life; that there is an intense struggle for existence between the buds in a tree top and between the branches, each of which has grown from a bud; that each leaf bud, in developing a branch or a fruit spur, functions and develops properly only in the presence of abundant sunshine; that the tendency for every branch and spur in the top is to extend upward or outward towards the sunlight; and that in this struggle for sunlight and plant food the branches and spurs are less favorably situated than others, are suppressed, and become too much weakened to be of value to the tree and in time many of them die. Thus the tops of trees which become unduly dense through neglect of pruning become filled with dead branches. A well-pruned tree—one with the top sufficiently open so that every bud, fruit spur, twig, and branch, receives its due quota of sunshine—rarely contains deadwood unless as a result of disease or injury. The fruit borne by such a tree attains its maximum development in color and finish.

Pruning has close correlation with food supply and vigor of growth. Apparently close relationship exists between the total leaf area of a tree and the functioning of the tree itself; and the extent of the leaf area is, or may be greatly influenced by the pruning a tree receives.

Some of these relationships have been summarized[2] from the standpoint of plant physiology as follows:

A tree has two functions: Growth, or wood production, and fruit production. The conditions which are the most favorable for tree growth are not the conditions most favorable for maximum fruit-bud formation and fruit production. The conditions which result in the best wood production are not necessarily those which result in the best fruit production. An intermediate set of conditions between those favoring maximum tree growth and minimum or very small growth may be considered as the most favorable to fruit production. .

The grower should aim to keep his trees in a moderate condition of growth for the best fruit production. The conditions which promote wood formation are those which increase the intake through the roots of moisture and mineral plant foods, especially nitrates (nitrogen). The conditions which cut down wood formation are those which restrict the entrance through the roots of moisture (drought) and plant foods.

Within the green leaves the raw food elements in solution in the sap are elaborated, resulting in the formation of starch, sugar, etc., which are carried to all parts of the tree, including the roots. These are the new tissue-forming materials.

Other things being equal, the factor which determines the fruitfulness of the tree is the balance of the food elements taken in through the roots with the products manufactured in the leaves. It is in connection with this balance that pruning may be, and often is, an exceedingly important factor in relation to fruitfulness. Trees which are making very rapid wood growth have a relatively greater amount of the raw food elements taken in by the roots, especially of nitrates, than of the substances like starch and sugar which are manufactured in the leaves. In trees making a feeble growth the opposite relations exist.

[2] By H. R. Kraybill, formerly assistant physiologist, Bureau of Plant Industry.

Therefore, the removal of a large leaf area, as by summer pruning, or of dormant wood containing stored-up food materials would affect, accordingly, the nutrition of the tree, tending towards greater or less growth and more or less fruit production, depending on the condition of the tree and the conditions under which it was growing.

Irrigation

Irrigation as an operation in orchard maintenance is employed mainly in the valleys of the semiarid parts of the country in which a fruit industry has been developed. Geographically this includes the intermountain States of the West and the Pacific States. An occasional orchard or fruit plantation in the humid sections is irrigated during unusually dry periods or as special provisions in the production of superior fruit for a fancy trade. In these exceptional instances the source of the water is generally deep wells of large water capacity, or some other local or individual supply. Only the larger community or regional irrigation activities require presentation here and these only briefly. The source of water supply for irrigation purposes is usually some river across which a dam is constructed at some point where the impounding of a large volume of water is possible and at such elevation above the area to be irrigated that the water flows by gravity from the reservoir to the land. Or, the source of supply may be some mountain lake or some other body of water of natural or artificial formation as conditions and possibilities dictate. In some instances, water for irrigation is raised to higher levels by pumping but that is usually expensive as compared with a gravity system throughout.

It has been noted, and it also follows as a natural sequence, that irrigation as an organized orchard operation is carried on in regions of very limited rainfall; or it may be added, in regions where there are distinct rainy and dry seasons, the latter commonly covering much more than half the months of the year, including the growing season. In passing, and for completing the setting, it needs to be stated that the sources of water supply where irrigation water is stored—the reservoir, lakes, and the like—are generally located at points far removed, in numerous cases many miles distant, from the area that receives the water. The supply of water that comes into the reservoirs has its source in the winter rains that are impounded, the melting of snow that falls in the mountains during the winter, and in some cases, where rivers are dammed to form a reservoir, the head waters of the rivers may rise in humid regions and the available store in a reservoir at any time may consist of water that has come from a watershed scores of miles away. In many instances, however, the quantity of water available for irrigation in any season is determined by the abundance of winter rains and the snowfall in the mountains within the general region that is concerned.

The system of distribution of water from a reservoir to a distant orchard is, briefly, a system of canals and ditches, which divide, subdivided, and radiate in a manner that might be likened to the water system of a large city. There is the reservoir, the "main" through which the water leaves the reservoir, then "submains" that take the water to different sections of the city which, in turn, may divide in order to supply individual streets; the individual houses are connected by relatively small pipes with the street mains, and finally

within the house each separate room may have its individual connection. Here the analogy ceases, however, for the manner of operating an irrigation system has little resemblance to that of a well-equipped and well-managed city system. In a word, a canal or "main ditch" takes the water from the source of supply; from it smaller ditches branch which begin distribution in different directions; these in turn divide and subdivide until the individual farm, ranch, or orchard is reached. In some regions of considerable area artesian wells from which the water flows in great streams form the source of supply. When such wells are in close proximity to the area to be irrigated, the distribution system is obviously simple as compared with other conditions. Very definitely, the construction and maintenance of any such irrigation system as that outlined above is the work of the highly trained irrigation engineer, and not of the fruit grower served by the system.

FIG. 28.—An apple orchard in its fourth year from planting, located in an irrigated valley in the West. The water is distributed through the orchard in furrows, which are clearly seen in the foreground at the right

The application of the water to the orchard is, however, the work of the fruit grower. In semiarid or arid regions there is perhaps no other part of orchard management that calls for better judgment and wiser practice than the use of irrigation water. Undoubtedly the results of poor judgment and unwise practice in irrigating fruit plantations furnish whatever of truth there may be in the notion frequently expressed that irrigated fruit is not as highly flavored as nonirrigated.

Irrigation water, reaching the individual orchard through a ditch that branches from a larger one at a more or less remote point is applied by the grower in any one of several ways. Probably the practice most commonly followed is to make furrows perhaps 3 or 4 feet apart between the rows of trees and then divert the water from an individual head ditch into each of the furrows, regulating the rate of flow so that as nearly as possible, the water that reaches the remote ends of the furrows where it remains until it sinks into the ground will represent the proper proportionate part of the whole. Otherwise the distribution of the water throughout the orchard would not be uniform and some sections would get too much, others not enough (fig. 28).

By another method, the "basin system" of distribution, the ground is flooded. A ridge of soil is thrown up in both directions along the middle of the space between the tree rows, thus putting each tree in the center of a basin (fig. 29). The water is directed by suitable means into the area set off by the ridges about each tree and remains until it soaks into the soil. Although this system may have limitations imposed by the topography and "lay of the land," it provides a more even distribution of the water than the furrow system. Then, too, the character of the soil is a factor. In case of some types the lateral movement of water through the soil, as from one furrow to another, is very slow. It is easy for an inexperienced

FIG. 29.—A mature peach orchard in a valley location in California. Irrigation water is supplied by the "basin" system. The ridges of soil thrown up to control the distribution are seen in the interrow spaces. The trees are of the Phillips variety, one of the most important for canning. The color of the fruit is of less importance than it is when shipped in the fresh state. Hence the trees are not necessarily pruned with a view to keeping the tops as open as is the case where the fruit is shipped in the fresh state with high color an important characteristic from the marketing standpoint

grower to think he has irrigated thoroughly when in reality there remains a very dry zone of soil between the subtending sections of each two adjacent furrows and which forms an impassable barrier to the proper functioning of the roots. Soaking the entire area as in the check system is one way of meeting this difficulty where that system is practicable. The distance between the furrows in the furrow system is likewise an important factor. The nearer together they are, the shorter the time it will take for the soil to become uniformly moistened by the lateral movement of the water through it.

Other ways of distributing water in irrigation are used but in the main they are modifications of the two mentioned. Any attempt to detail the numerous aspects of irrigation in fruit growing has no place in the present discussion. However, there are certain general features, all of which the user of irrigation water fully grasps,

which will interest growers in nonirrigated regions; the latter far exceed in number the growers who are located in irrigated areas. In the first place, it is a natural conception that land to be irrigated by the methods above named must be nearly level, sloping uniformly in some one direction in order that water may flow gently along the irrigation furrows. In the main this is true and one of the most exacting things in preparing such land for irrigation is to grade the surface so that it shall be uniform and free from small irregularities. It is possible, however, to irrigate hilly land or that which slopes considerably, provided, of course, the area is below the level of the source of the water, be that a head ditch or some other part of a ditch system from which the water is obtained. This restricts the method of distribution to the furrow system, and the furrows which carry the water must obviously be placed with care, each one following the contour of the hill or slope to be irrigated in a gently descending though in some cases perhaps a very winding course.

Wide differences occur in the practices of fruit growers with respect to irrigation. Some of these are due to conditions such as abundance or lack of water, soil differences, and differences in conceptions as to requirements. The fact that a grower is operating in an irrigation district with water rights does not of itself assure him an abundant supply. In many sections the supply is habitually in danger of exhaustion before the end of the season and must be used with great caution. Sometimes a district, habitually supplied abundantly, finds itself with a distressing shortage because of abnormally light rains or snowfall during the rainy season, this condition prevailing perhaps for several years in succession. In case of shortage each water user is allowed only his proportionate share, except where prior water right has been estbalished through some earlier provision. The various State laws governing water rights, irrigation, and the distribution of water are sometimes complex in their application and are not for the novice to interpret.

An abundance of irrigation water sometimes has its drawbacks and dangers. If a grower is allowed water practically without restriction, the temptation to apply it as a substitute for good tillage as well as for its legitimate purposes is often irresistible. "A little is good, more is better" is likely to be the guiding thought, when as a matter of fact a shortage, if not too severe, may be much better for the grower than a surplus used unwisely. Over-irrigation has undoubtedly produced results detrimental in some cases to the esteem in which fruit grown under this practice has been held. To decide wisely when to irrigate and how much water to use for optimum results is exceedingly difficult. It can not be done by any set rule. Experience, careful observation, and the exercise of much caution all help in the problem. The question when to irrigate is answered, or should be, by conditions, not by the calendar or the day of the week. If delayed too long, signs of tree distress will appear in the wilting of the foliage; if applied too frequently and too liberally it becomes overirrigation. In actual practice, it too often happens that the grower must use the water from the ditch when his turn comes, whether that is the best time from the standpoint of his trees or not. The careful grower will examine the soil in various representative

places throughout the orchard, digging down with a spade, posthole digger, or otherwise to some depth, at least as deep as the roots penetrate, and perhaps well into the subsoil. He learns by experience from the appearance and condition of the soil when a reasonable limit of safety has been reached in the moisture content. By the same means he finds out when an aplication of water has properly and uniformly moistened the soil. The frequency of application or the number of irrigations in a season varies with different growers in different communities, and it is affected by the character of the soil. As in humid regions with a supply of water in the rainfall, some soils in irrigated districts retain water better than others. Some water users advocate frequent light irrigations; others prefer to make them less often and to use correspondingly more water each time. Probably a general average ranges in the number of applications from three to perhaps five or six in the various sections for the entire season.

Nothing in connection with irrigation needs greater emphasis than the necessity for perfect soil drainage. Poor drainage results in many of the most serious soil troubles which the user of irrigation water experiences—troubles entirely different from any of which the grower in humid regions has any knowledge. While the possibility—potential or realized—of regulating the soil moisture as needed through irrigation offers in prospect a most ideal situation, the problems and difficulties incident thereto present disadvantages that tend to neutralize the advantages in comparison with the conditions imposed by nature on the grower in humid seasons.

Protecting Fruits and Vegetables From Frost

Low temperatures are responsible for either the partial or complete loss of the fruit crop in some section of the country practically every season. The damage may be local, covering only a small region, or it may be widespread and include a large section of the country. It is exceptional, however, that the injury to deciduous fruit is so widely distributed as to cause a material shortage in the supply or to greatly increase the price to the consumer.

Protection of fruits from frost during the blooming period is practical only under certain conditions where intensive production will justify the necessary expenditure. In this respect the apple and citrus fruits probably comprise one of the most extreme comparisons and serve well to illustrate the point. In the case of citrus fruits in many localities frost protection becomes a part of the necessary practices involved in regular and profitable production. In the case of apples the hazards are not so great as with citrus fruits and under normal conditions outside of the Pacific northwestern section the additional crop insurance provided by orchard heating is not sufficient to justify the investment in the necessary equipment and its operation. With citrus fruits a severe frost over a relatively small area might rob the country of a considerable portion of the entire supply while in the case of most other fruits, the failure of the crop over a limited area would have very little effect upon the total production for the country. For this reason, the heating of orange groves in southern California and in parts of

Florida has become a standard practice, while in the case of apples, heating has been found profitable only in the Northwest and in other relatively limited districts. With the citrus fruits the period of greatest danger is in the winter season when freezing temperature may occur at any time during a period of two months or longer. A freeze at this time may not only injure the crop maturing on the trees but also destroy the prospect for a crop the following season. With the deciduous fruits the critical period occurs in the spring at the time of blossoming and is limited, seldom exceeding two or three weeks, and for this reason, it has not been found profitable to use protective measures throughout the greater part of the eastern deciduous fruit region.

There are two general weather conditions to be reckoned with in frost protection. These may be called a frost and a freeze, respectively. The word frost is usually employed to designate the phenomena of feathery ice crystal formations on exposed surfaces when the temperature falls to freezing or lower, whereas in the other case freezing weather may prevail without the actual formation of frost. Broadly, the occurrence of a temperature of 32° F. or lower, whether accompanied by a deposit of ice crystals or not, may in practice be considered a frost, for the effect on vegetation is much the same as in the case of actual frost formation.

In most cases it is much easier to protect against a frost than a freeze, by reason of the difference in the physical processes of the atmosphere through which the respective conditions were brought about.

During a freeze the air for a considerable distance above the earth is usually cold. True frosts occur only when the atmosphere in the lower strata is relatively calm. They are caused by the rapid radiation of heat from the earth's surface after the sun goes down on clear, calm nights. Under these conditions the ground cools rapidly and the surface air loses heat to it by conduction, that near the ground becoming cooler than at a short distance above. This soon produces a relatively thin layer of cold air near the surface with an increase of temperature, called temperature inversion, up to a limited height. The force of gravity tends to cause this thin surface layer of cold air to move down and gather in depressions, thereby making the frost risk greater in the lowlands. These conditions make the problem of protection by heating from ordinary frost comparatively easy. Instead of being compelled to heat "all out-of-doors" as many think, the problem is simply that of warming a surface layer of air, ranging from 20 to 30 feet in depth, the upper layer of warmer air functioning very much as a roof and thus facilitating the operation.

Changes in elevation, however, frequently cause the artificially warmed air to rise to the higher levels. This is the usual condition accompanying a general freeze. When the upper air is warmer than the surface layers, however, the warmed air near the surface will not rise until it becomes warmer than that aloft; thus the maximum benefit from the heating is obtained. During a calm, frosty night the air at a short distance above the ground usually is warm enough to be above the danger point for vegetables and fruit.

Effect of Humidity on Frost Formation

Water vapor is the most effective of the various gases present in the atmosphere in obstructing radiation of heat from the earth. Therefore, the amount of water vapor present in the air has considerable influence on the rate of fall in temperature during the night; the temperature falls more slowly when the humidity is high than when it is low, other conditions being equal. At a given temperature only a certain maximum amount of water vapor can be present in the air, and this is greater when the temperature is high than when it is low. When the maximum amount is present and the temperature is lowered, a certain portion of the water vapor is turned into liquid or frozen water. The temperature at which this condensation begins is called the dew point. The drops of moisture which appear on the outside of a pitcher of ice water on a warm day are formed through the chilling of the air coming in contact with the pitcher. These droplets begin to appear on the pitcher as soon as its temperature has reached the dew point. If the dew point is above 32° F., the freezing point of water, dew is formed; if it is 32° or lower, frost forms. Since dew or frost does not begin to form until the temperature of the ground or other object reaches the dew point, it is apparent that if the dew point is very low, the temperature may fall low enough to cause considerable damage without the formation of any frost. For example, if the dew point is 18° and the lowest temperature reached during the night is 24°, there will be considerable damage to growing crops without any frost formation whatever. This phenomenon, often called a "black frost," is of rare occurrence in most localities. Another factor that has great influence on the amount of fall in temperature during the night is the liberation of latent heat in the formation of dew or frost. When the dew point is high the latent heat given off in the formation of dew is often sufficient to check the fall in temperature almost entirely. Generally speaking, therefore, other conditions being equal, the higher the dew point in the evening the less danger there is of the occurrence of a damaging frost.

Methods of Protection From Frost

There are three general principles used in frost protection: (1) Conserving heat, (2) mixing or stirring the air, and (3) adding heat.

Conserving heat.—The most important way in which the ground cools during the night is through the loss of its heat by radiation. If it is possible to arrest or reduce this radiation and conserve the ground heat, frost will be prevented. One of the simplest methods of reducing this radiation is by placing some kind of a covering over the ground or the plants. Among the materials used are glass, cloth, heavy paper, straw mats, special plant protectors, and smoke screens or smudges.

Tin cans or other metal coverings should not be used to protect plants, as the metals are good conductors of heat. In Florida, tender crops are often protected by means of screens made of lath with spaces between them about the width of the lath. These screens serve the double purpose of protecting the plants from frost during

cold weather and providing shade in hot weather. Young potatoes and other vegetable plants are sometimes protected by covering them with soil, but where this is done the plants should be completely covered as the stirring of the soil increases evaporation and ground heat radiation. Cranberries are protected by flooding the fields with water from reservoirs provided for the purpose. Spraying with water is frequently recommended as a means of protecting plants from frost, but on the whole the use of water is not as effective as covering the plants with heavy cloth, heavy paper, or the formation of a heavy smoke screen.

FIG. 30.—Distribution of heaters in an orchard

Stirring the air.—The temperature of the air a short distance above the ground is often from 7 to 10° higher than near the surface on calm, clear radiation nights, or those most likely to have frost. It is obvious that if the lower, cold air could be mixed with the warm upper air, a damaging frost would not be likely to occur in most cases. Attempts have been made to do this by various methods, such as power-driven fans, but it has been found with the devices so far tested that the expense is far too great for practical use, while the general results were not as satisfactory as by other methods.

Adding heat.—The third principle of protection is that of adding heat to the lower air to replace that lost by radiation and conduction. This is usually accomplished by burning a large number of small fires throughout the area to be protected. Oil, wood, coal, oil-soaked shavings, tree prunings, carbon briquets, or a combination of two or more of these may be used. A large number of small fires is more efficient in raising the temperature than a small number of large ones. Atmospherical motion is a very important factor in heating. When the wind is blowing, even though at the rate of only a few miles an hour, the heat is steadily carried away and a much greater quantity of fuel is required than when it is calm.

Adding heat to the lower strata of the atmosphere has been found to be the most economical and effective method, especially where protection is undertaken on an extensive scale. It is almost exclusively employed in the western fruit-growing sections, where frost protection is practiced more extensively than in any other part of the country. Many other devices have been tried out, with varying, but mostly unsatisfactory, results. The fuel is usually a cheap grade of oil, consumed in a specially constructed heater, of which from 80 to 120 are required per acre, depending on the degree of cold that is likely to occur and the type of burner used. Figures 30 and 31 show the usual distribution of heaters in an orchard.

A smoke screen has very little influence on the loss of heat by radiation, and the effect of smudge fires of damp straw or manure, or of smoke screens from chemicals, is far less than that of direct heating, while a chemical smoke screen is much more expensive. A smoke screen has some value, however, in shading the fruit and blossoms from the morning sun and preventing a too rapid thawing following sunrise.

FIG. 31.—Orchard heaters in operation in a California citrus grove. A galvanized-iron tank for holding a reserve supply of oil for fuel is shown at the right

Only one other form of protection against cold calls for attention here, and that only for a passing mention. It is common practice in Florida to mound the soil about the trunks of young citrus trees to protect them against injury by cold. If mounded 6 to 12 inches above the level of the ground, a freeze may kill the top of the tree, but the soil about the trunk will protect it from injury and from it a sprout will usually grow, from which a new top is developed. This, of course, results in the complete loss of the crop for a year or two, but prevents the loss of the trees.

Storage of Fuel

Where heating is practiced on a large scale, the question of procuring and storing an adequate supply of fuel is of primary importance. In order to carry on orchard heating successfully it is necessary to have enough fuel within reach to last through the longest cold spell likely to be experienced. Many instances have been noted where the crop has been protected successfully through several cold nights at considerable expense, only to be lost on one cold night on account of lack of fuel. Where orchard heating is practiced by many growers in a community, it is a good plan to buy and store large quantities of fuel oil on a cooperative basis, as is done in southern California. Orchards located near the storage tanks can haul directly from them, but in the case of those located a mile or more distant storage tanks should be provided in the orchard.

FIG. 32.—Filling heaters from tank wagon

The necessity of pumping oil from storage tanks should be avoided by raising the tanks high enough above the ground so that the oil will flow into the wagon tanks by gravity. Where the ground is not too flat, the storage tank can be so located that the oil can be run into it and also taken out by gravity. If more than 5 acres are to be fired with oil, a portable tank from which to fill the heaters is almost a necessity on account of the saving in time and labor. Three men with a tank wagon can fill heaters very rapidly, one man driving and two men drawing oil into 5-gallon buckets and pouring it into the heaters, filling two rows at one time. The owners of two adjoining orchards often use the same

tank wagon. Figure 32 shows the method of filling heaters from tank wagons.

Handling Orchard Heating

The fact can not be emphasized too strongly that if orchard heating is to be practiced successfully, it must be handled with as much care and attention as spraying, fumigating, or any other work. The secret of success will be found in adequate equipment, good judgment, attention to detail, and extreme vigilance. An inadequate number of fires to the acre may often be worse than none at all, as the costs of firing may be added to the loss of the crop.

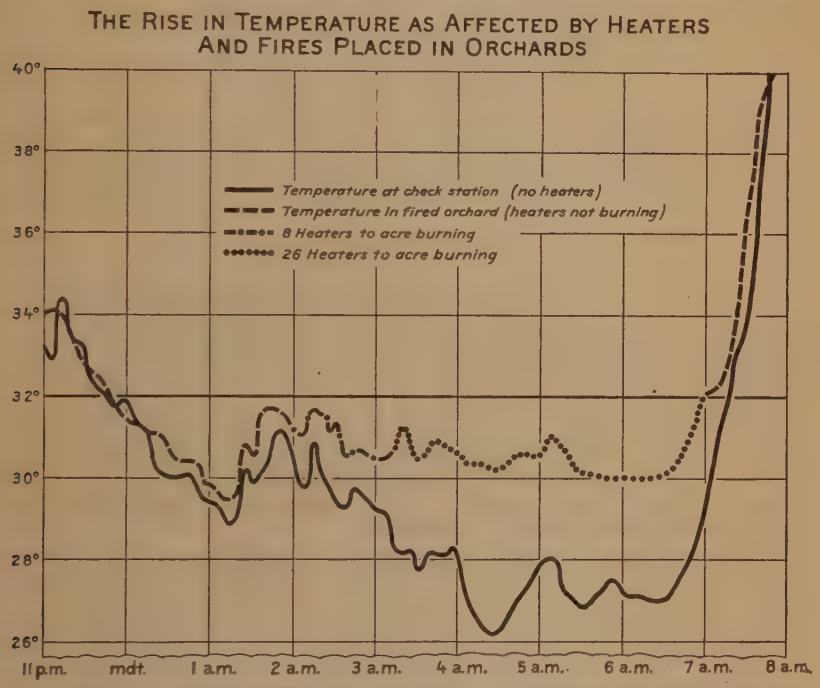


FIG. 33.—The rise of temperature as affected by heaters and fires placed in orchards

Whenever the temperature approaches the danger point the thermometer in the orchard should be watched closely and the rate at which the temperature is falling determined. If the temperature is falling rapidly the firing must be begun early in order that the heaters may be all lighted before the danger point is reached. With a little practice it is often possible to tell with considerable accuracy by inspection of the fruit or blossoms when the danger point has been reached, regardless of the temperature. If the small lard-pail heaters are set about 100 to the acre, alternate heaters in every fourth row should be lighted first, followed immediately by alternate heaters n every second row if the temperature has been falling rapidly. The effect on the temperature should then be noted and decision made as to whether additional firing is necessary at that time. As soon as a row of heaters begins to burn low, reserve heaters should be lighted, as the amount of heat given off during

the last half hour of burning is small. If the large capacity downdraft heaters are used, all may be lighted at once and the consumption of oil regulated by manipulating the drafts (fig. 31).

During a cold night an isolated cloud passing overhead, by cutting off radiation, and to a certain extent reflecting radiation from the earth, may cause the temperature to rise. As the cloud drifts toward the horizon the temperature falls again. Likewise, sudden temporary rises in temperature are caused by gusts of wind of short duration which mix the upper and the surface air. As a general rule the temperature falls rapidly after the wind or cloud has passed, and cases are on record where entire crops were lost through extinguishing the heaters at such a time. If clouds are overspreading the whole sky or a sudden rise in temperature due to wind occurs just before sunrise, the heaters may be extinguished, but if the sky remains clear and sunrise is an hour or more away, the temperature should be watched closely during the remainder of the night. A marked difference in the temperature at different elevations may occur, thus rendering it necessary to make observations at a number of stations where the topography varies widely (fig. 33).

Does Orchard Heating Pay?

This question can be answered only with a knowledge of the prevailing local conditions, as the factors to be considered in connection with the subject vary greatly, even sometimes for orchards in contiguous localities. The most important questions to be considered are:

(1) How often will it be necessary to light the heaters in order to save the crop each year? If dependable temperature records have been kept for a number of years somewhere in the immediate vicinity, a study of these may make it possible to gain a fairly accurate conception of what temperatures may be expected at the orchard in question.

(2) Will the value of the fruit lost through frost damage more than pay interest and depreciation charges on an investment for the necessary equipment, together with the expense of operation?

(3) Is the locality likely to be visited by short periods of cold weather during the growing season that would be too severe to successfully combat by known protective methods? This question can probably be determined from Weather Bureau records from some station in the vicinity. Usually the temperature in an orchard can not be raised more than 6 to 8°, under favorable atmospheric conditions. (See fig. 33.)

There are two conditions under which orchard heating will not be profitable: (1) The orchard may be located where frost damage is too slight in the long run to pay the expense of heating, and (2) it may be an exceptionally cold section where damaging frosts occur so frequently that the cost of protection is too great to be borne by the crop.

Orchard heating has been practiced since 1913 on one of the largest lemon groves in the country, located in southern California. During the season of 1913, when the citrus crop in many parts of southern California was practically a total loss and thousands of trees were killed outright, the lemon crop from this grove brought $734,318.07 f. o. b. California. Records on the cost of protecting 220 acres on this place during the period from 1913 to 1918 are shown in Table 1. It will be seen that the returns from the fruit

saved in 1913 alone would pay the costs of protection for many years:

TABLE 1.—*Annual and average cost per acre for protecting 220 acres of lemons with oil heaters*

	1913	1914	1915	1916	1917	1918	6-year average
Labor, man and horse, filling and lighting pots, per acre	$45.70	$10.55	$10.65	$21.45	$20.60	$22.15	$21.85
Oil	38.35	12.70	4.20	23.20	26.15	17.75	20.40
Depreciation	19.30	19.10	17.40	15.60	14.30	13.00	16.45
Interest	17.85	17.45	15.50	13.40	13.45	11.25	14.80
Upkeep	11.55	7.95	7.65	4.10	5.65	3.70	6.25
Total	132.75	67.75	55.40	74.75	80.15	67.85	79.75
Number of times fired	19	2	7	20	27	21	

This ranch is located on both high and low ground, but only the low ground is protected. Lemons are more easily damaged than oranges, and as the small green fruit must be protected, the fires are lighted oftener than in most other orchards. The costs given in the table are for firing about the maximum number of times that would be necessary anywhere in the country.

Through widespread interest developed some years ago in orchard heating, and a considerable number of experiment stations devoted much attention to the problem, and besides many growers equipped their orchards for heating at large expense, the practice is now largely confined to those fruits, which, like oranges and other citrus, are grown only in a few restricted areas, or to some regions where the fruit interests comprise practically the sole industry of the community. In the fruit regions otherwise located where attention was at one time given to orchard heating it has been abandoned in most cases because it did not pay to maintain the heating equipment. An occasional loss or partial loss of a fruit crop could be sustained with a smaller tax on the resources of the grower than that required for efficient heating.

Group Relationships, Cultural and Economic

A broad classification of fruits recognizes several classes or groups—deciduous tree fruits, tropical and subtropical fruits, small or bush fruits, and vine fruits. This classification is fundamentally geographical rather than botanical, but it will become evident in due course that rather close botanical or natural relationships exist among the members of each group. That, however, is incidental, and not the basis of the grouping.

The deciduous group includes those fruits which have a definite period of growth followed by a period of dormancy, the latter being induced by low temperatures. It is possible, perhaps probable, that the comparatively new conception of the influence of length of day on plant behavior may have its application in the dormancy of plants, but in this consideration dormancy is closely associated with the lowering of the temperature as summer wanes and the cool weather of autumn merges into the colder days of winter. The tropical and

subtropical group is composed of the fruits adapted to those sections which are continuously warm enough so that vegetation is in more or less constant active growth. Plant activities may slow down during the cooler parts of the year, but the trees do not drop their leaves as deciduous trees do. The small or bush-fruit group is composed of the various berries—strawberries, raspberries, blueberries, currants, and others. The vine fruit group is represented pincipally by the grape, though the passion fruit, rarely grown in this country, belongs here.

Deciduous Tree Fruits

The deciduous tree fruits constitute a conspicuous group. It comprises the tree fruits in the Temperate Zone, though the number that can be grown is gradually reduced and so far as cultivation is concerned reaches the vanishing point in the stretches northward toward the Arctic Circle; southward the deciduous fruits of the temperate climate become restricted in kind and variety and blend into the evergreen fruits—oranges, guavas, avocados, and the like, which characterize the land—not necessarily the land of perpetual summer but at least a region having a subtropical climate. The deciduous tree-fruit group is made up, in turn, of pomaceous and drupaceous or stone fruits.

The Pomaceous Fruits

The deciduous tree fruits are separated into subgroups which represent mainly natural or botanical relationships. Thus, the apple, crab, pear, quince, medlar, and possibly others are designated as "pomaceous" fruits, each having certain specific (as contrasted with general) natural characters in common. For instance, as even the most casual observer will realize, the seeds, core, and flesh of apples, crabs, pears, and quinces are each strongly suggestive of the other in many particulars. The same is true of the medlar, but this fruit is a comparative stranger to the American fruit grower. The loquat is also a pomaceous fruit, but it is also subtropical or nearly so and not deciduous. The fruits comprising the pomaceous subgroup have much in common in their history and cultural requirements. They differ widely, however, in their economic status.

The fact has already been stated that the most of our tree fruits represent exotic or foreign species that were introduced into America. However, many of the berries or "small fruits" represent species native to America. The list of fruits derived from introduced species and recorded elsewhere (p. 112) includes all of the pomes named above with the exception of the crabs.

Whence came the pomaceous fruits?—The apple (*Malus sylvestris*) is believed to have been distributed from prehistoric times both in the wild and in cultivation throughout much of Europe where it is believed to have been indigenous; also, south of the Caucasus and in northern Russia. It is to be noted, however, that with few exceptions the varieties now grown here are of American origin, the outstanding exceptions being some of the early ripening sorts of Russian origin. Probably no other fruit grown in America has given rise to so large a number of named varieties as has the apple. No one knows even approximately how many varieties exist, or

have existed, but American literature records something like 7,500 and the number of synonyms is considerable larger. Several hundred varieties are offered to the planters every year by the nurserymen, though the tendency is to reduce the number. Of those sold by the nurserymen perhaps not more than 50 are of large commercial importance.

The pear.—The pear (*Pyrus communis*) grows wild throughout temperate Europe and western Asia, south of the Caucasus, and in northern Persia, its history being closely parallel to that of the apple. The Oriental pears of which there are several species of considerable importance occur wild in different parts of China, Korea, Manchuria, and Japan, though no single species is indigenous in all of these regions. Pure representatives of these species are but little cultivated in this country for their fruit, but hybrids between horticultural varieties of *P. communis* and Oriental species, especially *P. serotina*, are extensively cultivated, the best known varieties being the Kieffer, Le Conte, and Garber. Some of the Oriental pears, especially *P. calleryana* and *P. ussuriensis* are coming into prominence as stocks for use in propagating pears because of their resistance to blight. Unlike the apple, but few pure "communis" pear varieties grown in the United States are of American origin, most of them being European sorts which have come to us largely from France and Belgium. Although the number of varieties grown is very large, the bulk of the crop in any year is composed of perhaps not more than six or eight sorts of which the Bartlett is by far the most extensively grown of any. Probably the Kieffer is second in quantity production.

The crabs.—The crabs from an historical standpoint are difficult to define. Many of the cultivated varieties are hybrids, and the origin of some of the most important sorts is unknown. The Siberian crab (*Pyrus baccata*) has entered into the parentage of some of them, possibly also some of the native American crabs, whereas certain varieties usually classed as crabs have an apple variety (*Malus sylvestris*) as one of their parents.

The quince.—The quince (*Cydonia oblonga*) in its native habitat is not as widely distributed as the apple and pear, but it is reported in northern Persia near the Caspian Sea, in the region south of the Caucasus, and perhaps elsewhere as in the Crimea and in northern Greece, but the possibilities of its having become naturalized in some parts of Europe are recognized by some. Certain authorities consider it native to southern France and central Europe.

The medlar.—The medlar (*Mespilus germanica*) is found in central and southern Europe to the Caucasus, and also in a wild state in England, but doubt exists as to its being indigenous there.

The loquat.—The loquat (*Eriobotrya japonica*) is an Oriental, being considered native to China and Japan.

In reference to the foregoing, Figure 2 indicates in a striking way the relative proportions of fruits of foreign and of domestic origin that are produced in this country.

Cultural Requirements and Economic Status

The cultural requirements of the members of the pomaceous subgroup are closely similar. Clean tillage, tillage and cover or green-

manure crops, sod culture, and the maintenance of the soil fertility by the use of commercial fertilizers and animal manures—these cultural systems and their modifications are variously employed as occasion or circumstances suggest. The use of a particular system of culture as a feature in disease control is illustrated in the maintenance of pear orchards. The high degree of susceptibility of rapidly growing pear trees to blight is recognized. In order to retard or restrict the growth, orchards are commonly maintained under sod culture as the tillage methods tend to stimulate rapid growth. The members of this subgroup are subject in a marked degree to the same insects and diseases. In substantially a like degree, the same spray schedule and other means of control are applicable to these several fruits. On the other hand, there are certain serious insect pests and diseases that occur on one or more of them and not on the others.

In any of the pruning methods followed, it is essential that the habit of growth and fruit-bud formation be carefully regarded. Even different varieties of the same kind of fruit have different growth and fruiting habits. These must be taken into account in pruning if the grower is to be successful, otherwise he may unwittingly remove an undue proportion of fruit-bearing wood. The quince has an entirely different fruiting habit from the apple or pear. The fruit buds of the latter form the preceding season largely on spurs 2 years or more old and in some varieties many are terminal on 1-year growth. Those of the quince, however, do not form the preceding season, but at the terminals of the current season's growth. Thus, a quince tree (or bush) starts into growth in the spring and shortly a fruit bud develops, if conditions are propitious, at the terminal end of each shoot, thus bringing to a close for the season any further elongation of the shoots. This accounts for the slow, restricted growth and dwarfish habit of quince trees or bushes. Obviously, if the new seasonal growth of a quince tree is weak or lacking, it necessarily follows that the potential possibilities of an abundant crop are lacking in a corresponding degree.

The economic status of the apple and pear, the two most important pomaceous fruits, is only partially indicated by the records of production, but they are suggestive and are given below for the five-year period, 1920 to 1924, inclusive.

TABLE 2.—*Apple and pear production for the 5-year period, 1920 to 1924, inclusive*

Year	Apples		Pears
	Commercial crop	Total crop	Total crop
	Barrels	*Bushels*	*Bushels*
1920	33, 905, 000	223, 677, 000	16, 805, 000
1921	21, 557, 000	99, 002, 000	11, 297, 000
1922	31, 945, 000	202, 702, 000	20, 705, 000
1923	34, 303, 000	196, 770, 000	17, 390, 000
1924	28, 063, 000	171, 250, 000	18, 868, 000

There are no production records of importance on crabs and quinces. Both fruits are widely distributed. In a general way it may be said that they accompany the apple in its geography but

the volume of production of each is small. Quinces are handled in car-lot shipments from a very few points, but the total crop in most centers of production is so small that express or other small lot movements meet the shipping requirements.

To the inexperienced grower the quince is a deceptive fruit in some respects. The retail price in the market is usually high compared with many other fruits. The supply in sight at any time is usually limited. The natural line of reasoning from such a combination of observations is that the production of quinces is below the demand; therefore, it should prove a profitable fruit to grow. The facts are: The trees make a slow growth and are very susceptible to several destructive diseases difficult to control. The crops are irregular and undependable and average yields are low. Retail

FIG. 34.—A well-developed quince tree of mature age. Quinces are often grown in bush rather than in tree form

prices, therefore, which seemingly are very high may represent a disastrously small return to the grower on a tree or acre basis. Besides, the quince is used but little except in jelly making and for preserves. The housewife is usually satisfied with a small supply as compared with a fruit that is used in many different ways extending through a long season. Therefore, the demand is capable of being fully met with a comparatively small production. In the main this is true also of crabs.

Perhaps the safest way for the average quince grower is to plant the trees in the garden or near the house where special care can readily be given and to grow them mainly for home use; local markets may be supplied from any surplus. Or, trees may be planted on land that would otherwise be unused but where they can conveniently be given such special attention as they require (fig. 34).

In that case if the trees or the crop fail it does not make serious inroads in the farm income and anything returned is that much gain.

The medlar is practically unknown in American fruit production, being rarely found outside of botanic gardens and other similar places. Central Europe is its native habit where it is more generally known than in this country. The tree, or bush, which may attain a height of 10 or 15 feet, is hardy as far north as central New York. The fruit, which has some characteristics of the apple and others of the quince, is not much larger than an ordinary crab. Medlar trees and fruits are shown, respectively, in Figures 35 and 36.

The loquat occupies the rather unique position of being an evergreen pomaceous fruit. All the other pomes here referred to are deciduous. Although considered of delicate flavor by many and

FIG. 35.—Trees of the medlar

more or less widely distributed in the Gulf coast region and in some parts of California, the loquat is of little importance in the fruit industry. However, it is cultivated in many of the warm regions of the Old World and is reported to be produced in Japan anually in quantities of 20,000,000 pounds or more. Loquat fruits are shown in Figure 37.

The geographical distribution of apples and pears in the United States is indicated in Figures 18 to 21. These graphs show the range of these fruits, except in regions where the trees occur in too small numbers to be expressed in a unit of 500 acres. In certain areas readily observed in the graphs a heavy concentration of dots symbolizes commercial production, though heavy production occurs in many areas where the dots indicate no greater density than in other areas where commercial orchards do not occur. It should therefore be noted that figures showing area devoted to a crop, or numbers of trees in a given territory, may prove very misleading unless cor-

rectly interpreted. A hundred thousand trees in a county if contained in a comparatively few orchards of a few thousand each may represent community interests of considerable commercial importance,

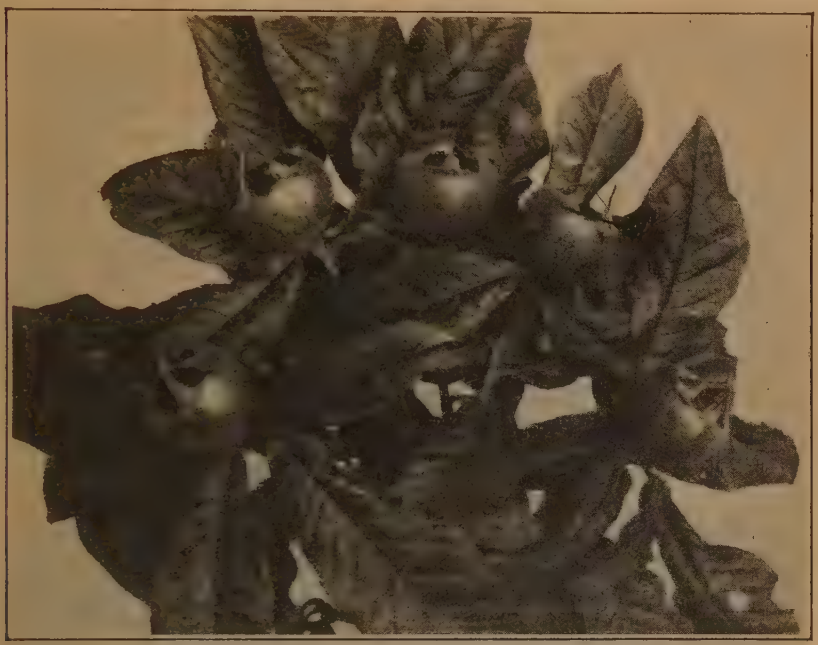


FIG. 36.—Fruits and foliage of the medlar

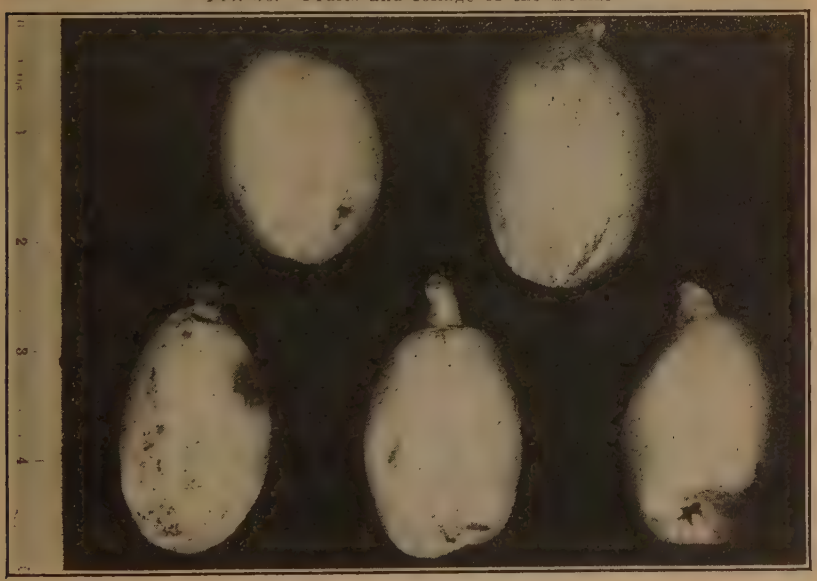


FIG. 37.—Fruits of the loquat

whereas if the trees are widely scattered, with only a few in a place, no commercial industry whatever is represented. Figures 38 to 41 show typical views in different apple and pear growing regions. In

this country the extensive culture of apples in the North Central States, with present varieties, is limited by the severely cold winter weather. North of latitude 42°, slightly north of Chicago between Lake Michigan and the Rocky Mountains, production of winter apples is limited. This is because the varieties formerly available were not hardy enough to withstand the rigorous climate peculiar to that section. Recently varieties have been introduced that are promising for parts of Iowa, Minnesota, Wisconsin, and other portions of the upper Mississippi Valley. On the other hand, regions with long, hot summers and with winters so mild that the trees remain in a more or less active state of growth are not favorable for the growing of apples. In the eastern part of the United States, where irrigation is not practiced, apples require a rainfall during the growing season

FIG. 38.—View in a 55-year-old apple orchard in western New York. The trees were planted in 1860. The tree in the foreground had a spread of limb of 50 feet. The trunk, 1 foot above the ground, had a circumference of 7½ feet

of at least 18 inches. In the Great Plains States, west of the 18-inch line of warm-season rainfall there are but few orchards. Although the apple has more or less definite climatic limitations, its many varieties give it a geographic distribution comparable with that of many other staple crops. The lack of transportation facilities is the limiting factor in many sections that are climatically suitable for apple growing.

The Drupaceous Fruits

In like manner to the foregoing, it is noted that the peach, plum (including prune), cherry, nectarine, and apricot are "drupaceous" or "stone" fruits, and in this subgroup, close similarity in structure of seed or pit, and flesh is readily recognized. The almond, among the nuts, is closely related to the members of this subgroup, the kernel being the edible part; the pericarp, which corresponds to the flesh of

the peach or plum dries up on maturing and is not edible. As in case of the pomaceous fruits, the drupaceous subgroup is made up largely of foreign species that were introduced in a very early day, the present representatives in the form of named horticultural varieties, excepting peach varieties, being themselves European sorts in a much

FIG. 39.—A young Yellow Transparent apple orchard in southern New Jersey. It has received clean tillage. The trees were headed higher than is commonly done. Compare with Figures 28

FIG. 40.—A somewhat typical view of the apple orchards in the Wenatchee Valley, Wash.

larger proportion than is true of the pome varieties. Nearly all the peach varieties now grown are of American origin. Further details as to varieties appear as the historical notes are developed.

Whence came the drupaceous fruits.—Strangely enough the place of origin of the peach (*Amygdalus persica*) is unknown. Though

growing in various parts of the Old World in substantially a wild state, doubt exists as to its being indigenous in any region where it has been found. While commonly attributed to Persia, as suggested

FIG. 41.—A well-kept Bartlett pear orchard in the Rogue River Valley, Oreg.

FIG. 42.—A fairly typical peach orchard in its sixth season in western New York. The fruit is used for shipping in the fresh state. The tops of the trees are pruned with a view to keeping them open so that the sunlight can reach every fruit as it develops

by the species name applied to it, De Candolle points to the fact that since remotest antiquity the peach has been cultivated in China. The early introduction of peaches into the American Colonies, thus mak-

ing the development of peach growing substantially coincident with the development of the country, has been stated on a previous page. It remains to be said that the varieties now grown, with the exception of the Salwey and perhaps one or two others rarely found, are of American origin.

In but few instances in the whole fruit industry has an important enterprise been developed to so large an extent on a single variety—the Elberta—as has the peach industry. During the 50 years more or less, of the existence of this peach hundreds of other varieties have been grown. Some varieties of earlier origin than the Elberta are still being planted, and many others meet important needs in the industry but the predominating position of the Elberta remains. In this connection, however, mention should

FIG. 43.—A peach orchard location in the Alleghany Mountain section of West Virginia

be made of such special purpose varieties as the Muir and Lovell, grown for drying, and several yellow clingstone sorts produced for canning, all of which are extensively planted in California. The graph appearing as Figure 22 on page 171 shows the distribution of the peach industry.

Peaches are more susceptible to damage by winter killing and also by spring frost than apples, consequently their culture is most extensive in those sections which have relatively mild winters, or where the climate is tempered by the influence of ocean currents or large bodies of water. There are three rather distinct types of cold or frost injury to peaches. In the normally colder climates, such as the region of the Great Lakes, the trees sometimes suffer from a type of winter injury associated with immaturity of wood. In the warmer climates, such as prevails in the Southern States, there is danger of winter injury both to wood and buds, but principally to the buds which respond readily to short periods of warm weather in winter where the warmth may be followed by damaging but sea-

sonable temperature. The third type is general and consists of injury to buds or blossoms by a late spring frost. When thoroughly dormant, peach buds may survive a temperature of —12 to —20° F.

The production of peaches during the last five years is shown in Table 3.

TABLE 3.—*Total estimated production of peaches throughout the United States for five years, 1920 to 1924*

Unit	1920	1921	1922	1923	1924
Bushels	45, 620, 000	32, 602, 000	55, 852, 000	45, 702, 000	54, 119, 000

FIG. 44.—A peach orchard on Knobly Mountain in West Virginia. Though very steep, soil erosion is practically unknown here because of the porous character of the soil and subsoil. Yet it is fairly retentive of moisture. The lower side of the orchard is several hundred feet above the floor of the valley, so that the cold air settles far below the level of the orchard. The elevation at this latitude is sufficient to reverse the conditions illustrated in Figures 13 and 14. As a result, because of the decreasing temperature toward the higher altitude of the crest of the mountain, the trees blossom and the fruit ripens in the average season two or three days earlier at the lower side of the orchard than at the upper side

The nectarine.—The nectarine is but little grown in this country. Many people are unfamiliar with its characteristics. It has been described as a peach with the skin of a plum, which is fairly expressive. It is regarded as a sport or mutation of the peach; the tree is indistinguishable from the peach. In fact, a peach tree is occasionally found on which a single branch produces nectarines. One case at least has been observed where a single fruit on a small twig of a peach tree was typically peach on the exterior of one side and typically nectarine on the other. A tree grown from a peach pit which produces nectarines is not a particularly rare occurrence. In general, nectarines could doubtless be grown practically anywhere that peaches are grown, though very few are produced. The fruit reaches the market in only small quantities. One difficulty in pro-

duction is the susceptibility of the fruit to injury from the plum curculio. Only a few named varieties are in the trade. The nectarine is probably much more popular with the English as a fruit for growing under glass than it is anywhere in America.

The plum.—The plum, as grown in different parts of the United States, includes three rather distinct types; a fourth type, composed of hybrids between two of the other types might also be specified. These types include the European or "domestica" plums (*Prunus domestica*), the Japanese plum (*P. salicina*), and the native plums representing several species, of which *P. Americana* has given by far the largest number of named horticultural varieties of any. Other species represented by named varieties are *P. hortulana*, *P. angustifolia*, also a number of botanical varieties, and certain other species of less importance horticulturally. Uncertainty exists as to the native habitat of the European plum. Though grown in a half-

FIG. 45.—A prune orchard 21 years old of the Agen (*Petit* or *French*) variety in California. This is the leading prune in that State

wild state for 2,000 years in Europe, authorities doubt that it is indigenous there. It has also been found wild south of the Caucasus and in northern Persia, but without conclusive evidence that it sprang from these regions. In the United States the European plum is widely disseminated and constitutes an exceedingly important part of our plum industry. The largest production is in the northern fruit districts, in the Pacific States, and the Northwest. This type does not withstand well the long, hot and frequently dry summers of the South, and even the conditions that characterize the middle latitudes are, in general, rather adverse to most of the varieties. The European type, as represented in this country, includes many varieties that are of foreign origin, though others of prominence in the industry are of American origin. The prunes are also included in this group, the most important varieties for drying, the Italian Prune and the Agen (*French*), being introduced sorts (fig. 45).

The Japanese plum, although widely disseminated from Japan and grown there somewhat extensively, is believed to be native to China. The named varieties of this type have been conspicuous in the plum industry of the United States for the last 35 or 40 years. Some of the varieties were introduced direct, others have originated as seedlings in this country. Though some of those coming in the form of vegetative parts were brought under name, much confusion in identity developed in the late eighties and during the nineties as the varieties began to be known. This was due in part to the fact that fruit names in Japan are commonly group or class names and do not refer to specific sorts. Seedling propagation in the early days of this type of plum in this country with reproduction more or less closely approximating the variety, may also have contributed to the difficulties. Japanese varieties of plum have become widely distributed throughout a large part of the country. The trees are not sufficiently cold resistant to withstand the winters in the most northern fruit districts and in the rather severe climatic conditions in much of the Great Plains area where dry farming methods must be employed, they meet their limitations. Otherwise, the type may be found almost anywhere that plums are grown. The outstanding weakness of the type is the habit of very early blossoming which results in rather frequent injury from spring frosts.

Our native species of plum vary greatly in their habitats. Some have a very wide range of distribution; others are distinctly regional. Some of the hardiest, most cold-resistent, and drought-enduring tree fruits grown in the country represent native plum species. Furthermore, other representatives are adapted to the climate in the warmer parts of the land. Thus it is that the native plum, in its several species, is doubtless more widely distributed throughout the entire country than any other tree fruit. Excepting possibly the strawberry, there is probably no other fruit as widely distributed in the United States as the native plums. The fruit of the native varieties, as a rule, does not reach such standards of size, shipping, and dessert qualities as to render it of more than minor importance commercially, but for home use in canning and other culinary purposes, it is highly prized, especially in those regions where fruit growing is restricted because of the severity of the climate in drought, cold, or desiccating winds. Selected varieties of native plum form one of the most dependable fruits for growing in the Great Plains area.

Perhaps it is in giving origin to the fourth type of plum, already referred to, that both the native and Japanese plums have made their largest contribution to the fruit industry. It may seem strange that the native species, many of them at least, and the Japanese plums hybridize readily, while neither of these types hybridize with the European plums. Considerable plum breeding has been carried on by a number of specialists, and as implied, varieties highly important in the plum industry have been developed and are extensively grown. The distribution of plums, but without regard to type, is shown in Figure 23. Few statistics of plum production exist, but according to the fourteenth census, the crop for 1919 amounted to a little more than 19,000,000 bushels, of which 16,624,000 bushels were produced in California, Oregon, Washington, and Idaho. About two-thirds of

all the plum trees in the country on January 1, 1920, were in these States.

The cherry.—In the cherry, there are two types rather strikingly different in tree and fruit, and a third, whose members are hybrids between the other two and which to some extent combines their characteristics. The two distinct types are the sour cherry (*Prunus cerasus*) and the sweet cherry (*P. avium*). The hybrids, represented by several well-known varieties, are termed the "Duke" type, or group Such an authority even as De Candolle finds difficulty in tracing the sour cherry to its original habitat. Evidence seems to point to its occurrence in the region between the Caspian Sea and Constantinople in a very ancient time, and it was long ago reported as wild in the mountains of Italy and in central France. It was known and be-

FIG. 46.—A 6-year-old sour cherry orchard of the Montmorency variety in western New York

coming naturalized at the beginning of Greek civilization. The sweet cherry is said by De Candolle to be wild in Asia, in northern Persia, in the region south of the Caucasus in Armenia, southern Russia, and in the area southward from Sweden to the mountainous parts of Greece, Italy, and Spain. Though apparently the sweet cherry was much more widely distributed than the sour type in ancient times in the Old World, that does not hold true in this country at the present time.

The sour cherries are more hardy than the sweet sorts, with respect both to cold and drought resistance. In general, the northern range of adaptability of the sour varieties corresponds somewhat closely with the apple excepting possibly the most hardy varieties of the latter; the northern range of the sweet cherries corresponds more nearly with that of peaches than with any other fruit with which comparison is illuminating. Southward, the range of both sweet and sour varieties is limited mainly by their response to climatic con-

ditions. Both types are grown somewhat in the middle latitudes, but in diminishing quantities south of what is commonly designated as the northern fruit belt or district. More or less successful production is possible, however, at the higher elevations in the southern extension of the Appalachian Mountain area.

The sour cherry is represented in this country mainly by introduced varieties. A very few sorts, the Early Richmond, Montmorency, and English Morello comprise the bulk of the crop. In fact, the Montmorency alone is produced in larger quantity, probably several times more, than all other sour varieties combined. Cherry production east of the Rocky Mountains consists very largely of sour sorts with only a small proportion of the crop in any year consisting of sweet cherries (fig. 46). On the other hand, sour cherries are practically nonexisting commercially in California and in the Northwest where sweet

FIG. 47.—A sweet cherry orchard in its eighth season of the Napoleon variety in western Oregon

cherries are grown extensively (fig. 47). The fourteenth census reported the cherry crop of 1919 as 3,946,000 bushels, of which 1,297,000 bushels were grown in California, Oregon, Washington, and Idaho.

The apricot.—The apricot (*Prunus armenica*), as the species name suggests, has been considered by some to be native to Armenia, but doubt exists as to whether it may not have been introduced there at a very early date. The Chinese are said to have known this fruit 2,000 or 3,000 years before the Christian era, and a Chinese origin is accepted by some authorities as probable. The apricot, from a commercial standpoint, has rather striking restrictions geographically, not because the tree lacks hardiness or adaptability so far as its growth is concerned, but mainly because of its blossoming habit. The fruit buds respond quickly to the first warm days of spring and open very early—about the first of any of the tree fruits. This results in the buds and blossoms being much exposed to temperatures that are injurious. Such temperatures, however, may be

entirely seasonable and would cause no injury with the buds perfectly dormant. This situation makes the crop very uncertain and renders the planting of the trees unwise in many sections where they would otherwise be well adapted. The tree can be expected to thrive under about the same conditions as the peach. Though planted rather widely, a few trees in a place, the commercial production of apricots is practically confined to sections in California, especially certain well-protected valleys where frost injury is a less serious factor than in most regions. Orchard heating is practiced in these valleys to some extent, the Weather Bureau cooperating by distributing through a special service warnings of impending dangerous temperatures. In 1919, that State produced 5,907,000 bushels of apricots out of a total crop for the country of 6,130,000 bushels.

What is true of the pomaceous subgroup with respect to similarity in the cultural requirements of its members is likewise true of the drupaceous subgroup—peaches, plums, cherries, and apricots. In general, these fruits require the same or very similar cultural treatment. Clean tillage, or tillage with cover and green-manure crops, represents the usual system of orchard maintenance. Sod culture is rarely used with any member of this subgroup. In large measure the same or a similar spraying program is followed, because of the similarity of insect pests and diseases to which the various fruits are subject. Even the details of pruning are much the same, the principal difference being in treating the peach. The peach bears its fruit on wood of the previous season's growth. If for any reason, a tree makes a very small growth in any year, its potential crop-producing capacity is limited accordingly. Pruning, as well as other maintenance operations, may therefore be directed, as occasion requires, to the simulation of new growth. Although a certain amount of new growth is important in case of the plum, cherry, and apricot, these trees bear much of their fruit on spurs; hence the matter of new annual terminal growth is of less importance from the standpoint of crop production than with the peach.

Of the other deciduous fruits enumerated on an earlier page, there still remain for further comment, persimmons, both native and Oriental, the pomegranate, fig, and native papaw. Each of these fruits represents a different subgroup, but the members are relatively unimportant commercially compared with most of the pomes and drupes. It may be noted, however, that the fig is commonly included in the works on subtropical fruits; Japanese persimmons and pomegranates are rarely put in a group that includes apples, but since they are distinctly deciduous in habit of growth and development, and are grown in regions where the commercial production of peaches and some other Temperate Zone fruits are commercially produced, there seems to be abundant reason for grouping them with other deciduous fruits in any general classification plan.

The persimmon.—The native persimmon (*Diospyros Virginiana*) is indigenous in the eastern United States from Connecticut southward to Florida and westward to Texas and Kansas. The Oriental or Japanese persimmon (*D. kaki*) has been grown in Japan and China for many generations. No special investigation to determine its original habitat appears to have been made. The first introduction of the Japanese persimmon to the United States is said to have

been made by the Perry expedition, but many other importations have since occurred. The number of varieties that has been grown is large, but at the present time the nursery catalogs list perhaps not more than 16 or 18 sorts and hardly more than a half dozen of these are prominent. One variety, the Tamopan, was introduced from China; most of the others came from Japan, while the remainder, representing a small number of varieties, have originated in this country.

The persimmons, native and Oriental, have never come very fully into their own in this country. The dozen or more named varieties of native persimmons are selections from the wild and represent merely individual trees that simply happened to be superior to the others. Few of even the named varieties have ever been propagated to any extent by nurserymen for the trade. Moreover, the demand for them has never been such as to furnish much inducement for propagation. A few small orchards have been planted and occasionally a man, more appreciative of the value of the fruit than the general mass of people, has planted trees about the build-

FIG. 48.—A Japanese persimmon orchard in its third season's growth in Florida

ings. For the most part, the fruit gathered from wild trees is sufficient to satisfy local demands; little or no shipping is done.

The Japanese persimmon is cultivated much more than the native. Orchards of several hundred trees each are not especially uncommon (figs. 48, 49, and 50). Though the fruit is not as rich nor the eating quality as high as the native persimmon, the size, appearance, and good shipping qualities make it more appealing as a commercial fruit than the native form. The trees are less hardy than the native tree. They may be grown in the Atlantic Coastal Plain region as far north as Norfolk, Va., or possibly even southern Maryland in close proximity to Chesapeake Bay, though they are not hardy in the vicinity of the District of Columbia. They thrive in eastern North and South Carolina and in the Gulf States, including a considerable portion of Texas. In California also, this fruit is grown more or less. In fact, planting has been more active there during the last few years than in any other part of the coun-

try. The fourteenth census (January 1, 1920) reported about 28,000 trees of bearing age, nearly half of which were in California. At the same time there were about 24,000 trees not of bearing age, fully half of which were in Florida. Recent plantings in California doubtless modify this proportion at the present time. The crop of 1919 averaged slightly more than a bushel to the tree for the number in bearing.

FIG. 49.—A Fuyu persimmon tree in the orchard shown in Figure 48

The persimmon is known above all else for its "pucker" when eaten before it is fully ripe. This characteristic is due to the tannin which is in the immature fruit. When the fruit becomes thoroughly ripe, certain changes occur so that the tannin is not noticed in eating the fruit, though it still remains in it. There are certain varieties of Japanese persimmons which do not possess this characteristic

pucker even when immature. The fruit may be eaten while still hard. These varieties are commonly termed sweet persimmons. The common notion that frost is a necessary agent in the ripening of persimmons is unfounded. Late varieties may ripen after frosts occur and the ripening processes may be hastened thereby, but the fruit would mature in due course in the complete absence of frost. The early sorts become fully edible without respect to the occurrence of frost.

FIG. 50.—A Tanenashi persimmon tree in the orchard shown in Figure 48

The pomegranate.—The pomegranate (*Punica granatum*) is considered to be native to Persia and adjacent countries, though found in an apparently wild state in a much wider range than this. It is grown only to a very limited extent. It is rather distinctly a warm-climate fruit, occurring mainly in the Gulf States and in California. Shipments in some quantity have been made from California, but elsewhere production is practically confined to trees, or, more accurately, as they usually develop, to bushes in the yards and gardens, with rarely a planting of larger size. The Fourteenth Census reported a total of bearing trees of about 28,000, of which more than 24,000 were in California, the others being widely distributed, a few hundred trees in each of several States. The number of trees not of bearing age was nearly the same as the number in bearing, and all, excepting about 1,000 of these, were credited to California. More than 92 per cent of the crop of 1919, amounting to a little over 1,000,000 pounds, was produced in California.

The fig.—The fig (*Ficus carica*) has been grown from a time that defies the memory of the human race. It entered into the literature of ancient times, both sacred and secular, as have few other fruits

or plants. Though its native habitat evidently included much of the Mediterranean basin, it is supposed to center in Syria. The fig, compared with any other fruit, is one of nature's oddities, both in its morphology and in its manner of development. In general, its distribution in this country conforms rather closely with that of the Japanese persimmon. It is widely distributed throughout the Gulf States, the Carolinas and eastern Virginia; also in California, and to a limited extent, in Arizona. As in the case with the Japanese persimmon, figs are not hardy in the vicinity of the District of Columbia, but in the region of Norfolk, Va., where the winter climate is influenced by the close proximity of the waters of the ocean and Chesapeake Bay, fig trees thrive. In fact, in that section, the trees are apparently less subject to winter injury than in almost any other section east of the Mississippi River. There, the winter temperature seldom drops to a degree that is critical for fig trees in a perfectly

FIG. 51.—Fig orchard of the Adriatic variety about 20 years old in California

dormant condition; and further, the trees evidently remain more completely dormant during the winter than they do throughout most of the Gulf coast region. Farther south, warm spells occur during the winter and stimulate the buds into growth sufficiently to make them tender. Later, temperatures are likely to occur which are low enough to be disastrous to the tender buds. As a result, winter injury to fig trees throughout the Gulf States is not uncommon.

The principal commercial industry in fig production is in California where figs have been grown evidently since the days of the early Mission Fathers. However, it is only within comparatively recent years that extensive commercial plantings have been made (fig. 51.) The figs grown in California include varieties of two types: The Adriatic and the Smyrna. Those of the Adriatic type set fruit and develop it to maturity without being pollinated. Varieties of the Smyrna type, in order to develop fruit to maturity,

must be pollinated. The principal variety of Smyrna fig introduced from Asia Minor as the Lob Ingir is known in California as the Calimyrna. This type of fig requires for pollination the agency of the fig insect (Blastophaga) which breeds only in the caprifig ("goat fig"), a wild form that produces inedible fruit. For nearly 20 years after Smyrna figs were introduced into California the trees regularly shed their crops without any of the fruit reaching maturity. After several attempts and failures the fig insect was first successfully introduced into the United States in 1899 by the United States Department of Agriculture and as soon as established and distributed no further trouble was experienced in getting fruit to set and mature.

FIG. 52.—Fig orchard of the Magnolia [8] variety in its fourth season in Texas

Although chiefly grown for drying, the Smyrna fig is being canned on an extensive scale and shipments of fresh Calimyrna figs in carload lots are also being successfully made.

In California, much of the fig crop including both Adriatic and Smyrna types is dried. In the southeastern United States the situation is very different. In fact, the character of the fruit grown in this humid region is so different from that grown under the semiarid conditions of California, as to be almost equivalent to another kind of fruit. It is true that the varieties grown in the two regions are different but that probably does not account for the marked differences in the product. In the Gulf coast region of Texas, commercial fig production is an industry of some importance. The product is practically all canned or preserved. A few commercial orchards occur in southern Louisiana, also in the Norfolk section in Virginia. In the intervening area, that is, throughout the Coastal Plain region and the Gulf States between the Norfolk section at one extreme and the Mississippi River on the other, there can not be said to be a fig

[8] The grower has this variety under the name "Texas Wonder," but it appears to be identical with the Magnolia in all essential particulars.

industry; yet, throughout much of this territory there is perhaps no other kind of fruit tree more widely distributed nor more often seen than the fig. The trees (or more often bushes) occur generally about the buildings and in the yards where they seem to receive some protection from low temperatures and find other conditions more favorable to their requirements than those which occur under open field conditions (figs. 52 to 55).

Fig trees have been grown in some parts of the southeastern United States, perhaps ever since the early Spanish settlers occupied the land, and many orchards have been planted. Early failure has been the rule, however, owing probably to a combination of various causes. In the aggregate a considerable number of trees are to be found in this region, and the product is of substantial importance. The fruit does not hold up well in shipping; hence, the crop is used locally. In some sections the surplus from the home plantings is

FIG. 53.—A fig tree of bush form having many stems instead of a single trunk

assembled at central points and from them, it is taken to canneries located perhaps in an adjoining town where it is packed for the trade.

In 1919 the fig crop of the country amounted to 26,876,000 pounds of which 21,800,000 pounds were produced in California. On January 1, 1920, about 500,000 of the 886,000 bearing trees were also in that State, as were 594,000 of the 783,000 trees not of bearing age.

The papaw.—The native papaw (*Asimina triloba*) hardly deserves mention in the present connection on the basis of any commercial importance. Yet within the range of its natural distribution, which is much the same as the native persimmon, the fruit is very popular. It occurs rarely, if at all, east of the Hudson River, whereas the persimmon is found occasionally in Connecticut and Rhode Island. Its northern limits include most of New York and

Michigan, while the persimmon occurs in those States, as in New England, only rather rarely. Southward, the papaw reaches northern Florida and westward to and including Texas and eastern Kansas. A few choice selections from trees in the wild have been named though few, if any, have been propagated for the trade. A few nurserymen furnish seedling trees, but the demand for them is too light to justify much attention to propagation. The popular press contains an occasional article about the native papaw written as a rule by some enthusiastic lover of the fruit, but it still remains practically in the wild state. How great the possibilities may be for improvement by breeding and selection is unknown, since, as

FIG. 54.—A Celeste fig tree about 20 years old in southern Alabama. A rather typical location for a fig tree in the Gulf States

with the persimmon and various other native fruits, it has not received serious attention in the line of amelioration.

Subtropical Fruits

The fruits commonly considered as subtropical represent great diversity in character, uses, botanical relationships, and in other respects. Substantially, the term "subtropical fruit" concerns those which are adapted to a subtropical climate. There is but little use for the term "tropical fruit" so far as it relates to fruit production within the borders of the continental United States. In general, fruits grouped as subtropical will endure slight frosts without serious harm whereas tropical fruits in the popular sense, at least, are restricted to those parts of the world entirely free from frost. The southernmost Florida keys comprise the only part of the continental United States where frosts are unknown. Of course many subtropical fruits are grown in tropical regions; it is likewise true that some fruits native to the Tropics are grown in the warmer parts of the

United States where occasionally they may be subjected to slight frosts.

There is some overlapping of deciduous fruits into subtropical fruit territory; in fact certain fruits classed by some writers as deciduous are considered subtropical by others. For instance the fig is commonly discussed with the latter group, but it is distinctly deciduous in habit of growth and its adaptability to the regions preeminently subtropical is somewhat doubtful, though grown successfully in those representing a transition from temperate to subtropical. Only a few varieties of plums and peaches are adapted even to those transition regions where the Temperate Zone blends into the subtropical and apples and cherries are not at all adapted to those regions. The climatic conditions of tropical and subtropical regions

FIG. 55.—Figs are commonly grown on bushes in the Gulf States, but a tree of large size is seen occasionally growing where conditions have been especially favorable. This view is in southern Alabama

favor the continuous growth of vegetation. As a result the trees and most other plants are evergreen, the foliage being retained permanently and not dropping as does that of deciduous trees, at the end of the growing season. There is, in fact, no distinct end to the growing season in tropical and distinctly subtropical climates. The old leaves drop from time to time, but new ones are more or less constantly developing. During the cooler months of the year vegetative activities slow down somewhat but do not become completely inactive as in cooler climates.

An enumeration of the better-known subtropical fruits includes the following: Citrus fruits, consisting of the orange, lemon, grapefruit (formerly designated as pomelo), lime, kumquat, and citron—the latter rarely grown in this country, and not at all commercially;

the annonaceous group, consisting of the soursop, sweetsop (sometimes called sugar apple), cherimoya, custard apple, pond apple, and various others (the native papaw belongs to this group but is, of course, not found in subtropical climates; it is, moreover, the only representative of this group among the fruits which grows in the North); the myrtaceous group, consisting of the guava, feijoa, rose apple, and various others of little importance; the sapotaceous group, which includes the sapodilla, star apple, and others not much known; also various fruits not falling in any designated group, but which are of much importance—the olive, avocado, mango, pineapple, date, and the papaya, the latter sometimes called papaw or melon papaw. When the name "papaw" is used for papaya there is danger of confusion with the native papaw to which it is in no way related.

Discussion of the fruits enumerated in the preceding paragraph must here be restricted to those which have attained a status that gives them economic relationships.

Citrus Fruits

History.—The orange is one of the earliest of cultivated fruits. It is indigenous to the Indo-Chinese region and was disseminated, thence to the Mediterranean countries and eventually to America by the early Portuguese and Spanish explorers. It was probably among the first fruits brought from the Mediterranean region into Florida. The fact that when permanent settlements were first made in Florida the orange was already established and practically growing wild, proves its very early introduction and suitability to the soil and climate. The seeds were probably scattered by the Indians who obtained the fruit from trees planted by the early Spanish adventurers. Authentic records of the early Spanish missions in California show that here also the orange was among the first fruits planted, being brought from the still older missions in Lower California. The first grove plantings in California were seedlings derived from these mission oranges.

Commercial citrus development in Florida falls into two main periods separated by the "big freeze" of 1894–95. An annual production of 6,000,000 boxes in 1894–95 was cut to almost nothing the following year. Following 1896 orange growing was gradually resumed, but with the industry transferred from northern Florida to the central and southern portions of the State. A second great impetus to Florida citrus development came with the somewhat suddenly developed popularity of grapefruit as a breakfast fruit. This occurred during the first decade of the present century.

The early period of Florida citrus development was characterized by the planting of orange seedlings, though many groves were made by top-working the wild sour-orange trees that occurred scattered through the Florida hammocks, especially along the St. Johns and Indian Rivers. Nurseries used sour-orange seedlings chiefly as budding stocks, and many varieties were being propagated just prior to the 1894–95 freeze. After this disaster, further experimentation was carried on with newly introduced orange varieties and local varieties derived from seedlings of apparent merit. Of such varie-

ties only a few have won a permanent place for themselves, but these few sorts now largely compose the Florida orange crop (fig. 56).

Commercial orange growing in California may be said to date from the introduction into California in 1873 of the navel orange (fig. 57). It proved to be so much superior to any other orange then grown there that soon after its first fruiting in California in 1878 it become the leading variety planted. This most famous orange was introduced from Bahia, Brazil, by the late William Saunders of the United States Department of Agriculture in 1870. It is now generally called the Washington Navel. It originated about 1820 near Bahia as a bud mutation from a Portuguese variety, the

FIG. 56.—A grove in one of the typical orange-producing sections of Florida

Selecta. Its seedlessness, dessert quality, and distinctive character, together with its adaptability to California conditions, soon won for it a unique position in the citrus field. It has never been commercially successful in Florida.

Early experiments showed that lemon growing was well suited to California conditions when locations and sites were carefully selected and the extension of this industry since 1900 has been very rapid, analogous to the grapefruit expansion in Florida.

The citrus industry in California is very highly organized, over 70 per cent of the crop being handled through a cooperative organization which has proved a leading factor in developing improved methods of production, packing and marketing. The industry has never experienced any such setbacks as the Florida freeze of 1894–95, though some damage to fruit and young trees was experienced in the winters of 1912–13 and more recently in 1921–22.

Like the freeze in Florida in 1917, the effect was only temporary and the valuable lessons learned as a result of these visitations insure better equipment to meet such conditions in the future. The outline map, figure 58, shows the principal areas in the United States in which citrus fruits are grown.

FIG. 57.—One of the two Washington Navel orange trees sent to California in 1873 by the United States Department of Agriculture. It has suffered some ills but is now in a fairly healthy condition. The other tree of this pair, made doubly famous by having been transplanted by President Roosevelt, died several years ago. The tablet shown in the foreground was erected in 1920 in honor of Mrs. Eliza Tibbets, who received the trees and planted them at Riverside

Varieties and stocks for Florida.—Out of the hundred or more varieties tested in Florida at different times, only five have won definite approval. These are, in order of ripening: Parson Brown, Homosassa, Pineapple, Valencia, and Lue (*Lue Gim Gong*). This list was approved by representative growers present at the citrus

seminar at Gainesville, Fla., in 1916, in a move toward standardization, thus giving a succession of fruit maturing from October to June. The first three varieties originated in Florida as seedlings, while the last is now generally regarded as a strain of the Valencia and is marketed as such. The Valencia was introduced into Florida in 1870 from the nursery of S. B. Parsons & Sons, Flushing, Long Island (originally obtained from Thomas Rivers & Son, nurserymen, Sawbridgeworth, England), and was long known as Hart's Late or Tardiff. It reached California, also from the Thomas Rivers & Son's Nursery, in 1876 and was at first called River's Late, subsequently becoming known as the Valencia Late. The identity of these two oranges is now conceded, though a number of strains differing in character have been developed. In addition to these varieties, there is a considerable production of the "blood" oranges (Ruby, Maltese, and St. Michael) and other round varieties as Jaffa, Majorca, and Mediterranean Sweet, as well as seedling oranges.

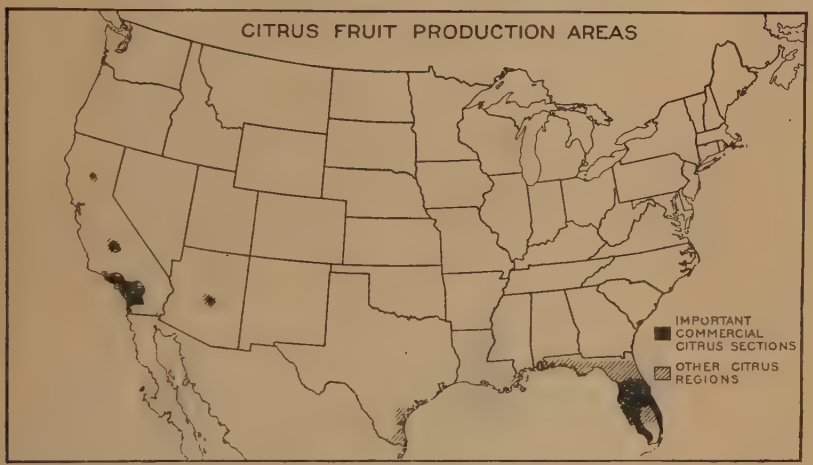


FIG. 58.—Outline map of the United States showing the principal areas in which citrus fruits are grown, heavily shaded areas indicating sections from which citrus fruits are shipped in quantity, lighter shading indicating where citrus fruits are of minor importance

There has been quite a heavy planting of tangerines in recent years, the Fourteenth Census showing 38,000 bearing and 30,000 nonbearing trees in 1919. By December 31, 1923, the total number of tangerine trees had reached 609,107, of which over two-thirds were of nonbearing age. The Dancy tangerine is the principal variety grown.

The leading grapefruit varieties are the Duncan, Walters, Hall (*Silver Cluster*), and Marsh (*Marsh Seedless*), all of seedling origin. The number of bearing and nonbearing orange and grapefruit trees in Florida in 1920 is shown graphically in Figure 59. In propagating citrus trees the sour orange is the principal stock used for planting on hammock and flat wood land. The rough lemon is preferred for the light, sandy soils of south-central Florida and for the rock reef soils in the southern part of Dade County. In recent plantings the rough-lemon stock has largely predominated, the greatest expansion having taken place in the sections to which this stock is preeminently adapted. On the heavier soils where the sour stock can be

grown successfully it is preferred owing to its greater hardiness, resistance to disease, and the character of fruit produced.

The trifoliate orange is the stock principally used for budding to varieties of the Satsuma type and other orange varieties in north Florida and the Gulf coast section west of Florida. Its deciduous character and winter dormancy imparts hardiness to the variety budded on it.

Varieties and stocks for the Gulf Coast States.—The growing of oranges has long been of considerable importance in protected localities along the Gulf coast west of Florida, particularly in the Delta section of Louisiana. Seedlings formed most of the early plantings, the fruit being known as "Creole" oranges. More recently there has been some planting of the Washington Navel in this section, together with standard Florida varieties.

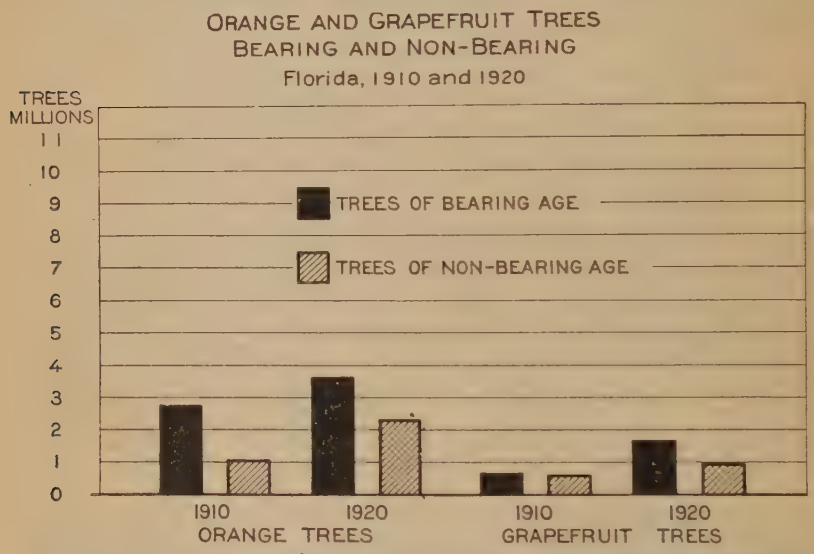


FIG. 59.—The trend towards new plantings of oranges and grapefruit in Florida is brought out in the graph showing bearing and nonbearing trees at the census periods 1910 and 1920. The growth rate has been fairly uniform, though the percentage of increase in producing grapefruit area largely exceeds that for oranges in the last decade

The Satsuma orange varieties (kid-glove type) have proved particularly well adapted to the Gulf coast section and recent plantings have been largely of this type. The largest development has been in the region adjacent to Mobile Bay in Alabama, where the industry is well organized and has become of major importance, 15,000 acres (one-third in bearing) being under cultivation in Mobile and Baldwin Counties in 1922. The Satsuma varieties budded on trifoliate-orange stock are the hardiest of commercial oranges but nevertheless suffer from occasional freezes in the Gulf States. A freeze in February, 1924, resulted in a crop failure during that year and the output in 1925 (about 300 carloads) was only about one-half that of the 1923 season. The fruit ripens early (October and November) and can thus be shipped before danger of injury by frost, and during a period when the supply of oranges from other sections is comparatively light.

Recently a noteworthy citrus development has taken place in the lower Rio Grande Valley in Texas. This is an irrigated district, having conditions resembling more nearly the interior valleys of the Southwest than the Gulf coast region to the eastward. Grapefruit constitutes about 80 per cent of the acreage planted. Standard varieties of oranges and grapefruit are being planted extensively. The trees used there are grown on sour-orange stock. Shipments thus far have been absorbed by the near-by Texas markets.

Varieties for California and the Southwest.—The citrus industry of California is founded on two main varieties of oranges, the Washington Navel and the Valencia; two varieties of lemon, the Eureka and the Lisbon; and one variety of grapefruit, the Marsh. The origin of the two orange varieties has already been discussed. The Eureka lemon originated at Los Angeles, Calif., in 1858 as a seedling of a Sicilian lemon. The Lisbon was introduced into California from Australia in 1874. The Marsh grapefruit, which is typically a seedless variety, was introduced in 1890 from Florida, where it originated at Lakeland as a seedling tree.

Other orange varieties such as the Ruby and Mediterranean Sweet, as well as seedling oranges, are produced in the older citrus sections but the volume is now relatively small. The Washington Navel orange matures from November to May; the Valencia from May to November, thus covering the entire year. The Valencia has been gaining in favor during the last decade and since 1919 has equaled or exceeded the Washington Navel in point of production. It promises to exceed the latter considerably in the near future. The Marsh grapefruit matures in the main citrus sections of California from May to September, while in the interior valleys (Imperial and Coachella) and in the Salt River Valley in Arizona, it ripens from November to May. Lemons are harvested throughout the year, the Eureka variety bearing its heaviest crop in summer months, whereas the Lisbon bears heaviest in the winter and spring months. The number of bearing and nonbearing orange and lemon trees in California in 1920 is shown graphically in Figure 60.

The topography of California materially influences local climatic conditions throughout a region of great extent from north to south in portions of which citrus fruits can be grown commercially. The most northern section, that of Butte County, is about in the latitude of Baltimore, Md., while the southern district, San Diego County, lies 550 miles to the south and approximately in the latitude of Savannah, Ga. The fruit grown in the northern districts matures somewhat earlier than the same varieties do in the southern part of the State (figs. 61 and 62).

In California and the Southwest generally the sour orange has proved to be the best root stock found thus far for all commercial citrus varieties.

In Arizona there are two districts where citrus fruits are being grown—in the Salt River Valley north and east of Phoenix and on the Mesa south of Yuma. The varieties grown are those most favored in California, though the time of maturity is advanced very materially by the climatic conditions.

Frost protection.—Light frosts occur with more or less frequency in nearly all citrus-growing sections with occasional temperatures

sufficiently low to cause heavy loss of both fruit and trees. Frost-protection methods are now widely practiced during the winter months, particularly in California, the Weather Bureau cooperating by conducting temperature surveys to determine the susceptibility of different localties to frost, and by providing special warnings of impending harmful temperatures.

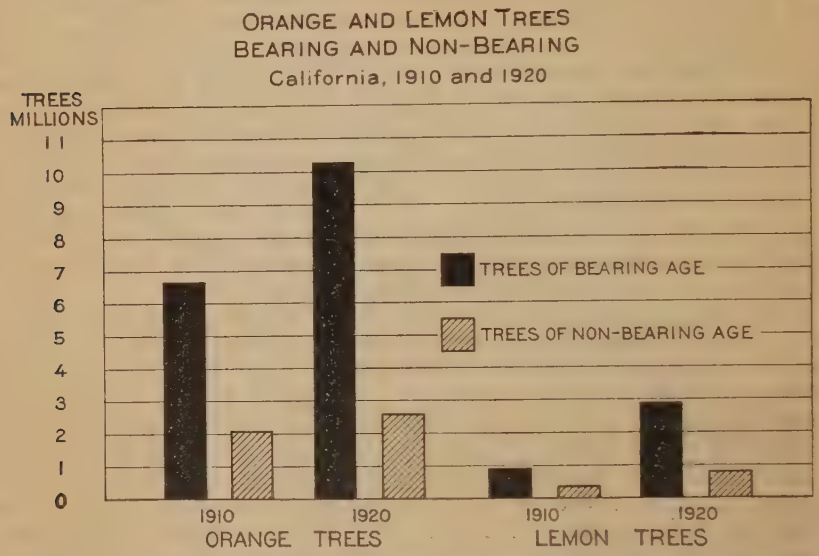


FIG. 60.—The trend toward new plantings of oranges and lemons in California is brought out in the graph showing number of bearing and nonbearing trees at the census periods 1910 and 1920. Lemon plantings increased at a more rapid rate than oranges during the last decade

The use of oil pots is the most common form of frost protection in California and Texas. In Florida, wood fires, coke, and oil heaters are used in about equal proportion, but the majority of the groves are not protected beyond the banking of young trees with soil to protect the bud union.

Owing to the late blooming of most varieties of oranges, the crop is comparatively free from frost danger during the blooming period and it is not until the fruit has practically reached maturity that the greatest losses occur. This makes the susceptibility to harm somewhat different from that with deciduous fruit, where the losses are mainly during the blooming period. The rind of an orange is a poor conductor of heat, affording considerable protection to the interior and, consequently, when the temperature of the air is falling rapidly, that of the interior of the fruit lags to an extent that there may be as much as 7° difference between it and the ouside air. This lag in temperature is often an hour to an hour and a half, and because of it the duration of low temperature frequently is of as much importance as the actual minimum reached.

Radiation is an important factor in frost injury to fruit, the outside fruit exposed to the sky being the first to freeze. The critical air temperatures for nearly ripe oranges is usually given at 26 to 27° F., but lower temperatures than this may sometimes be ex-

perienced without permanent injury, especially if the fruit is subjected to the low temperature for only a short time. The critical temperature of green oranges is somewhat higher than that of those fully matured, being 28 to 29°. Results of freezes in California have shown that there is not much difference in the hardiness of the leading varieties of oranges grown there.

When oranges begin to freeze the section of the skin exposed to the sky takes on a transparent appearance, generally known as the "watermark," probably caused by the water in the rind freezing and leaving the oil separated. On the following day these oranges can be picked out easily and are called "shiners." By timing the orchard heating with the first appearance of the "watermark," it is possible to save the fruit and yet prevent waste of fuel oil. Some experience is necessary before the fruit grower is able to use these

FIG. 61.—A general view in the citrus district of southern California near Riverside

methods of timing the firing; but the importance of saving oil is well worth giving the matter close attention.

Lemon trees are much less hardy than oranges. After the memorable freeze in southern California in 1913, it was common to find lemon trees entirely defoliated and among them orange trees which had lost few or none of their leaves. There is also a marked difference in the hardiness of the two principal varieties of lemons grown in California, as shown by the 1913 freeze, the Lisbon proving decidedly more resistant to cold than the Eureka. Lemon blossoms are usually damaged with a temperature of 30° F., and the small green fruit when the temperature remains at 29° for some time, but ripe lemons will not usually suffer materially unless the temperature falls below 27°.

Bud selection.—Extensive studies carried on mainly in California by specialists of the United States Department of Agriculture have shown that bud variation occurs in citrus fruits frequently enough to make it a factor seriously affecting the industry. Bud variation may occur in the line either of improvement or deterioration compared with the varietal type; it may be in fruit or tree characteristics or both. Many trees of the principal commercial varieties of citrus in California have been found on which there are limbs that produce fruit which is off-type in some particular. Not infrequently such fruit is worthless because of some undesirable characteristic. Again, superior strains of varieties have originated in this way. A variation that carries great economic significance is a tree characteristic in which a very strong vegetative growth of tree is correlated with nonproductiveness.

FIG. 62.—A typical orange grove in southern California during the picking season

It has been shown that these variations in fruit and tree represent inherent characters, though relative productiveness may of course be due to environment or other factors not inherent in the tree. Where inherent, these variations whether of fruit or tree are perpetuated in progeny trees propagated from them. The peculiar economic significance of the variation in the direction of an especially strong vegetative type of tree which is unprofitable is in the fact that such trees have often been used to furnish buds for propagation. This form of degenerative selection results from the fact that the tree of vegetative type has an abundance of twigs of a size suitable for budwood as compared with the scanty production of such twigs on trees heavily loaded with fruit. As a result, a very considerable proportion of the trees in some citrus groves were of the vigorous-growing but unproductive type.

Since the relation of bud variation to productiveness has been understood, thousands of these unproductive trees in the groves in California have been top-worked to the superior productvie strains that have been located. Moreover, nurserymen have come to the point of using buds in propagating citrus trees only from parent trees with known and satisfactory performance records. Although bud variation is better known in its relation to citrus fruit produc-

FIG. 63.—An especially productive strain of the Washington Navel orange

tion than it is with other fruits, investigations have been carried far enough to indicate that it may have bearing in many directions which has not generally been recognized (fig. 63).

Cost of production.—In a detailed report issued by the Citrus Protective League of California, the late G. Harold Powell showed that in 1910 in that State the cost of production for oranges amounted to $0.863 per box, while for lemons the cost amounted to $1 per box. These figures did not include depreciation on build-

ings, equipment, etc. In 1920, costs (including depreciation) had risen to $1.60 per box for oranges and $1.67 per box for lemons, with a total cultural cost per acre of $241.56 for oranges and $295.52 for lemons. An investigation of the income and profits on 100 citrus grove properties ("fruit farms") in Polk County, Fla., was made during the five-year period, 1917–1921, and a preliminary report issued by the Bureau of Agricultural Economics of the United States Department of Agriculture. The average price received by the grower on the tree for grapefruit per box was $1.67, for oranges $2.62, and for tangerines $3.63. The average cost of production on these properties during that period was approximately $0.92 per box for grapefruit and $1.02 for oranges, with a total expense per acre (for oranges and grapefruit) of $151.80, including depreciation and some expenditure on nonbearing acreage (25 per cent of total acreage) charged as production expense.

Under conditions obtaining in Polk County, Fla., during the period 1917–1921, 46 per cent, the largest single item of expense, was for fertilizing, labor being next in rank, 28 per cent. Under California conditions in 1920, labor constituted 34 per cent, fertilizer 29 per cent, and water 7 per cent of the cost of orange production; in the production of lemons, labor constituted 39 per cent, fertilizer 17 per cent, and water 8.5 per cent of the total cost of production.

Pineapple

Though not native to the United States, the pineapple is undoubtedly indigenous to tropical America. Apparently the only question arising as to its origin in the New World is due to the early date following the discovery of America when it was found in some of the warm regions of the Old World. Although the pineapple is widely grown in the American Tropics, Porto Rico, Cuba, Hawaii, and elsewhere, the only commercial production in the continental United States is in Florida.

Pineapple growing in Florida at one time ranked second only to citrus fruits with shipments of about 1,000,000 crates annually, but a combination of cold, disease, and other factors has reduced the output to a small fraction of the former crop. Meanwhile an enormous pineapple industry has developed in Hawaii, the fruit, however, reaching the United States only as a canned product. The annual pack of 5,000,000 to 6,000,000 cases is about equivalent in bulk to the entire grapefruit crop of Florida and must be considered as an important item in our domestic fruit supply. The canned product is practically all of one variety, the Smooth Cayenne, while the Florida, Porto Rican, and Cuban pineapples are chiefly of the Red Spanish variety.

A revival of pineapple growing in Florida on a somewhat altered basis is being attempted and some progress has been made. The production in Florida in 1924 was about 90,000 crates, with about 1,000 acres set out and beginning to bear crops.

Olive

The cultivation of the olive seems to antedate historical records but as nearly as can be determined it had its origin in the Mediterranean region. It is found wild in and is considered indigenous to

Syria, Greece and northern Africa. Few fruits have a larger place in sacred literature than the olive. It was an olive branch, according to Biblical story, brought to the ark by a returning dove which first told Noah of the receding waters of the flood. Olives are grown in southern Italy, southern France, Spain, Portugal, northern Africa, western Asia, and Australia, as well as in America.

The claim is made that the olive was introduced into South Carolina in 1755, and subsequently into other parts of the South. In 1817 a colony attempted to develop an olive industry in Alabama, a grant of land having been made conditionally on the success of the enterprise. It was not prosecuted, however, and nothing came of it. A planting in what is now California is said to have been made in 1700, although the olive trees planted by the Franciscan Fathers at the missions which they established following their

FIG. 64.—An olive orchard in California

entry in 1769 into that part of the New World is commonly considered to be the beginning of olive culture there. Some of these early mission olive orchards still remain though in a much neglected and depleted condition (fig. 3), page 114.

The development of the olive industry in this country has been mainly in California and to a very limited extent in Arizona. Efforts to grow olives in the Gulf States and other Southern States has proved unsuccessful, for though the trees may grow well and sometimes abundant crops of fruit are borne, production is so irregular and uncertain as to render olive culture in the South impracticable.

The requirements of olives seem to be the reverse in certain particulars to those of pineapples. As implied in the discussion of pineapples they do not give satisfactory results under arid conditions, whereas olives do not respond well to humid conditions. Though

olive trees may endure drought to a remarkable extent, they require adequate moisture at the roots, if not in the air, as do other kinds of fruit trees in order to thrive and produce regularly and abundantly.

In California in 1919 according to the best available information there were about 24,000 acres devoted to olives in bearing and approximately 13,000 acres not in bearing. The industry is located principally in the Sacramento and San Joaquin Valleys and in the southern part of the State. In Arizona the center of production is in Maricopa County near Phoenix where according to the last census there were about 14,000 trees of which a little more than one-half were in bearing. The California olives are used largely for packing as "ripe olive" pickles and for canning. The inferior fruit is pressed for oil (fig. 64).

Avocado

The avocado, sometimes called "alligator pear," found its way from the West Indies and tropical America to Florida and south-

FIG. 65.—An avocado orchard in southern California. The best sites for avocados are the choicest of the lemon sites

ern California some time within the last half century, but interest in the fruit as a commercial possibility has largely developed during the last 20 years. In various parts of Mexico and Central America the avocado is widely grown and comprises an important and very common article of diet. Coming as it does from tropical regions, it is naturally highly susceptible to injury from freezing temperatures.

Three types or races of avocados are recognized—the West Indian, the Guatemalan, and the Mexican, the latter having thin skin, while that of the other two is considerably thicker. There are also other more or less well defined differences. The varieties of the West Indian race are the most tender, being able to withstand but a very

few degrees of frost without serious injury. The Guatemalan type is considerably more hardy, approximating the lemon in cold resistance, and the Mexican type is still hardier, about equal to the round orange in this respect.

Avocado orchards of considerable size have been planted in the southern parts of California and Florida, and commercial production for local markets as well as limited shipment began about 15 years ago. In Florida, most of the early plantings were of the West Indian type maturing in summer and fall, though the winter-ripening Guatemalan varieties are now being given attention. Hybrids between the two races are especially promising. Preference is given to the Guatemalan and Mexican varieties in California, because of their superior hardiness. Practically all trees that are planted are budded or grafted, few seedlings now being grown. The industry has not reached a satisfactory stage as regards varieties adapted to the regions which have proven the most satisfactory for the growth of the trees, nor has the question of mixed planting of varieties for satisfactory cross-fertilization of the blossoms, been fully worked out. Avocado culture, although intensely interesting and promising in the two regions where climatic conditions are favorable, is far from the status of the grapefruit in Florida or the lemon in California (fig. 65).

Mango

The place of origin of the mango is uncertain but it is considered probable that it has been cultivated for 4,000 years as it has entered prominently into Hindu mythology and religious observance. The first introduction of the mango into the United States is believed to have been in 1833 when plants were sent from Mexico to Florida. These trees did not persist. About 30 years later seedling trees were introduced. In 1885 an attempt was made to introduce choice grafted trees from India, and other efforts followed in succeeding years, but most of the progress recorded has been made since the beginning of the present century. Because of its susceptibility to frost its culture is limited to the best protected localities in southern Florida where it is a summer crop and must be handled with great care to reach the market in salable condition. Although many varieties, chiefly of East Indian origin, have been tested, the Haden, an American-grown seedling of the Mulgoba (fig. 66), is the leading commercial variety. Budded or grafted trees only are planted. The mango is by many considered the most delicious of tropical fruits, however, the very high esteem in which the fruit is held applies only to the choicer varieties. Many of the seedling fruits possess a very coarse, fibrous texture of flesh and the characteristic "turpentine" flavor is in many cases so pronounced as to be decidedly objectionable. In the highly prized varieties these characteristics are reduced to a minimum and are scarcely to be detected at all.

Much remains to be learned regarding protection from insect pests, fungous diseases, and marketing methods before the mango industry can be considered safe for any large expansion. In the Philippines, Hawaii, and the West Indian possessions, the mango is one of the most highly prized fruits. The susceptibility of the trees and the fruit in Florida to certain fungous diseases, particularly the

"bloom blight," and its restricted distribution because of its liability to injury from frost have retarded its development. Though considerable attention is being given to its culture in the more favorable sections in Florida, it has made but very slight headway in California.

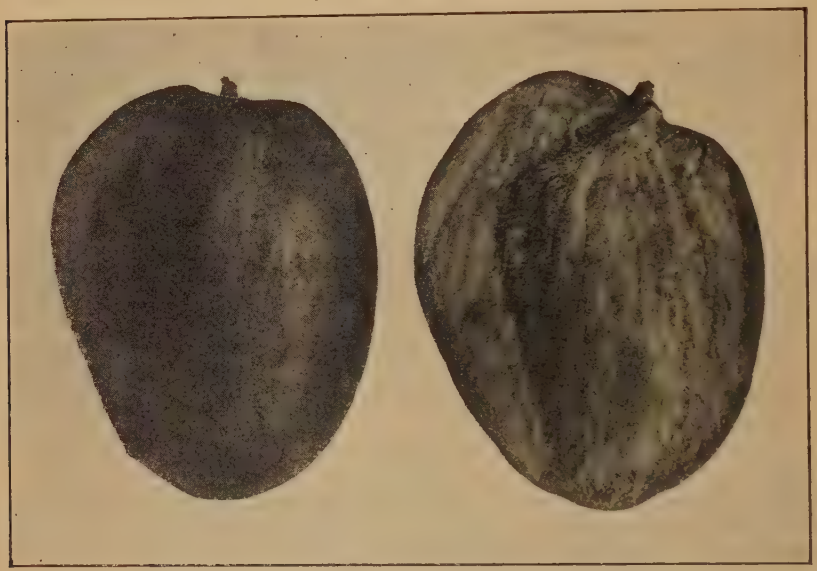


FIG. 66.—A Mulgoba mango. This is one of the choicest dessert varieties

Date

The origin of the date is apparently lost in antiquity. It has been cultivated for so many centuries in Egypt, Arabia, Persia, and neighboring countries and has been, and still is, so large a factor in the lives of the people of those countries that historically and economically it is inseparably associated with them. Attention to date growing in this country may be said to have begun about 1890 when the United States Department of Agriculture made what has been termed "the first modern importation" of date palms from Egypt to California. Since then better methods of shipping the plants have been worked out and importations have been made during the last 25 to 30 years from practically all parts of the world where promising date material was to be had. Although a subject of experiment for over 25 years, date culture has only recently reached a state where commercial production can be said to have begun. The exacting climatic requirements and the necessity for propagation only from offshoots or base suckers of bearing trees have prevented any rapid expansion of the new industry.

The leading date-producing center in this country is the Coachella Valley in southern California where the Deglet Noor from North Africa has proved to be well adapted and has become the leading variety. Other sections, such as the Imperial Valley in California and the Salt River Valley in Arizona, are promising regions but the varieties best adapted are not vet determined. The

Saidy and Hayany at present appear promising. Because of competition with cheaply grown Persian Gulf dates American growers must aim to put out a product that for eating quality, appearance, and cleanliness will command a premium on the markets (fig. 67).

Frost protection.—Although the date palm requires high temperatures with low humidity for fruit production, its resistance to cold is such that artificial frost protection is usually unnecessary after the first winter. Even the young plants, are, as a rule, sufficiently protected by a paper wrapping. In Arizona mature date palms have survived minimum temperatures of 9° to 11° F. with the loss of only the exposed leaves. The structural character of the date palm is such that the growing point, a single bud, is insulated against extremes of heat or cold.

FIG. 67.—Deglet Noor date garden at Mecca, Calif., about 20 years old

Banana

The place of origin of the banana, in common with many other fruits, is uncertain and its course of dissemination is unrecorded. Evidence exists to prove that the banana was grown in Peru and other parts of the New World before Columbus reached the shores of the Western Hemisphere. On the other hand, it is known to have occurred in some of the warmer parts of the Old World at a date so early as to render difficult of support the claims of a New World origin. The possibility of a double origin in both Eastern and Western Hemispheres has been suggested only to be set aside as being too highly improbable to merit serious consideration.

Though banana growing can hardly be said to be an industry in the United States proper, this fruit so far exceeds all other imported fruits in bulk and value, about $20,000,000 annually, that it must be considered in any summary of American fruits. It is an important food plant in Panama, Porto Rico, the Virgin Islands,

the Philippines, and other tropical territories and is grown for local market with considerable success in Florida. The varieties grown in Florida such as Cavendish and Lady Finger are not of the same character as the imported fruit but are smaller and less attractive in appearance. They are, however, of good eating quality, and hardier than the sorts grown in the Tropics. The bulk of the bananas imported into this country—45,000,000 to 55,000,000 bunches annually—come chiefly from the Central American countries with an almost equal quantity from Jamaica, Panama, Mexico, Cuba, and Colombia in the order named in relative importance. Honduras and Guatemala are the chief contributors from Central America.

Guava

The guava occurs wild in Mexico, Central America, Venezuela, Peru, Brazil, and elsewhere in South America. Authorities disagree as to its origin in tropical America but as it grows readily from seed and easily becomes naturalized, it is difficult to determine its exact region of origin. It has been carried to and is now grown in many tropical regions of the world. It has but few restrictions so far as its soil requirements are concerned. The tree can withstand very little frost without injury though it quickly recovers from such injury even when killed to the ground. In habit of growth the guava is a small tree reaching 25 feet or more in height. In the United States it is grown in Florida, and to a lesser extent, in California. Though widely distributed in Florida, a few thousand crates of fruit represent the annual production aside from the supply grown specifically for home use. The fruit is used in various ways in the fresh state and for culinary purposes, but its value is chiefly for jelly making. The "strawberry" or Cattley guava is related to the common form but is hardier and is a favorite in many regions as an ornamental shrub or small tree. The fruit is less desirable than that of the more tropical form but is fairly satisfactory for jelly making.

Feijoa

The feijoa occurs wild in its native home in southern Brazil, Uruguay, Paraguay, and sections of Argentina. It does not thrive in humid regions; hence it is a comparative stranger in this country, its culture being restricted mainly to subtropical sections of California. The fruit is eaten in the fresh state and utilized in various ways. There is no commercial production at this time beyond a limited production for local markets.

Papaya

The papaya (papaw, melon papaw, etc.) is considered native to the West Indies or other American Tropics, some writers including certain parts of Brazil in its native habitat. It is essentially a tropical plant though it withstands slight frost without serious injury. Because of the name "papaw" by which it is commonly known this plant and its fruit are frequently confused with the native papaw which is widely distributed throughout much of the country east of Kansas and Nebraska.

The papaya is an immense herbaceous plant rather than a tree in the usual sense. However, it may grow to a height of 25 feet. The fruit is spherical to cylindrical or pear shaped in form and may attain a length of 18 or 20 inches and a weight of 20 pounds. The flesh is somewhat suggestive of the muskmelon in texture and the seed cavity and arrangement of the seeds are also somewhat comparable to the muskmelon. Though native of the American Tropics, the papaya has become widely distributed in the tropical countries of the world, in many of which it is apparently much more highly valued than in America. It succeeds better in southern Florida than in other parts of the United States.

The fruits of the papaya are eaten much as melons are eaten. The milky juice of both fruit and plant is the source of a digestive enzyme known as papain. Meat is sometimes wrapped in the leaves of the plant when being cooked in order to make it tender. Various other ways of utilizing the papaya in making meats tender are practiced. The fruit is much prized by many who are familiar with it but in many cases a taste for it has to be cultivated.

There are numerous other subtropical fruits, but no special comment regarding them is included in this connection because of their small economic value at the present time.

Group Relationships of Small Fruits From a Cultural and Economic Standpoint

Two hundred and forty-nine thousand acres were devoted to small fruits in 1919, according to the census figures compiled the following year. The total yield for this acreage was reported as being 324,998,000 quarts valued at $61,732,000. Strawberries occupied 119,395 acres with a production of 176,931,000 quarts which were valued at $36,004,000. Raspberries were grown on 54,256 acres which yielded a crop of 61,333,500 quarts with a value of $13,386,000. Blackberry production occupied 46,165 acres yielding 39,945,000 quarts with a value of $7,117,900. The cranberry acreage of the United States for the same year was 16,804 which yielded 35,260,000 quarts at $3,197,900. The commercial importance of small fruits in the fruit production of the nation is further indicated by the fact that there were, in 1924, 18,973 carloads of strawberries alone produced and shipped in the United States, with a total value of $37,320,000.

The small fruits form a very distinct group. They are, for the most part, of native rather than of foreign origin, a distinction possessed by few other fruits extensively cultivated in the United States. Some of the small fruits, particularly the blueberry and the cranberry, are exceedingly exacting in their environmental requirements. The cranberry requires low-lying, moist soils, with a high-water table for its cultivation. Blueberries require a high water table, though not quite as high as the cranberry. Both the cranberry and the blueberry require a peculiar acid condition of the soil found in regions to which these species are native, and because of these peculiarities, their commercial culture is confined to relatively restricted areas. The blueberry is still chiefly a product of wild or semiwild conditions. Only recently have methods of propagating and cultivating the blueberry been sufficiently understood to make it possible to handle the crop as a horticultural industry.

In direct contrast with blueberries and cranberries, the strawberry is free from limitations and is one of the most widely disseminated of the cultivated fruits. The strawberry requires only a relatively short season in which to mature its fruit. On this account the strawberry industry has been established in many sections of the country to take advantage of that part of each season which presents conditions suitable for its development. As a result, the strawberry industry is widely disseminated from Florida to Maine on the Atlantic coast, from the Gulf of Mexico to Canada in the central portion, and from California to Washington on the Pacific coast, each region making its contribution to the markets as the season progresses, beginning in late December or January in parts of Florida and extending to late October and November through the agency of the so-called everbearing varieties, so that strawberry production has become practically a year-round industry in the United States.

This field record of strawberries is approached only by lettuce in respect to seasonal and geographic distribution. Other crops which possess a long season market record do so through storage facilities in addition to geographic and climatic influences, as is the case with strawberries.

According to their relationships and cultural requirements, the principal small fruits may be grouped as follows: (1) The strawberry; (2) the raspberry, blackberry, and dewberry; (3) the currant and gooseberry; (4) the blueberry and cranberry; and (5) other promising but little-cultivated plants not closely related botanically, but which are recognized in the group of small fruits, such as Juneberry, goumi, buffalo berry, flowering quince, barberry, American bush cranberry, and elderberry.

The monetary value of the small fruits of the country is significant in comparison with the other horticultural industries, as the aggregate value of small fruits is exceeded only by apples, grapes, and peaches. As the number of suburban homes and the need of food plants adapted to small areas increase, the small fruits are certain to become relatively of even greater importance.

The chief use of strawberries, raspberries, and blackberries is in the form of fresh fruit for dessert purposes. In addition, about 80 per cent of the entire commercial pack of fruit preserves consists of strawberries and raspberries, in the proportion of 56 per cent strawberries and 24 per cent raspberries. Three other small fruits, namely: Cranberries, currants, and gooseberries are used largely in the manufacture of preserves, jellies, and marmalades. Besides these, strawberries, raspberries, and blackberries, to the value of several millions of dollars, have been used in the ice-cream trade as flavoring material or as preserved, crushed fruits served as sundaes.

Small fruits, with the exception of blueberries and cranberries, are important home-garden crops. They are also cultivated by market gardeners, as well as by specialists who make it their chief business to grow one or more of the small fruits each year. In fact, there are particular regions where large numbers of farmers depend entirely on one or more of these fruits for their income. The cranberry is grown almost entirely by specialists who grow no other crop. The blueberry section of eastern Maine is unique among horticultural regions in that the industry is based on a semicultural system employing native wild plants.

Strawberry

The strawberries grown in this country are descended from hybrids of the wild meadow strawberry of the eastern United States and of a variety cultivated in Chile probably before the discovery of America, with, perhaps, a slight admixture of a European species. Through continued selection, varieties better adapted to conditions have been originated, with the result that those to-day approach more closely to the wild meadow species of the eastern United States than to the Chilean species.

Until about 1860, the acreage of strawberries was comparatively small and limited to the vicinity of cities. About that time the Wilson variety was introduced, which was firmer than any variety previously grown, and could be shipped into the city markets from a distance. Shortly after the refrigerator-car service was instituted

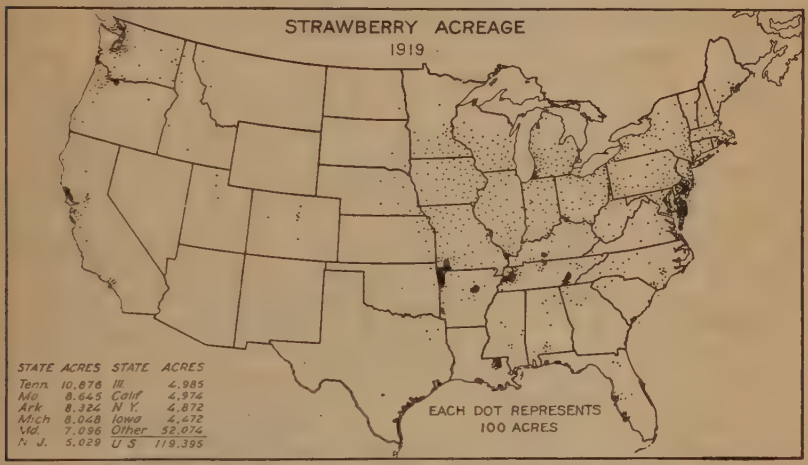


FIG. 68.—The distribution of the strawberry industry is here shown. Though there is much local production for market purposes, the important centers from which strawberries are shipped to distant markets are shown by the areas of heavy concentration. These areas are more clearly defined in the map shown as Figure 69

other firmer sorts were originated and strawberries began to be grown farther south for shipment to northern markets, until at the present time strawberries are grown in every State in the Union (fig. 68). Strawberries are now shipped from Florida to northern markets during the period from December to April. Then in succession shipping points northward along the Atlantic coast supply these markets until strawberries grown in the vicinity of each northern city ripen. Finally, berries are shipped southward into the larger cities from the North. A succession similar to that along the Atlantic coast occurs in the Central States and again on the Pacific coast (fig. 69). Recently eastern markets have received small quantities of everbearing varieties of strawberries, so that the fruit is now available every month in the year in these markets.

Varieties of strawberries vary greatly and are adapted to widely different conditions. It is this difference in adaptation which enables the strawberry to be grown so widely. Thus, the Missionary thrives in central Florida, the Klondike in northern Florida, the

Dunlap in Iowa and in Minnesota where few others are hardy, the Jucunda on high elevations in Colorado, the Marshall in central California, and new sorts originated at the Alaska Experiment Station in the coast and interior regions of Alaska. In fact, few other crops are grown as widely.

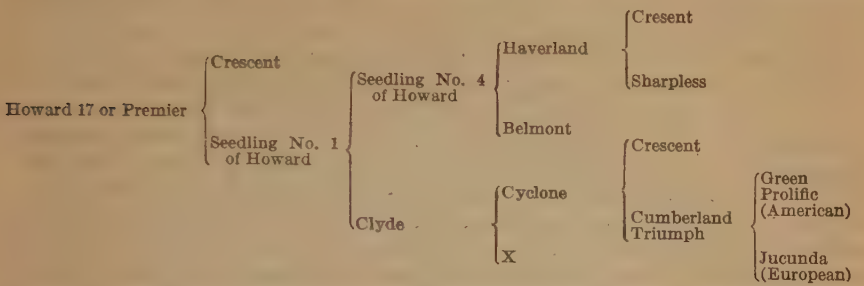
A large percentage of the commercial strawberry crop consists of varieties which have arisen as the result of definite breeding for the production of better varieties. One of the most striking examples is that of the recent origination of new varieties for Alaskan conditions. Varieties from the States were not successful. Selections were made of the wild beach strawberry and of the wild inland form. These were crossed with varieties from the States and from the resulting seedlings some have been selected which are adapted to the humid coastal climate and others which are adapted to the severe inland climate.

FIG. 69.—The location of each important commercial strawberry-growing district is here shown; also the periods during which the crop is shipped from each one

Two other notable new sorts have recently been introduced. A. E. Etter, located in northern California, has crossed and recrossed many varieties and selections of wild strawberries. Among the new varieties produced is one called the Ettersburg 121, which has become the leading canning variety of Oregon. In this case the cross, as reported by Mr. Etter, was a tiny white-fruited everbearing selection of the wild strawberry growing along the coast of California with the wild Cape Mendocino Beach strawberry. The new variety is of high flavor, very firm, and, under some conditions, remarkably productive.

In 1904, the firm of A. B. Howard & Son in Massachusetts crossed the Crescent strawberry with a seedling resulting from previous breeding work. The seed was planted in 1905 and in 1906 some 800 seedlings fruited. From these was selected the variety now known as Howard 17 (in some regions known as Premier) which

has proved to be one of the best home-garden, local-market, and general commercial sorts for the northern United States ever produced. The following chart shows the ancestry of this variety and how it was developed from a long line of earlier fine varieties.



The entire development of the modern type of strawberry has taken place since about 1712, when a few plants of a strawberry cultivated in Chile by the Indians survived a six-months' voyage to Europe where, during the succeeding century, they were hybridized with the wild strawberry of the eastern United States which had also been taken across. These hybrids were brought back to America and during the last century have, through the patience, vision, and skill of many breeders, been developed into the modern strawberry.

The strawberry is extensively grown in many sections in conjunction with other berries. It is ready to harvest before the other small fruits and its labor requirements fit especially well into the management of a fruit farm. After the crop is harvested pickers can be employed in gathering raspberries, currants, gooseberries, dewberries, and blackberries. Southern New Jersey, the Hudson River Valley of New York, southwestern Michigan, and the Puyallup Valley of Washington are notable examples of regions where farm operations are based on such a succession of small fruits.

The wide distribution and popularity of the strawberry is accounted for from the fact that varieties have been developed which are adapted to widely different soils and climatic conditions, and because the labor requirements of the crop fit in well with other farm and trucking operations. It is frequently grown where other small fruits are not grown or are only crops of minor importance. In localities where the strawberry is the only or the chief cash crop, the tendency is to add other small fruits as rapidly as adapted varieties can be found.

Strawberries are grown commercially both as a farm and a truck crop. When raised as a farm crop the acreage per farm is large, frequently 50 to 100 or more acres being grown in rotation with other crops. Cultural operations under such conditions are not very intensive and the income per acre is comparable with ordianry field crops such as corn, cotton, and potatoes. The strawberry pays so much better under intensive cultivation that it is frequently grown in small acreages and as a result, a higher-grade product is obtained.

Cultural operations suited to the conditions in the various producing regions have been developed. In the northern United States the plants are usually set in early spring, hoed and cultivated

throughout the summer to control weeds, and mulched with straw or wild hay, where obtainable, after freezing weather occurs. The following spring, no cultivation is given, as a rule, until after the harvesting season is over. Depending on the rotation, weed conditions, or insect injury, the field is plowed as soon as the crop is picked or it is renovated and kept for one, two, or more crops. Renovation consists in mowing and burning the foliage, narrowing and thinning the rows, and fertilizing according to conditions.

The water requirements of the strawberry are large, especially at the season of ripening, and as a result, it has been found advantageous to provide irrigation for the crop even in humid regions. During seasons of abundant rainfall the fields equipped with irrigation will yield as much as the adjacent nonirrigated areas; but in seasons of sparse rainfall, other growing conditions, such as sunlight and temperature, are likely to be at the optimum and fields provided with irrigation facilities during such seasons may yield two or three times that of those not having water added. The dessert quality of the fruit from such irrigated fields is often superior and the duration of the harvests can be materially prolonged. Irrigation is usually practiced in localities adjacent to large centers of population and varieties which are adapted to such conditions are selected.

In the South where the ground freezes but little if at all, cultural operations peculiar to the soil and climate conditions are employed. Where growth continues throughout the winter the plants are set in the late summer or early fall months and the crop obtained from the same plants three to six months later. In central Florida the plants are set from September to November, the climate being warm enough for vigorous growth throughout the winter. Runners do not form, but fruit buds continue to form during the winter months and strawberries are shipped to northern markets from December to March or April. The Missionary, almost the only variety grown in central and southern Florida, develops good stamens and pollen during the winter months and can pollinate its own pistils. Many other sorts do not develop pollen during the short days of winter, and for this reason are not adapted to central Florida. In northern Florida the winter temperatures are lower and the strawberry can make only leaf, root, and bud growth until the warmer weather of February. In southern Louisiana and in parts of Texas similar conditions occur. The winters are somewhat colder and longer, and the crop ripens later. Most of these sections are low lying, and the water table is near the surface. To prevent injury from water the plants are commonly set on ridges slightly above the ground level. The roots are near the surface, and all hoeing or cultivation is very superficial. Large quantities of fertilizers are applied at the time the plants are set, which is just before fruit-bud formation. This course has been so successful as to become a universal practice. In central Florida fertilizers are applied at the time of setting and again at intervals during the period of fruit production.

Climatic condtions in California are so different from other sections that many special practices have been developed. Because of low rainfall, irrigation is necessary in most sections. With mild winters the plants may be set during the winter months. Under the conditions of bright sunlight, comparatively cool nights, and a

plentiful water supply, certain varieties, which in the Eastern States, produce only the usual early summer crop, are able to make fruit buds throughout the summer. By planting these special varieties, California markets are supplied with strawberries from March to November, with small quantities from the Imperial Valley during the winter months. Cultural practices in Florida and California are largely dependent upon local climatic conditions.

Strawberries are grown chiefly in matted rows in the eastern United States (fig. 70). In the extreme South and to a considerable extent in the irrigated regions of the West the plants are grown in hills, no runners being allowed to form. In some sections of California and other Western States, a spaced, matted row is grown, the runners being spaced by hand. Both the hill and the spaced matted-row systems are used to a slight extent in the eastern United States.

FIG. 70.—Strawberry culture in Warren County, Ky. The Aroma variety. Narrow rows and heavy mulch of wheat straw which keeps the berries clean are outstanding features of cultural practice for this region

Blackberries, Dewberries, and Raspberries

These three berries, sometimes called the bramble fruits, are closely related and often grown on the same farm. The cultivated varieties of the raspberry are hardier than those of the blackberry and dewberry, yet it does not withstand the climatic conditions of the South, and for this reason, its zone of cultivation is farther north than the others. Figures 71 and 72 show the regions where raspberries, blackberries, and dewberries are grown. It will be noted that the largest acreage of blackberries is somewhat south of the regions where the largest acreage of raspberries occurs.

Cultural requirements of blackberries, dewberries, and raspberries are very much the same, the plants usually being set in early spring and clean cultivation given throughout the growing season. For

the most part, the root system of all three is shallow. The dewberry and some of the semitrailing blackberries have a large and deep-growing tap root, and, for this reason, can be grown on the coarser sandy soils, such as are found in the "sand hill" section of North Carolina where a large dewberry growing section has developed as a result of this characteristic of the dewberry. By planting the strongest grade of nursery stock, a half to a full crop can be obtained the year after the plants are set. This, of course, is

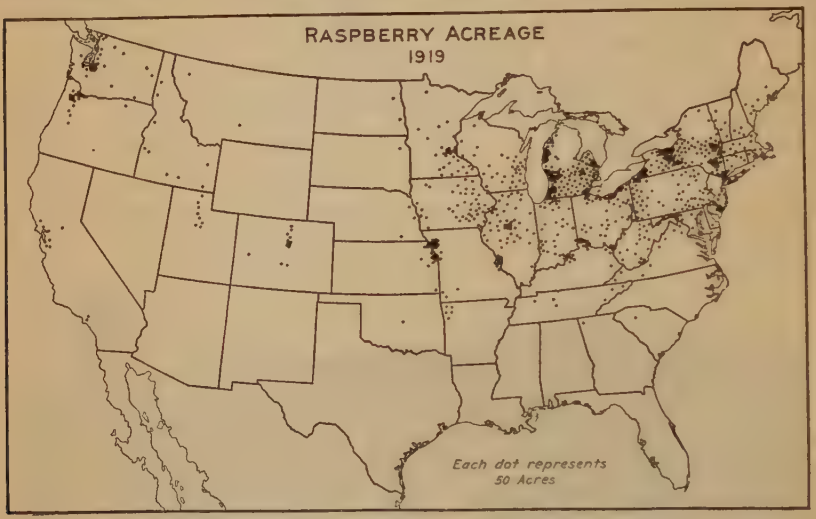


FIG. 71.—The distribution of the raspberry industry is here shown. As will be noted, raspberries are grown mainly north of the Potomac and Ohio Rivers and east of the Great Plains area and in the Pacific Northwest. Although there are several centers of production in certain irrigated areas in the intermountain States and scattered production elsewhere, the raspberry is mainly a northern rather than a southern crop. Compare with Figure 72, which shows the distribution of blackberries and dewberries

much more easily accomplished in the Southern States with a long growing season than in the North; however, a full crop is usually not obtained until about the third season.

The canes of the bramble fruits grow to full size one year and fruit the following year, after which the canes die and are replaced by new ones. In most sections, the dead canes should be removed immediately after the harvest season in order to give the new shoots more room and sunlight. An exception is found in the State of Washington where the old canes are left during the winter to help protect the younger canes from winterkilling. Because the canes of the various brambles differ greatly in their growth, many systems of training have been developed.

Dewberries have trailing canes, and to facilitate tillage and make picking easier, the canes are trained to stakes, one at each plant, or to a wire trellis. In North Carolina and in other sections of the South where certain diseases are serious on the dewberry, all canes, both old and new, are removed as soon as the crop is picked and a new growth developed on which is borne the crop of the following season. Lucretia, the principal variety of dewberry, was introduced about 1880, and since about 1895 has been important commercially.

Blackberries comprise two groups, the native American and the introduced sorts. Two varieties only, the Evergreen (*Oregon Evergreen*) and the Himalaya, belong to the introduced group and are grown chiefly along the Pacific coast, though the Evergreen is also grown in New Jersey. These varieties, which are very vigorous and semitrailing, are usually trained to wire trellises. The Evergreen was introduced into Oregon or Washington from England at an early date and has spread into the wild in the western parts of both States. Because of its superior canning qualities, great quantities of fruit are gathered in the wild for canning factories, and, in addition, since about 1910, hundreds of acres have been planted to it, chiefly for canning purposes. It is not entirely hardy in the East at points north of New Jersey, while south of New Jersey it has been so badly affected by the "double blossom" disease that it has not been found profitable. The Himalaya is of minor importance, being grown chiefly as a home garden fruit in California and in parts of the South.

The native American group of blackberries consists chiefly of varieties discovered in the wild and includes forms that are trailing,

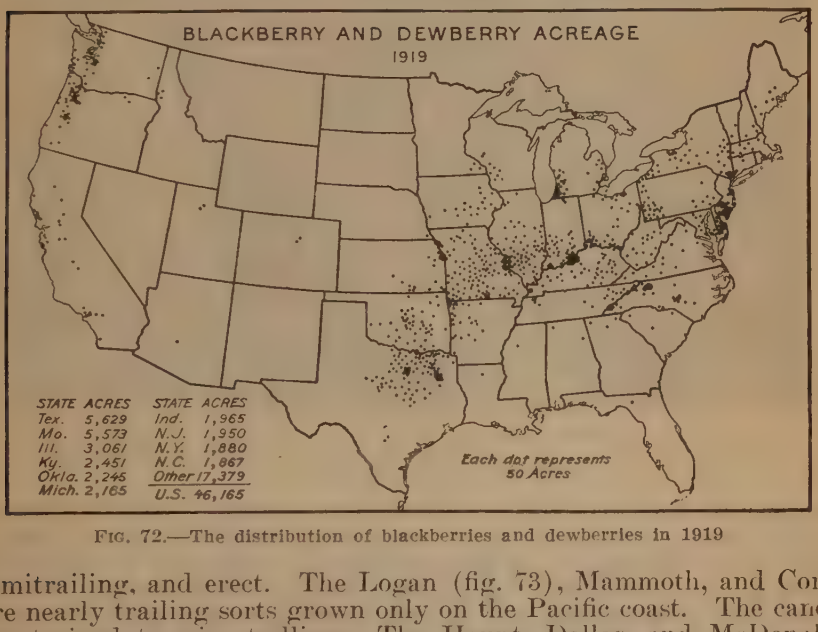


FIG. 72.—The distribution of blackberries and dewberries in 1919

semitrailing, and erect. The Logan (fig. 73), Mammoth, and Cory are nearly trailing sorts grown only on the Pacific coast. The canes are trained to wire trellises. The Haupt, Dallas, and McDonald varieties grown chiefly in Texas and the Marvel (*Florida Marvel*) variety grown chiefly in Florida are semitrailing and are trained in various ways. Training to a wire trellis is probably the most satisfactory method, though often in Texas no trellis is used. Erect-growing varieties such as the Eldorado, Lawton, and Snyder may be trained either in the form of hedge rows or in hills. In hedge rows the young canes are commonly pinched back when they are 2 to 3 feet high and made to form lateral branches. The following spring the laterals are pruned back to from 8 to 18 inches, and may or may not be supported by a wire trellis. Sometimes the new

shoots are not pinched back but are allowed to grow to full height, and a trellis used. When the plants are kept in hills the young canes may be pinched back to a height of 2 to 3 feet or allowed to grow to full height and staked. Thus, practices used in training erect-growing blackberries are not standardized, but are varied to meet particular conditions.

There are three groups of cultivated raspberries—black, red, and purple. Black raspberries have developed from the wild type of eastern North America; the red varieties are improved native red raspberries, introduced European varieties or hybrids between the two; and the purple sorts are hybrids between the black and the red. European red raspberries were introduced first but were not hardy in eastern North America, and have long since been replaced except

FIG. 73.—Logan blackberry field near Salem, Oreg. This variety has a long, trailing cane and is trained to a wire trellis. The fruit is used for table purposes, for fruit-juice making, for canning, and for drying

on the Pacific coast where Antwerp, Superlative, and La France are grown to a slight extent. Native red sorts and natural hybrids between the American and European red sorts began to be cultivated extensively about 1860. Black raspberries were first extensively cultivated at about the same time, while the purple raspberries did not become important until about 1900.

The wild red raspberry is a native of the Northern States and succeeds best in northern regions, while the black raspberry is native and succeeds somewhat farther south than the red varieties.

Black raspberries are usually trained by the hill system, the young canes being pinched back when they are 18 to 30 inches high to force them to branch. The lateral branches are cut back in the spring, leaving three to seven buds to each branch, according to the vigor of the particular cane. Sometimes black raspberries are trained to stakes in which case the cane tips are not pinched back. Purple raspberries are trained and pruned in a manner similar to that for

black varieties. Red raspberries are most commonly trained to a hedge row and left unpruned during the summer (fig. 74). The Ranere (*St. Regis*), one of the fall or everbearing varieties, usually bears a fall crop on the tips of the new canes formed during the summer, and another crop on the same canes the following spring. For this reason, the new canes should never be pruned or pinched back during the summer, but should be pruned during the late winter. In some sections raspberries are grown in hills and tied to a stake set by each plant, whereas in others wire trellises of various types are used and the canes supported by the wires. The height of the canes varies greatly in the different parts of the country, as, for example, varieties that grow 4 feet in height in the East may make a growth of 12 to 15 feet on the Pacific coast.

FIG. 74.—Red raspberries (Cuthbert) in western New York, grown under the hedge-row system

Currants and Gooseberries

These fruits are natives of cool climates and are grown chiefly in the Northern States. They succeed best on heavy soils where large quantities of stable manure are applied. Owing to their root systems being shallow, they are readily injured by droughts or by allowing weeds to grow near them. Clean shallow cultivation should be practiced, at least until after the harvest season. Both currants and gooseberries grow their fruits on wood which grew the previous esason. A vigorous growth of new wood should be produced each year, the canes over 4 years of age being removed to allow younger ones to take their places. Frequently all canes over 3 years of age are removed.

Varieties of currants grown in this country are for the most part those introduced early in the nineteenth century from Europe or seedlings of them. The industry grew slowly in importance until

1900, but since that time it has declined. One-half of the total commercial pack of pure fruit jelly is made from currants. The largest and most important commercial sections for the cultivation of currants are in the Hudson River Valley and near Lake Ontario in New York.

The first gooseberries grown in the United States were European sorts which were introduced early in the eighteenth century. Gooseberries are affected by powdery mildew and for that and other reasons do not succeed where the summers are hot. English varieties are of little importance, but hybrids of these with native American sorts which are better adapted to American conditions began to be grown about 1850, and until about 1900, the growth of the industry was steady. Following 1900, interest in the growing of gooseberries declined, and the acreage decreased.

The cultivation of both currants and gooseberries is being discontinued in parts of the country where the white pine abounds on account of the fact that they are hosts for the white-pine blister rust during one stage of the development of this disease. In view

FIG. 75.—Harvesting cranberries on Cape Cod, Mass. Swamp land is cleared, drained, and converted into valuable agricultural land

of the fact that the white-pine forests are of so much greater economic importance, the growing of currants and gooseberries can well be discontinued wherever the white pine is grown.

Cranberries and Blueberries

These fruits differ widely from practically all others in their soil and cultural requirements. They can not be grown on the usual upland soil but require what are commonly known as acid soils, many of which are toxic to most of the common farm crops and are undeveloped. These soils can be recognized by the character of the vegetation growing on them, for such plants as laurel, azalea, trailing arbutus, wintergreen berry, lady's-slipper, bird's-foot violet, sphagnum moss, and wild blueberries and cranberries, are characteristic of these soil types.

The cranberry was found growing wild in the cooler parts of the United States and in Canada by the early settlers and was being used by the Indians. Its commercial culture, however, did not begin on any considerable scale until 1830 or 1840. The early culture of the cranberry in the Cape Cod, Mass., district, is surrounded with many stories of historic interest. For example, it is recorded in 1832 that "Captain Henry Hall of Barnstable, had then cultivated the cranberry for 20 years," and that "Mr. F. A. Hayden, of Lincoln, Mass., is stated to have gathered from his farm in 1830, 400 bushels of cranberries, which brought him in Boston market $600."

Marked progress has been made during the last few years, both in the production and handling of cranberries. Control measures for cranberry diseases have been worked out and the industry placed on a more dependable basis. About 28,000 acres are devoted to commercial cranberry growing in Massachusetts, New Jersey, and Wisconsin, the three principal producing States, the yield for 1925 being about 530,000 barrels valued at $5,238,000. Figure 75 shows a characteristic Cape Cod cranberry-harvesting scene.

The cranberry succeeds best on acid soils composed largely of peat such as is found in swamps and bogs. To grow cranberries successfully, it should be possible to flood the area at will throughout the winter to protect the plants from injury by low temperatures and also at times during the summer in order to control insects. On the Pacific coast, where the character of the soil on which cranberries are grown is such that it will not hold water, flooding is impractical and protection from cold is sometimes obtained by the use of heaters. Sanding is also considered essential in Massachusetts, and areas on which cranberries are to be grown must have near them an abundant source of clean, coarse sand which can be easily and cheaply obtained. Because of these requirements and the fact that the cranberry is a native of cool climates, the area suited to its culture is limited. It is grown at present in eastern Massachusetts, southern New Jersey, on Long Island, N. Y., in northern Wisconsin, and to a small extent in Washington and Oregon near the mouth of the Columbia River. Except for about 100 acres in Nova Scotia and a field in Holland, cranberry culture is limited to the United States.

Blueberries are native of North America and their numerous wild varieties are widely distributed from Maine to Florida on the Atlantic coast, and also in parts of the Northern and Western States. The more common kinds of wild blueberries were made use of by the early settlers in New England and to-day thousands of acres are maintained under modified cultural methods.

The blueberry is grown extensively in eastern Maine on what are called "blueberry barrens" because of the sterile character of the soil. In that region the areas devoted to blueberries are adapted to few other crops except timber. When the woods are cut off, low-growing blueberry bushes take possession of the ground. The underbrush and tree growth are kept down by mowing with the scythe and by burning over every second or third year, and in this way many thousands of acres are kept with a cover of blueberries at low cost. Most of the crop is harvested by "blueberry rakes" and canned for the pie trade. This type of blueberry is not yet grown under intensive cultivation.

Although many attempts had been made to cultivate the blueberry in a manner similar to the currant and gooseberry, practically all failed because the essential requirements of blueberry culture were not understood until 1910. The greatest interest in this work is in New Jersey, but selections of the best wild forms for propagation are being made at many points from Florida (fig. 76) to Maine and west to Minnesota. Though the total acreage actually planted to these high-bush blueberries is not large their utilization of waste land, their large size, and fine dessert quality make them very promising. In this connection should be mentioned the outstanding work of Miss Elizabeth White, of New Jersey, and of F. V. Coville, of the United States Department of Agriculture. Figures 77 and 78 show characteristic blueberry plantations.

FIG. 76.—An 11-year-old blueberry plantation in western Florida

Areas adapted for the cultivation of blueberries are the acid peat, peat-sand, or sandy soils having just a little higher elevation than the majority of the cranberry fields. The bushes are set about 8 by 8 feet apart and given thorough tillage throughout the growing period. By the third season they should produce a fair crop, but unless they are on the required acid type of soil and the field well drained and given good tillage, success can not be expected.

Other Small Fruits

Many other small fruits both native and introduced are grown to a limited extent. The dwarf juneberry (service berry, also shad bush) is cultivated about Atlanta, Ga., and is gathered from the wild in many parts of the United States. A species of blueberry is highly prized in Texas as a jelly fruit and is being put under cultivation there. Likewise in the northern Great Plains area the buffalo berry is prized as a jelly fruit. The goumi, introduced from Japan,

FIG. 77.—A blueberry field at Whitesbog, N. J. The plants are hybrid seedlings. The seeds were planted in June, 1915, and the plants set in the field in the fall of 1916. The view shows the field as it appeared in August, 1919

FIG. 78.—A 5-year-old hybrid blueberry plant at Whitesbog, N. J.

is found in some gardens. The elderberry is being planted to a limited extent and large quantities are gathered from the wild for canning and for jelly making. A viburnum, the American cranberry bush, is used for jelly in the northern United States and is being domesticated; so also is a bush cherry from Asia, which bears when very young, is hardier than the sour cherries, and is desirable as a jelly fruit.

Grapes

When America was discovered wild grapes were so prominent in the vegetation that the name Vineland, more than once, was applied to it or to particular regions. Viticulture kept pace with the colonization of the New World.

The early adventurers and first settlers in the New World brought with them the Old World conception of grape growing which was for the purpose of making wine. It, therefore, follows as a matter of course, that references to grapes in the literature of the colonial period and in records and other sources of information concerning the times are of wine and wine making. In fact, this viewpoint continued until the middle of the last century, or even later. It was not until the period from about 1850 to 1870 that the growing of the native bunch grape for table use began to receive serious attention.

Widespread Distribution of Native Grapes

Probably no other native fruit was so abundant and so widely distributed along the Atlantic coast at the time the Pilgrims and the Puritans landed as was the grape. The New England shores were then, as now, less congenial to the grape than sections farther south, and the colonists who took possession of Plymouth Rock came from Old World regions where the grape was less common and grown with greater difficulty than was the case with those who founded Jamestown and other southern colonies. These circumstances therefore had a great molding influence in shaping the subsequent history of grape growing in America. The tracing in detail of American grape growing, a most fascinating story in itself, can not be undertaken in this connection. Only a few epoch-making events can be mentioned.

One of the earliest recorded dates of interest is by an English sea captain who visited the Spanish colonists in Florida in 1565 and who stated that 20 hogsheads of wine had been made in one season from wild grapes. Capt. John Smith commented (1607–1609) on the abundance of wild grapes in Virginia, and from the very beginning (1621 and later) similar references applying to the New England colonies are found. Moreover, they occur with considerable frequency in the literature of the entire colonial period.

Little if any distinction was made in the different types of grapes observed by the colonists, except as to color. References to blue, black, and white or yellow grapes occur. It is an obvious conclusion that those found north of Virginia comprised what have long since been designated as bunch or euvitis grapes, whereas those found in Virginia and farther south were probably Muscadine grapes, of present terminology. In fact, it seems altogether probable that John Smith (1607–1609) referred to this type of grape when he wrote:

> There is another sort of grape neere as great as a Cherry, this they (the Indians) call *Messaminnes:* they bee fatte, and the juyce thicke.

There are no records, however, indicating the early culture of Muscadine grapes. The Scuppernong variety is the oldest named and the most important sort of this type. Neither the place nor the time of origin of the Scuppernong is definitely known, but it is credited to Tyrrell County, N. C., at some time prior to 1760 (fig. 79).

The fact has been stated elsewhere that the early colonists brought the fruits with them with which they had been familiar in their old homes, or else sent back for them at an early opportunity. The grape was no exception. In 1621 and 1622 the London Co., appears to have made the first attempt to grow vinifera or European grapes in Virginia. Other similar attempts followed in different regions, but with the same lack of success. The universal failure of these early vinifera vineyards was doubtless due in a large degree to destructive diseases, but it also seems probable that they suffered

FIG. 79.—Muscadine grape arbors in North Carolina. A common method of training this type of grape

from attacks of a native grape insect, the phylloxera, or root louse (*Phylloxera viticola*), to which the European grape is highly susceptible, but which the native American grapes resist successfully.

While grape history was being made in the Colonies along the Atlantic coast, the Pacific coast was not being entirely overlooked. But there the record reads very differently. The early Mission Fathers, going northward from Mexico, established the San Diego Mission in 1769 where they planted the Mission grape, a vinifera variety, which is said to have been known in Mexico as far back as 1520. Later other missions were established—at San Gabriel in 1771, at Los Angeles in 1781, and at Santa Barbara in 1786. Grapes were planted at each of these missions where the earliest successful culture of vinifera or European grapes in America is said to have occurred.

Success Built on Failures of Early Efforts

A new era in American grape growing, based on the failure of two great efforts—great for those days—began about 1800 and in the quarter century following. In those failures, and in the later

successes that grew out of them, the name of John James Dufour, II, must ever have a conspicuous place. Dufour came to America in 1796. After spending much time visiting places where grapes were growing and apparently studying the conditions carefully, he was, himself, ready to locate. This he did at a point about 25 miles from Lexington, Ky. The Kentucky Vineyard Society was organized and began the planting of a vineyard, probably, in 1799. This effort, however, failed of success and rather speedily, since the prospects were so unpromising that by 1802 some members of the company were seeking a new location. The one they chose was near the present town of Vevay, Ind., and there they proceeded to plant a vineyard.

Though this enterprise persisted somewhat longer than did the one in Kentucky, it could not endure except for a brief period. It again demonstrated that the vinifera grapes of Europe could not withstand the conditions that they were meeting in the New World. However, in the vineyard in Indiana, one or two varieties resisted the conditions better than the others and continued to grow. One of these varieties that persisted and which Dufour called the Cape grape proved to be the foreshadowing of what has come to be our native American bunch-grape industry—the most widely grown type of any grape now cultivated in the United States. It is this variety in particular, coming, as it did in sequence out of what was otherwise a twice-repeated failure that gives to Dufour's efforts their epoch-making aspect. He never realized what has long since been accepted as true that this Cape grape was, in fact, a native vine which somehow had been planted in his vineyard or had sprung up from a root already there. Later he planted the variety more or less extensively and apparently with success. Throughout this period and even until many years later the grape was valued for wine making, not for table use.

The Second Epoch in American Grape History

What has been designated as the second epoch in American grape history has to do with John Adlum who planted a vineyard on Rock Creek in the District of Columbia, and his connection with the Catawba variety which began in 1819 when he pruned a vine of it growing in Montgomery County, Md., for the cuttings. Though Adlum's first regard for this variety was for wine making, he also referred to it as "a very tolerable table grape."

Had Adlum been content simply with planting the Catawba grape himself, little might have come of the variety, but he evidently distributed it widely. Among the number to whom he sent cuttings was Nicholas Longworth, of Cincinnati, who received them in 1825. It is evident that Longworth became highly impressed with the value of this grape. Longworth's relation to the development of grape growing was such that he has been called the "father of American grape culture."

During the period from about 1825 to 1850 many vineyards were planted in widely distributed parts of the country. Grape growing began to assume commercial aspects not hitherto recognized, though it required another 25 years or more to establish the real beginnings of the present commercial development.

This historical sketch is necessarily very fragmentary. Only a few of many equally interesting events and personalities have been mentioned. A very full account appears in "The Rise of the American Grape,"[4] on which this review is based. It remains only to record here that the breeding of grapes begun by the late E. S. Rogers of Salem, Mass., in 1851, and similar work carried on extensively through a long series of years by the late T. V. Munson of Denison, Tex., as well as the results of several other less widely known breeders, gave much impetus to grape growing. The varieties produced by these breeders fill a large place at the present time in the grape industry of the country (fig. 80).

FIG. 80.—A native American bunch (envitis) vineyard in New Jersey

The foregoing review relates, as is obvious, to what was taking place in the East. Apparently not much headway had been made on the Pacific coast during the period covered by this sketch. However, an awakening in grape growing in California occurred soon after the middle of the last century. An essay by Col. Agostin Haraszthy on grape growing and wine making published in 1858, and given wide circulation by the California State Agricultural Society, so stimulated viticulture in that State that 20,000.000 vines had been planted there by 1862 (fig. 81).

In 1861 Governor Downey appointed a commission to report on ways and means to promote grape growing in California. Colonel Haraszthy of this commission visited the wine districts of Europe and procured about 200,000 cuttings and rooted vines, embracing all the best-known varieties. These were grown at Sonoma, Calif., and cuttings from them were distributed among growers in various parts of the State. During subsequent years, commercial grape growing in California based entirely on vinifera varieties developed more or less rapidly. The industry included the production of table, wine, and raisin varieties, with some interchange in varietal disposition depending on the demand in different lines. During the last five years extensive areas have been planted to vineyards in

[4] BAILEY, L. H., THE EVOLUTION OF OUR NATIVE FRUITS

California, the total acreage in vineyards being more than doubled during this period. At the same time many thousands of acres of vineyards there have become depleted and unprofitable as a result of inroads made by the phylloxera, the insect which doubtless was in part responsible for the failure of Dufour's attempts in Kentucky and Indiana, and those made earlier along the Atlantic coast. The menace of phylloxera to the California grape industry at the present time is recognized by many. The solution of the problem would seem to be the grafting of the vinifera varieties on stocks that are resistant to this insect.

FIG. 81.—A vinifera vineyard in California in its sixth season of growth

Though not a part of the present account, it is of interest to note here that the phylloxera, a native American grape insect, found its way many years ago into some of the vinifera grape sections of the Old World, where its destruction of the vineyards was nearly complete. The restoration of the industry in those sections was made possible by the use as stocks, on which to graft the vinifera varieties, of American grape roots that were resistant to this insect.

The development of grape growing and its geographical distribution during the earlier period is shown in Figures 82, 83, 84, and in the data accompanying them. Following about 1870, there was a rapid increase in the acreage and about 1875 a temporary overproduction occurred. At about that time, however, a decline began in the production of American cuvitis, or bunch grapes, owing to black rot and other diseases. Grape production in 1879 is shown in Figure 85, and the data accompanying it.

Changes in the Industry

The viticultural industry from its beginning has been marked by a series of "ups and downs." For instance, in the Eastern States grape prices have varied from 10 cents to three-quarters of a cent

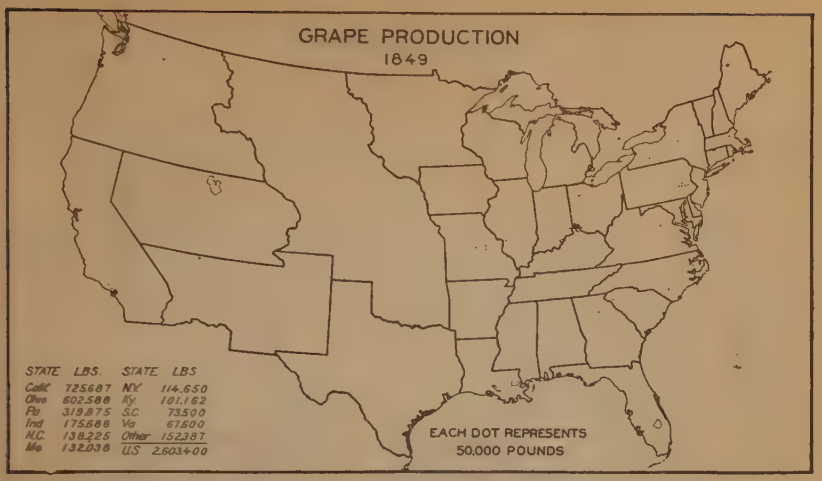


FIG. 82.—In the 1849 census 32 States reported the growing of grapes, their entire product being reported in gallons of wine made. Of the 216,950 gallons reported, California reported 26.75 per cent; Ohio, 22.5; Pennsylvania, 11.8; Indiana, 6.4; North Carolina, 5.1; Missouri, 4.45, or a total of 76.67, and 26 other States reported 23.33 per cent. The total product, although not large, gave expression to the beginning, about the year 1830, of a new era in grape history, namely, the culture, use, and improvement of American euvitis

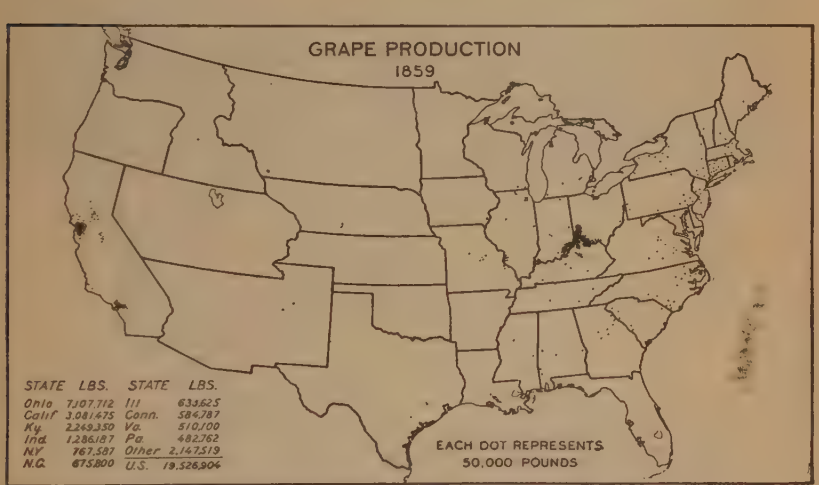


FIG. 83.—In 1859 the entire grape product was reported in gallons of wine. Of the 1,627,242 gallons reported by 39 States, Ohio reported 34.9 per cent; California, 15; Kentucky, 11; Indiana, 6.3; New York, 3.7; North Carolina, 3.3; Illinois, 3.1; Connecticut, 2.8; Virginia, 2.5; Pennsylvania, 2.3; Missouri, 1.7; Georgia, 1.6; South Carolina, 1.5, or a total of 89.7, and 26 other States reported 10.3 per cent. In the South the Scuppernong variety continued as the favorite; next to it, Catawba and Warren; in California it was the Mission; in other States nine-tenths of the vineyards were Catawba. Of the Concord, Delaware, Hartford, Prolific, Iona, Adirondack, and of the Rogers hybrids little as yet was known. The decade closing with this census witnessed the birth of commercial wine manufacture in the United States

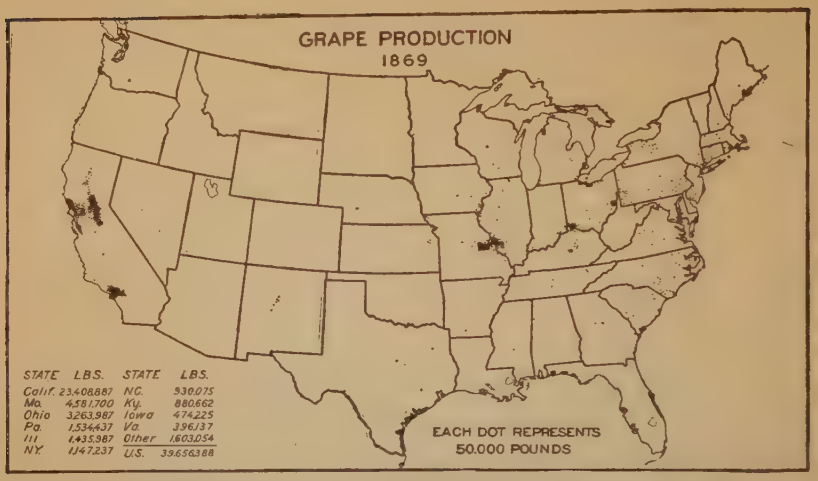


FIG. 84.—In 1869 of the 3,304,699 gallons reported from 41 States and the District of Columbia, California reported 56.6 per cent; Missouri, 10.2; Ohio, 7.9; Pennsylvania, 3.7; Illinois, 3.4; New York, 2.7; North Carolina, 2.2; Kentucky, 2.1; Iowa, 1.1, or a total of 89.9 per cent, and 33 other States reported 10.1 per cent. During this decade California introduced all the choice European wine varieties, greatly increased her grape production, and the quality of the wine made. East of the Rocky Mountains there was rapid increase in vineyard acreage and in originating and bringing into culture improved varieties of American euvitis. Following 1875 quite a decline occurred owing to black rot and other diseases

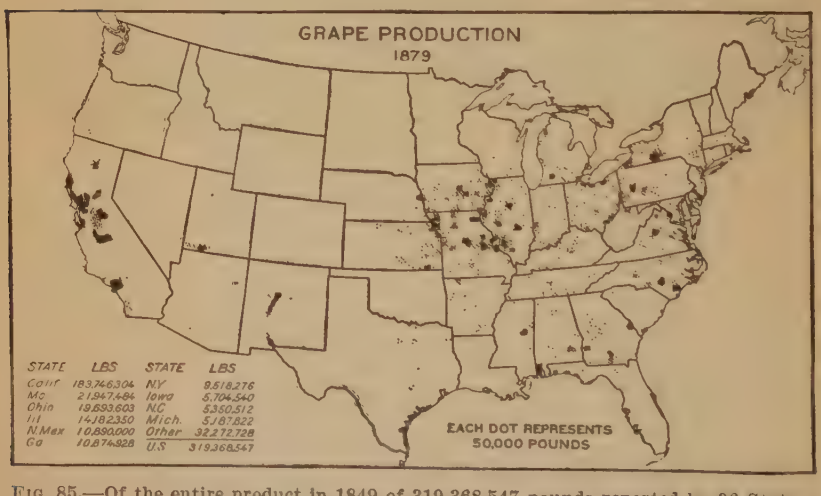


FIG. 85.—Of the entire product in 1849 of 319,368,547 pounds reported by 36 States, California reported 57.5 per cent; Missouri, 6.8; Ohio, 6.1; Illinois, 4.4; New Mexico and Georgia, each 3.4 per cent; New York, 2.9; Iowa, 1.7; North Carolina, 1⅔; Michigan, 1.6; Alabama and Kansas, each 1.08 per cent, totaling 92.5 per cent, and 24 other States reporting 7.5 per cent. From 1870 the California grape acreage increased so that in 1875 there was a temporary overproduction of wine. Raisin production as an industry began to manifest itself. The decline from 1869 to 1879 in value of grape products in the United States was due to disease injury in the States east of the Rocky Mountains

per pound in basket lots, and bulk grapes from $100 to $4 per ton; and black rot, anthracnose, mildew, and insect pests have wrought havoc. In California, bulk grape prices have varied from $150 down to $6 a ton and even less, and in some cases hogs have been turned into vineyards to harvest the grapes. In a single decade the so-called California vine disease and phylloxera have wiped out more than 100,000 acres of what were flourishing vineyards. From 1854, when the Concord was introduced (fig. 86), up to 1883, viti-

FIG. 86.—Ephraim Wales Bull, originator of the Concord grape and the original vine. Lexington Road, Concord, Mass. Mr. Bull died in 1895. This picture was probably taken prior to 1890

culture made its greatest growth in eastern America. From 1883 to 1903 the annual vineyard acreage increase for the entire country did not exceed 1.5 per cent. From 1909 to 1919 there was a series of exceptionally dry years and seasons in which late spring frosts and insect and disease injuries had serious effects on the vineyards and their output. The annual acreage increase was only about 5 per cent. The growth of viticulture in this country by decades since 1870 is indicated on the maps inserted as Figures 87 to 90.

Recent trends in grape production include the large increase in acreage in California as previously mentioned, the development of several thousand acres of American euvitis (bunch grape), vineyards largely of the Concord and Moore Early varieties in the Ozark region of southwestern Missouri and northwestern Arkansas, and a more widespread interest in Muscadine grape planting in the South Atlantic and Gulf Coast States. The development of new methods of using the fruit of the Muscadine type of grape has resulted in the planting of a considerable acreage, a large part of which is in the form of home vineyards. Taking the grape industry as a whole

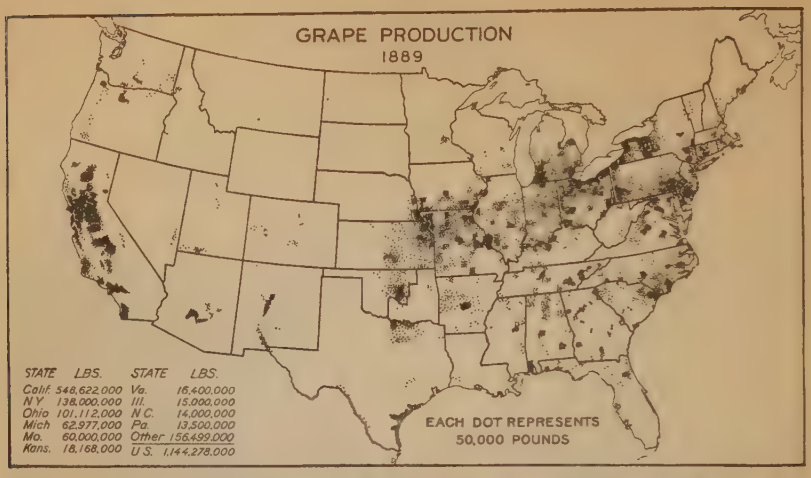


FIG. 87.—Data of the 1889 grape crop show table grapes have rapidly become second, raisins third, and grape brandy fourth of the most important grape outputs. The census valuation given for the entire crop of 1,144,278,000 pounds is $2,846,748 and shows fully 42 per cent was used for wine and brandy, 47 per cent as table grapes, and fully 11 per cent in raisins and dried grapes. Fully 35 per cent of the total output, 100 per cent of the raisin and dried grapes, 56 per cent of the wines, 90 per cent of the brandies, and 14.5 per cent of the table grapes came from California

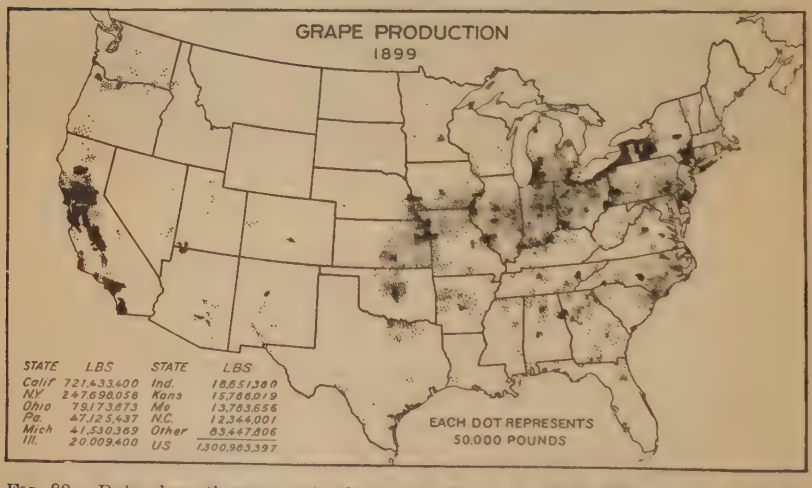


FIG. 88.—Data show there were in the United States in 1899, 359 wineries, $9,838,015 invested in viticulture, the grape products worth $6,547,310; a remarkable increase in all grape lines, with grape brandies, champagnes or sparkling wines, dried and canned grapes as important new industries. The census gives the entire grape crop as 1,300,983,397 pounds used for 34,390,144 gallons dry and sweet wines, 2,836,527 gallons of brandy, 36,142 cases of canned grapes, 15,867 cars of table grapes, 94,334,000 pounds of raisins, 480,000 pounds of dried grapes. Of this all the raisins, dried, and canned grapes, 65 per cent of the wines, 98 per cent of the brandy, and 5 per cent of the table grapes came from California.

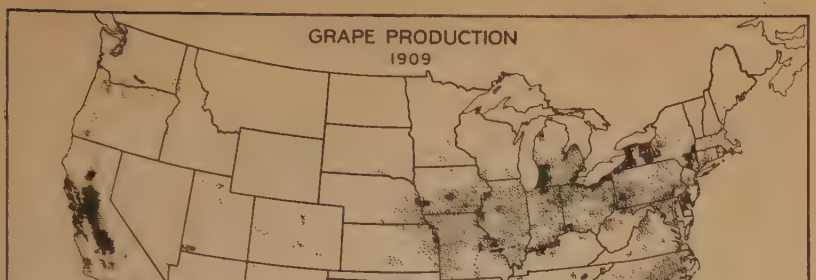


FIG. 89.—The 1909 compared with the 1899 census shows nearly 100 per cent increase in acreage of vines and grapes produced and in various uses made of grapes. In 1909 there were 2,571,065,205 pounds of grapes produced and used in making 52,912,396 gallons of wines of all kinds and unfermented juices, 6,393,150 gallons brandy, 24,470 cases of canned grapes, 140,000,000 pounds of raisins, 450,000 pounds of dried grapes, and 18,640 cars of table grapes were shipped. All the raisins, dried, and canned grapes, 82 per cent of the wines, 92 per cent of the brandies, and 31 per cent of the table grapes came from California. Trade papers report 3,070,200 gallons unfermented juices made in the Middle Atlantic States

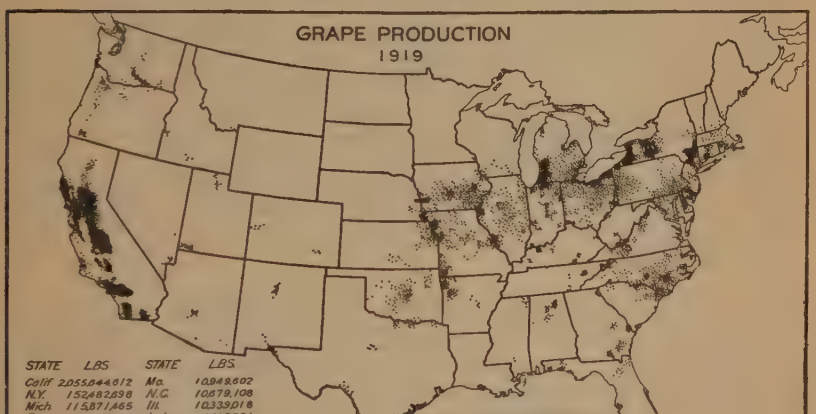


FIG. 90.—The 1919 census gives the grape output as 2,513,680,861 pounds, or 2.33 per cent less than in 1909, whereas their value is given at $95,181,657 or four and one-third times that of any preceding vintage, owing to increased values occasioned by the war and the enforcement of prohibition laws. The grape crop was used in making 32,551,937 gallons of wines and juices, 1,802,421 gallons of brandy, 104,446 cases of canned grapes, 28,495 carloads of wine and table grapes, and 395,000,000 pounds of raisins. All the raisins and canned grapes, 83 per cent of the wines, 98 per cent of the brandy, and 67 per cent of fresh grape shipments came from California

a number of special features have been developed, the most prominent of which, from an economic standpoint, being the production of raisins.

Raisins

Commercial raisin production in California was first emphasized in 1873, when nearly six thousand 20-pound boxes of raisins were marketed. For the next two decades this country's production of raisins did not equal its importations. A raisin-seeding machine was invented in the early seventies by George E. Petit, of California, but it took until 1893 to develop a trade for seeded raisins; since then the demand has steadily increased. By 1892 our raisin production equaled that of Spain. Since 1898, when this country first began

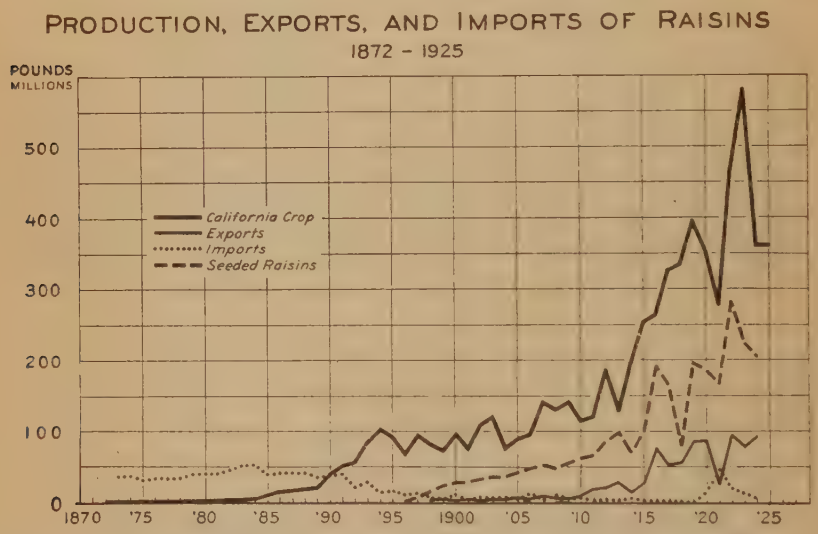


FIG. 91.—Practically all the raisins in the United States are grown in California. Up to 1896 only enough were produced to make up the difference between those consumed and those imported. By 1905 domestic production had increased to the extent of supplying the demand for home consumption. Since then an export trade has gradually developed until now this country is producing more raisins than all the rest of the world

to export raisins, the imports have rapidly decreased, until they are now negligible. In 1919 the exports exceeded 100,000,000 pounds. The production in 1922 amounted to 470,000,000 pounds. The State of California now produces more raisins than all the rest of the world. Figure 91 shows the trend of the raisin industry in this country, including exports and imports for a series of years.

Since 1920 a considerable acreage has been planted in California to the Panariti variety, the choicest of the currant grapes, and present prospects indicate that this country will soon produce sufficient dried currants of commerce to meet domestic demands.

Table Grapes

Owing to the excellent dessert qualities of American euvitis, or bunch grapes, such as the Catawba, Isabella, and Concord, table-grape shipments, as an industry, began about 1880 in the North-

eastern States, but suffered in the heavy reaction of grape values late in the eighties and early in the nineties. However, by 1895 the shipment of native table grapes again became more active. Shipments of vinifera grapes for table use from California began about this time and have steadily increased. In 1923 grape shipments for the entire country amounted to 65,354 cars. The table-grape industry in California has developed to large and important proportions. Not only are the grapes shipped fresh as harvested, but a Christmas trade based on long-keeping sorts packed in drums with sawdust (instead of cork, as is the European product) marks one of the distinctively American features of the vinifera grape industry in California.

FIG. 92.—A young vineyard of native grapes trained by the modified Munson system

Unfermented Grape Juice

Commercial manufacture and preserving of grape juice unfermented, so it can be used everywhere and at all times of the year, originated in this country and began to assert itself as an industry at the close of the last century. The annual commercial output is estimated at from 5,000,000 to 8,000,000 gallons, and a large quantity is annually put up by enterprising housewives.

Canned Grapes

In California, since 1895, canned grapes have been put up in considerable quantities, the heaviest annual output so far having been 128,125 cases, or 768,750 gallons.

America's Contribution to the Grapes of the World

The native grapes represent a contribution of America to the fruits of the world (fig. 92). Though similar in many respects to the vini-

fera grape of the Old World they possess characteristics so distinct from that type as to render the differences more striking than their points of similarity. In the many types and varieties now available few fruits have a wider range of adaptability than the grape. The maps showing distribution affirm this statement. Throughout most of the Northern States, extending into the middle South and including the Northwest, varieties of the American euvitis or bunch grapes (*Vitis labrusca*) are grown; in the Coastal Plain region of the South Atlantic and Gulf States, the Muscadine varieties occur, the species represented being native to these regions; in the South Central States and through the Southwest the bunch grapes developed by the late T. V. Munson and representing the euvitis other than the Labrusca type are at home; in California the European or vinifera varieties comprise the entire commercial output.

Nuts

Economic Importance

Approximately $50,000,000[5] worth of nuts was consumed in this country during 1919, the last year for which census data are available. Of this amount $30,000,000 were home-grown nuts which could be definitely accounted for, perhaps $500,000 worth were of native nuts which were neither measured nor appraised, and which therefore could be less definitely accounted for, and about $20,000,000 worth were of shelled and unshelled nuts imported for consumption. The species of major importance, so far as monetary value of domestic crops is concerned, were as follows: Persian walnut, $17,916,158; pecan, $7,792,086; and almond, $3,963,264.

Persian-walnut production was reported by the census of 1920 from 23,798 farms in 28 States, almonds from 12,845 farms in 18 States, and pecans from 102,052 farms in 29 States. It will, therefore, be seen that the ratio of total farms reporting pecans was more than 4 to 1 in comparison with walnuts, nearly 9 to 1 with almonds, and nearly 3 to 1 with the two together. Persian-walnut production is largely confined to California, Oregon, and Washington, but is of minor importance in Utah and Arizona. In other States where reported it is of scattered occurrence only. Almond production is of major importance in California alone, which in 1919 produced 15,699,748 pounds, although between 10,000 and 50,000 pounds each were reported in the States of Utah, Texas, Oregon, Washington, and Arizona. Pecan production is of major importance in Texas, Oklahoma, Georgia, Louisiana, Mississippi, Alabama, and Florida, although its yearly production exceeds 100,000 pounds in South Carolina, Arkansas, North Carolina, Kansas, Missouri, and Illinois.

[5] Bureau of Agricultural Economics, Nov. 22, 1924.

TABLE 4.—*Persian walnut and almond acreage, production, and value in California, 1900–1925*

Year	Walnuts			Almonds		
	Bearing acreage	Production	Total value	Bearing acreage	Production	Total value
		Tons			*Tons*	
1900	[1] 14,028	5,430		[1] 20,000	2,740	
1901		6,900			1,500	
1902		8,570			3,270	
1903		5,500			3,200	
1904		7,590			800	
1905		6,400			2,100	
1906		7,000			750	
1907		7,400			750	
1908		9,200			2,900	
1909		9,350			1,500	
1910	[1] 17,000	9,600		[1] 14,584	3,300	
1911		12,500			1,450	
1912		11,250			3,000	
1913		11,350			1,100	
1914	34,138	8,900		14,947	2,250	
1915	34,453	14,825		18,602	3,500	
1916	35,379	14,600		20,470	3,400	
1917	45,687	16,500		28,383	4,000	
1918	48,520	19,950		29,242	5,100	
1919	50,900	28,100	$15,455,000	30,100	7,250	$3,190,000
1920	58,963	21,000	8,400,000	35,044	5,500	1,980,000
1921	67,026	19,500	7,800,000	39,988	6,000	1,920,000
1922	67,869	27,000	9,720,000	50,272	8,500	2,465,000
1923	69,217	25,000	10,000,000	53,453	11,000	2,860,000
1924	70,565	21,500	9,030,000	56,646	9,200	2,760,000
1925 [2]		30,500	13,420,000		7,500	3,000,000

[1] Acreage calculated on the basis of number of trees reported by the Bureau of the Census.
[2] From the Monthly Supplement, Crops and Markets, December, 1925.
Office of Agricultural Statistician, California Cooperative Crop Reporting Service.

Nut growing, although representing the youngest orchard industry of importance in this country, is now a staple pursuit in sections where it has become established. The trees require much the same degree of attention to culture as do other orchard fruits and are no less responsive to climatic and environmental influences. Likewise they are quite as susceptible to serious diseases and insects pests as are other cultivated species.

Relation of Nuts to the Fruit and Vegetable Industries

Nut culture, one of the most recent additions to commercial horticulture, not only makes a worthy financial contribution, but extends economic horticulture to territory possessing soil and climatic conditions in general beyond the range of successful fruit and vegetable culture. During normal years the bulk of pecan production is still largely from native trees in the western and central part of the range of the species. The pecan is confined mainly to an area forming an enormous gap north of the citrus area and either below the altitude or to the south of latitudes to which deciduous fruits are best suited. With the exception of the Satsuma orange belt on the Gulf coast and in northern Florida its range can not be said to overlap that of the citrus. The Persian walnut intermingles considerably with the citrus orchards in southern California and with those of other fruits farther north, particularly in the Pacific Northwest, where its range overlaps that of both deciduous and small fruits. The almond adapts itself to soils rather too dry for most fruits, although it requires a

proper amount of moisture. Wherever pecans or walnuts are adapted to the same envionmental conditions as are orchard fruits, it is often practicable to use fruit trees as fillers. In the main, nuts mature at a different period than do fruits and vegetables in the same general latitude, and so form an important money crop at a time when ordinarily there is no other income.

Nuts are less perishable than most other horticultural products; they may be handled with minimum danger of injury by bruising; and under refrigeration at 32° F., nuts in perfect condition may be kept practically without deterioration from one season to another.

History

Consumption of nuts on this continent long antedated that of a majority of such fruits as are now of leading importance in the United States. They were among the staple foods of the Indians, whereas, with minor exceptions, all orchard fruits have been introduced from foreign countries by modern civilization. However, so far as known, the Indians planted few, if any, nut trees for purposes of crop production, and there is no indication that such planting as was practiced by them had material influence in improving the species, although no doubt it was instrumental in extending the range of nut production.

The Pecan

Native nuts of the more important species appear to have exercised little influence upon early civilization in North America. The pecan, now the leading member of commercial importance in this group, is not common to the sections first settled, nor were any of the important exotics successfully established. Nevertheless, numerous instances of planted pecan trees in the East were recorded on Long Island and vicinity beginning in 1872.[6] Commercial planting may still be said to be nonexistent north of the Carolinas, although there are some exceptions in the vicinity of Norfolk, Va. Farther south the existence of occasional old trees, and the superiority over the western product of many eastern seedlings from which new varieties are constantly being derived, would indicate that a process of improvement by human planting and selection has been under way since at least early during the last century. Pecan propagation by asexual methods was first recorded by Taylor,[7] who found that the Centennial variety had been grafted in 1846 or 1847. Following this instance there is no further record of pecan grafting until the early eighties, when William Nelson of New Orleans and the late A. G. Delmas, of Pascagoula, and Charles E. Pabst, of Ocean Springs, both of Mississippi, and E. E. Risien, of San Saba, Tex., began to graft nursery trees in considerable numbers. Mr. Risien was doubtless the first to successfully graft the tops of large forest trees.

The cracking of pecans and marketing the kernels is known[8] to have been practiced during the early eighties by the Indians about

[6] True, Rodney H. Notes on early history of pecans in America. Smithsonian Report, 1917, p. 446.

[7] Taylor, William A. Promising new fruits. P. 407, Yearbook, 1904.

[8] Personal statements of G. A. Duerler, former president of the Duerler Manufacturing Co., candy manufacturers and pecan crackers, San Antonio, Tex., to C. A. Reed, Dec. 12, 1917.

Fredericksburg, Tex., who deftly clipped off the ends of the nuts by blows with railroad spikes and took the kernels to the villages in bags made of goatskins. The Barnhart Mercantile Co., of St. Louis, appears to have been the first to crack pecans and market the kernels in quantity. R. E. Woodson, for many years vice president of that company, states [9] that previous to and including the year 1884 "not more than 50,000 pounds of shelled pecans were sold to manufacturers, although more were used by small confectioners, who cracked their own supply." During that year Mr. Barnhart's company began cracking with hammers, employing a crew that "did not exceed ten persons." [10] In 1888 Mr. Woodson [11] invented the first hand-power cracking device. About 1895 [12] the Duerler Co., added to their confectionery business the cracking of pecans, using only the hammer for the purpose. Shortly afterward a power machine made by a Mr. Pfeiffer, of Kansas City, appeared and was used by the Duerler employees. This machine was soon superseded by one invented by Mr. Woodson in 1900, which was run by power, but fed by hand. Since then improvements have been made upon the Woodson machine and a few other pecan-cracking machines have been invented. Several of these are now on the market. Some of the cheaper makes are fed by hand, but the larger commercial machines are equipped with automatic feeding arrangements.

Firms having headquarters in San Antonio and Tyler, Tex., St. Louis, Mo., and Chicago, Ill., are now the principal agencies for assembling and distributing both the unshelled and shelled wild pecans.

Early crops were almost wholly the result of gathering rather than of producing, as pecans were then nowhere under cultivation, and harvesting was but a matter of threshing the wild trees and picking up the nuts. The product was considered public property, regardless of actual ownership, and it was not an uncommon practice for trees to be cut down to facilitate gathering. An exceedingly small part of the entire crop was then harvested. Earliest prices on record were but a cent or two a pound. By 1900 they had risen to an average of from 7 to 9 cents. By 1910 the pecan business had assumed great volume and cracking houses were discriminating between nuts which would crack readily and release a high proportion of perfect halves and those which could be cracked only with difficulty. The latter were cleaned and polished by being made to rub together in revolving cylinders, and later were immersed in a coloring solution, dried, and placed upon the market in the unshelled condition. Generally speaking, the shells of these nuts were thick and in internal structures such that the dividing walls, rich in tannin, broke badly in cracking and became difficult to separate from the kernel particles. For many years these pecans were the only ones to which the public had access, as the shelled product was largely consumed by the confectionery and bakery trades. As a result, popular prejudice against pecans, which was long in being overcome, became highly developed throughout much of the country.

---

[9] American Nut Journal, Rochester, N. Y., October, 1920, p. 50.
[10] Proc. Nat. Nut Growers Association, 1913, p. 48.
[11] Letter to Dept. of Agr. by Mr. Woodson, dated Jan. 6, 1925.
[12] American Nut Journal, September, 1918, p. 38. RISE OF THE COMMERCIAL PECAN-CRACKING INDUSTRY.

The planting of numerous large orchards of grafted pecan trees running into hundreds of acres each, and the extensive planting of small orchards, dates back no further than 1905. Prices for cultivated pecans were early established at a high figure, for the reason that when varieties were first propagated by asexual means the parent trees were drawn upon for both scions and specimen nuts. Nut production of such varieties, therefore, was small and the demand greatly out of proportion to the supply. Nurserymen had no logical objection to the high prices which they had to pay for specimen nuts, as the higher the prices the better the argument with prospective buyers of nursery trees. The price per pound paid by the nurserymen for specimen nuts needed in illustrations often equalled or exceeded that charged by them for grafted trees. Pecan prices are still high in proportion to those of other nuts, although large profits to producers are seldom realized, as yields of the superior varieties per unit have been well below what was anticipated, and production costs much higher. The industry is now no more than at the threshold of the commercial stage. Figures 93, 94, and 95 illustrate the type of pecan orchard now found in many sections of the South.

FIG. 93.—Summer view in a southern pecan orchard. Plantings aggregating thousands of acres in single communities are not uncommon in many sections. Pecan trees require quite as intensive cultivation, spraying, fertilization, etc., as do other orchard fruits

Although the orchard development of the pecan industry has chiefly taken place in districts outside of the native range of the species, and therefore well to the east of the Mississippi River, during recent years there has been a widespread effort to improve the product of that section by top-working the native trees to superior varieties. This is taking place on a large aggregate scale in parts of Texas, Louisiana, Oklahoma, and, more recently, in Arkansas. As a result of this work, together with other steps being taken to stimulate greater and more regular production from the wild trees,

it appears inevitable that the total output of nuts of the better grade will soon be grealy increased.

Pecans from wild trees are largely marketed through regular commercial channels. It is not improbable that this custom will continue indefinitely, despite advantages which normally accrue from cooperative selling. The pecan industry, however, is peculiar to itsef in many respects. Full crops from wild trees are most irregular, and the great bulk of nuts is produced in relatively

FIG. 94.—Winter view in a typical pecan orchard of the South. Few large orchards of the most desirable varieties are more than from 15 to 18 years of age since transplanting from the nursery. Yields in excess of from 250 to 300 pounds per acre from mature trees have thus far been rare. Under more modern methods of cultivation a few of the more successfully handled orchards are now yielding 1,200 pounds or more per acre

small quantities per farm. The market demand for pecans is such that commercial buyers are eager to pay immediate cash at fair prices, whereas the cooperatives advance only a part payment at the time of delivery and remit the remainder after the product has been sold and the handling costs deducted. To refuse cash offers under these circumstances, and to wait in order to deal through a cooperative at possibly only a few cents per pound more, does not appeal to the average farmer, when by accepting such offers the transaction of selling could be closed for the season. Therefore, in districts of wild production, cooperative pecan selling has made slight progress.

The situation as regards cooperative marketing is much more favorable in districts where pecans are produced in cultivated orchards. Here, yields are more regular, the character of the product much superior, the amount of investment involved is vastly greater, and the price per pound considerably above that of the wild pecan, and cooperative marketing has made substantial headway. At present there are two nonprofit organizations handling pecans. These are the National Pecan Growers Exchange and the Southern Pecan Growers Association, both of Albany, Ga. Together these organi-

zations are now annually selling upwards of 2,000,000 pounds of nuts. They are largely responsible for the uniformly good prices that producers are receiving and the systematic distribution of pecans over the whole country. At various other points pecans are sold cooperatively by local produce exchanges organized primarily for other commodities.

To a considerable extent the pecan producers have obtained fancy prices by developing the mail and express-order trade. However, this is steadily giving way to cooperative selling at lower gross prices, as the money, labor, and risks involved in the sale of small lots become very great. Not infrequently it is found that the net returns are little if any greater than as though the product had been marketed in bulk through a cooperative organization.

FIG. 95.—A pecan grove in northwestern Kentucky. Trees of this size and age are ideal for top-working to superior kinds

In common with all nuts sold in the shell, the demand for pecans is largely limited to the Thanksgiving and Christmas holiday trade, while shelled nuts are in ready demand during the greater part of the year. To meet this situation, the present tendency with all American-grown nuts is to develop the shelling industry in order to take advantage of the longer marketing period.

The Persian Walnut

Persian walnuts in this country were first planted in the East, probably early in the eighteenth century. Scattered trees of these early plantings and their offspring, together with later introductions, still survive in various sections, principally from lower Connecticut to the Chesapeake Peninsula, and inland west to middle-southern Pennsylvania and northwestern Maryland. It was, however, owing to plantings on the western coast that the commercial industry developed. The first plantings in California are supposed to have been made by the Franciscan monks during the establishment of the California missions in 1769 and the years that followed. The present California stock traces mainly to a planting of walnuts from Chile made by Joseph Sexton of Goleta in 1867, and to introductions direct from France by Felix Gillet, following the establish-

ment by him of the Barren Hill Nursery at Nevada City, Calif., in 1871. The pioneer work of these men laid the foundation for walnut growing in their respective parts of the State as it exists at the present time. The best of the Sexton stock, known as the Santa Barbara paper-shell type, is responsible for the bulk of the production from the southern counties of the State. Planting of the

FIG. 96.—Persian walnut cluster at ripening time. Normally the nuts automatically separate from the hulls and drop to the ground

French types has extended from northern California into Oregon, where walnut growing is assuming considerable proportions. At present, one variety of this type, the Franquette, is regarded as being the most hardy of any now available in this country. Figures 96 and 97 give a good idea of the character of the Persian walnut at ripening time, also the way orchards look during the growing period.

The rate of development of the walnut industry may be best judged by the annual yields in tons: 5,430 in 1900; 9,600 in 1910; 19,980 in 1920; and 30,500 in 1925. The total value of the crop in 1925 was $13,420,000. Prices per pound to the grower in 1924 ranged from 16 to 29 cents, and averaged about 23 cents.[13]

Cooperative marketing of walnuts in California has had a profound influence on the development of the industry in that State. The cooperative organization now has a membership of over 4,000 and handles approximately 87 per cent of the output of the State. The advanced business methods which it has applied have had much to do with stabilizing the industry, both in the matter of production and of selling. Costs of production have been lowered and prices

FIG. 97.—A well-cultivated orchard of Persian walnuts of the Franquette variety in northern California. The average production per acre for such orchards in this State is between 800 and 1,000 pounds, although yields above 2,000 pounds sometimes occur

raised without materially increasing the costs to the consumer. It is undoubtedly true that present retail prices are lower than would have been the case without cooperative marketing, and certainly true that the quality of the product offered is much more uniform and of a higher average grade than it would have been without such a system. As a result of these business methods and the investigations in walnut culture in California directed very largely by the State university, the industry now stands out as one of the most intensive and successful orchard pursuits of the whole country. The cooperative organization has been largely responsible for greatly increasing the distribution of nuts in the shell, and, by the use of cracking machinery, it has developed an important trade for the shelled product and an outlet for the salable parts of damaged or inferior nuts without detriment to the trade. By converting the walnut shells into carbon of a form for which there is commercial use, these parts of the nuts are now being disposed of at a profit.

[13] Letter from California Walnut Growers Association, dated Oct. 3, 1925.

The Almond

Almonds were tested in the Eastern and Southern States by the early settlers and planters, but the results were chiefly disappointing because of climatic conditions which prevented the bearing of regular crops of nuts. The trees proved hardy in many localities, but were generally unfruitful. Planting in California began at about the middle of the nineteenth century. For many years results in that State were generally no more encouraging than they had been in the East. "In 1878 A. T. Hatch, of Suisun, Calif., planted an orchard of over 2,000 seedlings of the bitter almond, of which he budded all but about 300 trees."[14] Out of the 300 varieties, 4 were selected, 3 of which soon became the leading kinds grown in the country, a distinction which they still retain. Figure 98 shows a typical almond orchard, and Figure 99 the method of drying almonds on trays in the open.

FIG. 98.—An 8-year-old almond orchard in California well cared for. The almond is closely related to the peach, but the trees grow considerably larger

The growth of the almond industry in California, like that of the walnut, has been fairly steady. "Nut Culture in the United States," page 32, shows that in 1885 the yield for the State amounted to some 675 tons. According to the California Fruit News (December 11, 1920) it was 2,740 tons in 1900, 3,300 tons in 1910, and 5,500 tons in 1920. E. E. Kaufman, agricultural statistician, places the crop of 1924, at 9,200 tons.[15] The December Monthly Supplement, Crops and Markets, of the Department of Agriculture, places the 1925 crop at 7,500 tons and the total value at $3,000,000.

Almond prices in 1899 ranged from 7 to 10 cents a pound. By 1910 they reached 17½ cents for the best varieties. By 1920 the

[14] NUT CULTURE IN THE UNITED STATES. Div. of Pom., U. S. Dept. of Agr. Special Report, 1896.
[15] CALIFORNIA CULTIVATOR, Vol. LXIV, No. 3, Jan. 17, 1925, p. 71.

range was from 12 to 25 cents. On September 3, 1925, the California Almond Growers Exchange named its opening prices ranging from 19½ cents to 30½ cents.

Cooperative marketing has meant relatively as much to the almond industry as it has to that of the walnut. Like the walnut, the almond has met sharp competition with nuts of foreign production, particularly with shelled products. Sales of nuts in the shell are largely limited to the holiday period, whereas those of shelled nuts are practically continuous throughout the year. The difference in labor costs in this country and abroad has made competition with the foreign product quite impossible except as cracking has been done by machinery, and only the cheaper grades of nuts used for the purpose. By encouraging good cultural practices and

FIG. 99.—California-grown almonds in process of sundrying after hulling. After this they are taken to the central packing plant, where they are bleached by sulphur fumes, graded, and placed in bags for shipment

by conducting intensive marketing campaigns, both the walnut and almond growers' organizations have endeavored to hold down to the lowest figure the quantity of nuts which have had to be cracked and have thus avoided competition with foreign cracked goods to a very large extent.

Extension of Nut Culture

Pecans and almonds have been special subjects of exploitation. Orchard lands have been sold at high prices to nonresidents mainly in distant cities, but rarely have such so-called "investments" in nut culture exploited in this manner ended in anything but grief to those whose money was involved. There is not the margin of profit in nut growing that retail prices sometimes lead the consumer to believe. Volumes could be written on this phase of the nut industry, but it is not the primary purpose of this article to discuss the

financial welfare of those who are easily induced to place their money in something concerning which they know nothing except what is told by an agent, and over which they can exercise no possible control, nor for which there is any redress in case the venture fails to make good. The whole purport of such a discourse, if indulged in, would be only to strongly advise against any such use of savings without reliable information relative to each particular enterprise.

Almond trees require somewhat less moisture than do those of the peach, but otherwise, in the same localities, they should be given practically the same treatment in the way of cultivation, pruning, spraying, and general culture. So far as known, all varieties are self-sterile, and should be so planted that interfertile varieties blossoming at the same time will be together. Almond pollen appears to be wholly dependent upon insects for transportation from flower to flower. Under similar conditions the almond trees grow to somewhat larger sizes than do ordinary varieties of peach, trunks of from 18 to 30 inches in diameter at the base and tree heights of 30 feet being not uncommon. In point of longevity the almond tree greatly exceeds the peach, as flourishing almond orchards 40 or 50 years old are not uncommon in California. Such old trees and orchards, however, are usually of inferior varieties, or else were planted too close together, and therefore, because of crowded or other conditions, bear very little. Consequently, they throw little light as to the length of time that profitable yields may be expected from superior varieties under modern methods of culture. Some have been top-worked to other varieties or even to other species, particularly to prunes, in an effort to convert the tops into something more profitable or better adapted to local environment. As a rule, almond trees come into commercial bearing at from five to eight years after being planted in orchard form.

Pecans thrive best at altitudes lower than those required by most deciduous fruits. They rarely assume importance in this country at an altitude above 2,000 feet and are seemingly best adapted to localities less than 1,000 feet above sea level. Persian walnuts and almonds enjoy a considerable range of altitude, fully equal to deciduous fruits in this respect. Both pecans and walnuts require richer soils, more moisture, greater space for development, and, as a rule, more time to reach bearing age than do deciduous fruits. Nut trees may be used for shade or ornamentation; they may be planted so as to produce both nuts and timber; and in some localities an excellent use to make of cheap but fertile land is to plant it to nut-bearing timber trees. Pecans are among the largest hardwood trees of America and represent the world's largest species under orchard cultivation. The Persian walnut tree is not as large a grower but among nut-bearing trees of this country it ranks next to the pecan in this respect. Pecan and Persian walnut trees require more time to come into commercial bearing than do those of the almond. The former usually require from 8 to 10 years for the best of the Texas varieties, and from 8 to 12 years or more for most eastern sorts. As a rule, the more precocious varieties of the East are less dependable in regularity of bearing and in filling quality, plumpness, and flavor of kernel than the choicer varieties of that

section, which require 12 or more years to become profitable. Persian walnuts require about the same length of time to give profitable yields, as do the earlier pecan varietes.

Nut Production

With certain exceptions, the three species of nuts of greatest commercial importance are produced in the States bordering upon the south Atlantic and Pacific Oceans and the Gulf of Mexico. Climate plays a more important part in the range of profitable production of these species than is popularly realized. Fruiting buds are often destroyed under conditions which otherwise do not visibly affect the welfare of the tree. Consequently most species survive under climatic conditions entirely unsuited to crop production; also, occasional crops occur well beyond the range of regular crops. The present climatic range of regular and profitable nut culture is therefore much smaller than many established facts would indicate, although this range may perhaps be increased as better adapted varieties are found and means of overcoming adverse climatic and other conditions are developed.

Pecan trees exposed to certain conditions of humidity and temperature, particularly near the limits both north and south of their successful range, are seriously subject to winter injury to the wood. Near its northern limit the forest pecan in the river bottoms is commonly regarded as being "hardy as the oak," but while northern trees sometimes bear heavy crops, average yields are so small that profit in pecan growing beyond the thirty-eighth degree of latitude is highly uncertain. The present range of greatest profit is confined to the coastal plains sections of the States bordering on the Atlantic from Norfolk, Va., south to the latitude of De Land and Orlando, Fla., and to the south of a line extending from central Georgia west to 100 miles or so beyond Fort Worth, Tex., thence southwest to San Angelo. Within this general district no one "best" locality, so far as soil and climatic condition are concerned, has become outstanding. There are, of course, obvious advantages of one section over another in matters of adaptability of varieties, transportation, nearness to markets, and living conditions, particularly with reference to educational and social advantages. As a general rule, advantages of locality are in favor of sections where nut growing has already become a matter of community interest, as it is there that new ideas quickest become common property and that mental stimulus is keenest toward further progress. Also it is to such centers that buyers are most attracted and from which orchard equipment and supplies are most likely to be obtainable.

The southern portions of the pecan range have an advantage over sections farther north in the matter of earliness of crop maturity, but this is being overcome by developing earlier varieties for more northern use and by the use of cold storage. It has been found possible under refrigeration at from 32 to 34° F. to carry pecans from one season to the next in practically unimpaired condition, thus enabling the producer, the marketing organization, or the dealer, to deliver any variety at the precise moment that it may be desired during any time of the year. Owing to the minimum need of refrigeration while being shipped, the matter of nearness to or

distance from market centers has not yet become of special importance, in so far as the pecan is concerned.

Persian walnut production on a commercial basis appears destined to be confined to the Pacific coast for some time to come, unless what now seems highly improbable should occur and varieties sufficiently hardy for eastern planting should become available. This walnut is most uncertain in its behavior and exacting as to it environment, requiring freedom from late spring or early fall frosts and sudden drops to severe temperatures following warm spells in winter. Conditions favorable to walnut growing are seldom met with outside of favored sections in California, northwestern Oregon, and western Washington, although in Idaho, Utah, Nevada, and Arizona, especially within close proximity to large bodies or streams of water, there are now some local successes. All western districts are practically on an equal footing, so far as distance from markets is concerned, with the potential advantage perhaps in favor of the immediate coast, which, by use of the Panama Canal and increased cold-storage practice, may ultimately reduce the advantage of actual distance of other districts to a minimum.

The ripening season of almonds is so far ahead of that of other nuts produced in this country that there is no difficulty in placing the fresh product in the market well in advance of other domestic species. Owing also to the small area of production and the highly centralized system of marketing, there is no practical advantage of one locality over another with reference to markets. There are, however, advantages with regard to soil and climatic conditions, particularly in so far as freedom from frost at blossoming time is concerned. Within short distances, damage to blossoms, buds, or flowers, is much greater in one locality than in another.

The Nut Nursery

As a general rule, it is unwise for the nut grower to undertake to propagate his own trees. The growing of good nursery stock is a highly specialized industry, and requires a training very different from that possessed by the average orchardist. As a result of experience, the trained nurseryman becomes able to produce trees greatly superior to those of the amateur. Nevertheless, it is to the advantage of the planter to make a study of the varieties and types of trees he should have and not leave it with the nuseryman to make the selection. He should buy only from responsible persons. As a rule, it is much more satisfactory to buy direct from the individual or concern by whom the trees are grown, rather than through an agent. Every chance for the shifting of responsibility in case of mistakes in variety or grade should be avoided. Nut trees are sold by the nurseries according to size and not by age. In light of present knowledge, pecan trees most to be desired are those which have been budded or grafted a foot or more above ground upon young, thrifty, and vigorous stock. By the time the roots are 3 years old, the tops should be from 3 to 8 or 10 feet in height. In those parts of Texas where young trees are of slow growth the average size of the most desirable trees is from 3 to 4 feet, whereas in the East it is from 4 to 6 feet.

Persian walnuts in California are commonly grafted on 1-year-old stocks of the northern California black walnut (*Juglans hindsi*). During the following season they often attain heights of 8 feet or more. Here again, for the average planter, it is wiser to avoid extremes of size. The walnut grows more rapidly than does the pecan, and, in consequence, the average size of the nursery tree becomes one of from 6 to 7 feet.

Almonds are easy to propagate in comparison with pecans and walnuts. The usual stock until recently has been that of the almond, either sweet or bitter. At present the tendency is in favor of peach stocks, which hitherto have been used only in soils slightly too moist for almond roots.

Irrespective of species, the usual precaution in caring for nut trees at transplanting time should be folowed. The roots should not be unnecessarily mutilated in digging, nor allowed to become dry. Fertile soil should always be filled in the hole about the roots, and, if dry, it should be thoroughly drenched and kept moist until the tree has started into growth. With pecans, the taproot should be cut off at from 2½ to 3½ feet below the surface. That of walnuts may be cut at from 18 to 24 inches. The almond roots are dug up practically entire.

The planting of nuts of the three species of major importance in this country in places where orchard trees are to stand, with the idea of later top-working the trees, is not considered good practice, although, theoretically, it should be possible to develop an orchard in this way. Instances are on record where this is reported to have been successfully accomplished with the pecan, but it is advisable only when the planting of nursery trees is impracticable.

Minor Nuts

In addition to the species of nuts of recognized commercial importance grown in this country, a number of others, including both native and introduced kinds, are of considerable potential value.

The Black Walnut

The most important of what may be called the secondary nut group in this country is the black walnut, a species thoroughly well known over the greater part of the country. The timber and ornamental values of this species are of recognized high order. The nut kernels are firmly established in the manufacture of taffy, cakes, bread, and ice cream, where they have no competitors from other nuts within their own particular class, either domestic or foreign. No statistics as to total production or consumption have been compiled, but a Baltimore merchant who has dealt in this commodity for many years estimates that during the fall season of 1925 approximately 1,000 barrels of kernels of about 210 pounds net were distributed from that city alone, which is the principal assembling and distributing point. The greatest production of black-walnut kernels has long been from that section of the country which includes eastern Tennessee, western North Carolina, southwestern Virginia, and southern West Virginia. In normal years the output from that district is probably greater than the total quantity handled in Baltimore during 1925.

Production thus far is almost wholly from field trees which were either left standing when the land was cleared or which have since sprung up as chance seedlings. There are, therefore, fully as wide ranges of variation in character of growth, regularity of annual crops, size, form, shell thickness, and cracking quality as in the seedlings of most other tree species. Approximately 12 of the more promising individuals of this type brought to light during the last quarter century have been propagated and disseminated by nurserymen under variety names. As such trees have come into bearing, and it has been possible to better judge their merits, a number have been discarded.

FIG. 100.—Black-walnut trees in a middle-western State grown by planting the seed in a fertile but untillable spot and top-working the resultant seedlings

Of the remaining varieties still regarded as being worthy of continued planting, the Thomas, Stabler, Ohio, and Ten Eyck are among the most promising. The Thomas is from southern Pennsylvania, the Stabler from north-central Maryland, the Ohio from the northern part of the State whose name it bears, and the Ten Eyck from middle-northern New Jersey. All have their points of excellence, but planters are finding that all are more or less subject to winter injury at latitudes but little higher than those at their places of origin. The need, therefore, is for worthy varieties from as far north as possible.

Black walnuts are chiefly cracked by the use of the hammer, and the kernels separated from the broken shells by hand. Only an insignificant proportion of the kernels is extracted in the form of perfect halves, as the great bulk appears as quarters or smaller particles. The nut kernels must be thoroughly dried before being put into close containers, as otherwise mould and decay are practically inevitable. Prices to the farmer in 1925 averaged approximately

60 cents per pound for the better grades of product. Black-walnut cracking machines of several types are now in process of evolution, but so far none are definitely upon the market. These machines are necessarily costly to manufacture, and when available in the market they will likely be designed and intended mainly for factory use.

Black-walnut planting for purposes of nut production for the present probably best be restricted to the use of fertile spots on the farm which are now not being put to otherwise profitable use (fig. 100). The species is especially suitable for roadside planting. Neither the roots of the trees nor the branches appear to interfere with the growth of grass, although there is a well-known incompatibility between the black walnut and certain kinds of shrubbery. Massey, of the Virginia Agricultural Experiment Station, reports[18] that alfalfa, tomatoes, and certain other plants have been found to perish quickly when the roots have been in contact with those of the black walnut.

The Filbert

In the Pacific Northwest the filbert is being given intensive cultural treatment, and rapid progress is being made in the development of an industry. To some extent filbert growing is being revived in the East after having been given up by earlier planters. Filbert blight, formerly regarded as an almost absolute barrier to successful culture in the East, is seldom reported. The crossing of the native hazel with the best of the European varieties is now being practiced by at least one eastern grower, and some highly promising forms have resulted. It has also been found that the failure on the part of otherwise healthy trees to bear nuts is in large part due to self-sterility of varieties and not entirely to lack of hardiness, as was formerly supposed. A considerable number of European varieties are now under test in the East.

Wherever the filbert succeeds, it is apparently the best adapted to garden planting of any species, especially where space is limited and early crops are desired. It is a comparatively small growing tree (fig. 101), an early and free bearer, no more subject to diseases and insect pests than most culitvated plants and is especially well adapted to use in chicken yards. It requires a fertile soil and good drainage, but should not be planted in land that is overly rich, as in European countries, where it has been grown for centuries, it has been found to run almost wholly to wood growth under such conditions. In planting, the trees should be spaced 20 feet each way, and varieties blossoming at the same time should be interplanted, as a great many are interfertile, while, so far as known, they are almost wholly self-sterile. Where proper varieties have not been so interplanted, pollen may be supplied by tying branches from other trees in the tops during the blossoming period. Pollinizers may be hastened into activity by holding the cut branches in a warm room for a few days. To do this successfully the stems should be placed in water both while indoors and in the tree tops.

Of scarcely less importance in filbert culture to interpollination of varieties is the matter of pruning. When young the trees should

[18] Massey, A. B., Phytopathology, vol. 15, No. 12.

be trained to single stems and grown as standards with heads of from 2 to 3 feet high. They should be pruned so as to develop symmetrical, well-balanced tops with open centers. Although it is plain that some system must be evolved for constantly renewing the wood, as nuts are usually borne only on 2-year growth, the industry in this country is still too young for definite knowledge to have been gained from practical experience as to how this should be accomplished. The English system is to twist over the young shoots during midsummer, in order to check the growth and stimulate the formation of fruiting spurs. The cutting away of these twisted branches is performed in late winter after the blossoming period is over. The leading varieties in this country are the Barcelona, Du Chilly, White Aveline, Bolwyller, and Italian Red.

FIG. 101.—Filbert trees in an orchard near Salem, Oreg.

The Chestnut

The American sweet chestnut formerly made an important contribution to the edible nut supply of the East, particularly in the mountain regions from lower New England south to northern Georgia and Alabama and west to Ohio and middle Tennessee. During recent years, however, the species has been so attacked by a bark disease that the chief problems in chestnut culture have been the establishment of present varieties in sections where there is minimum likelihood of blight infection and the development of forms resistant to that disease. The native chestnut has not yet been wholly destroyed within its natural range, as occasionally neighborhoods of trees, even within blight-affected areas, have thus far survived and "if a line should be drawn from Canadaigua, N. Y., to the southwest corner of Pennsylvania, and thence to the western edge of South Carolina, there would be found places farther west where not more than 1 per cent of the trees are infected. * * * At the

present rate of spread the blight will not complete the destruction of the native chestnut within its natural range in less than from 15 to 25 years." [17]

The most valuable varieties thus far brought out have been the results of chance hybridization of the American sweet chestnut with the European species. Planting of the earlier kinds so developed largely took place east of the Ohio River, but being highly susceptible to blight they are now seldom found. Farther west, however, in the Mississippi Valley, and again on the Pacific coast, there are isolated plantings of pure American chestnuts and of hybrid forms which are highly promising for use in future development. These plantings are in sections where the native species grows as a forest tree scantily or not at all, and where there are no near-by plantings. The danger of infection is therefore held at a minimum.

FIG. 102.—Chinese hairy chestnut (*Castanea mollissima*), Yihsien, Shantung Province, China. Seeds of this species, which is highly resistant to blight, are being brought into this country by the Department of Agriculture for planting in the hope of reestablishing a chestnut industry

The Japanese chestnut grown in the Eastern States for many years, although highly resistant to blight, is usually of low palatability except when roasted or boiled. This lack of agreeable flavor on the part of the Japanese species when raw, together with the nearly complete barrenness of the native varieties when not planted with others to ensure cross-pollination, has resulted in strong prejudice on the Pacific coast against chestnuts of all kinds. This is gradually being overcome, however, as the situation is becoming better understood.

The Chinese hairy chestnut (*Castanea mollissima*) (fig. 102) appears to offer greater value in combining blight resistance with palatability of nut than does any other chestnut now known. To a

[17] Statement by Haven Metcalf, senior pathologist in charge of forest pathology, in an office letter dated Aug. 11, 1925.

considerable extent the species is already well established in the Eastern States. The Department of Agriculture, through the Office of Foreign Seed and Plant Introduction, is taking active steps to import large quantities of seed from northern China, with a view to its establishment in the blight areas.

The Hickories

The hickories offer greater possibilities to nut growers than is commonly supposed, despite the usual slow rate of growth of most species. A considerable number of promising varieties is now available through scions from selected seedling trees and from young grafted trees in the nursery. The grafting over of a seedling hickory top with scions of a superior kind, as is being done with other species, often gives surprising results. Such trees frequently come into bearing within three or four years. A majority of the more promising forms are either varieties of pure shagbarks (*Hicoria ovata*), or hybrids between two species of hickory, usually including the shagbark as one parent.

The Japanese Walnut

The Japanese walnut has been widely disseminated over the country during the last half century and is by no means uncommon, yet to a great extent the species is either unrecognized altogether or confused with the Persian walnut, an entirely different species. It is generally successful wherever the black walnut succeeds, but it is not entirely hardy, even at mild latitudes. Its future field of usefulness appears likely to be largely confined to garden and decorative planting. For this purpose several choice varieties can now be had from the nurserymen.

The Butternut

The butternut thus far is practically an uncultivated species. Its range is much the same as that of the black walnut, differing from it mainly by extending farther north by perhaps 200 miles and not so far south by about the same distance. It is seldom found in thick stands in the forests, and has nowhere been planted to an important extent. A few recognized varieties are being propagated by the nurserymen.

The Pine Nuts

In the West and Southwest there are a number of edible pines, from which, in productive years, the crops are of great value. The most important of these is the piñon (*Pinus edulis*) of southern Colorado, southern Nevada, northern Arizona, and northern New Mexico. The product is entirely from uncultivated mountain trees found at altitudes of from 5,000 to 9,000 feet, and which seldom bear heavy crops oftener than once in from five to seven years. The gathering, selling, and, recently, the shelling of these nuts by newly devised machinery form a business of no considerable importance.

The Pistache

The pistache nut is grown to some extent in favorable localities of the far West and Southwest. It is a familiar product in confections, where it is of chief use for coloring purposes and as a source of an agreeable, mild flavor. Under cultivation it succeeds only in warm, dry sections. Its production in this country is not yet important.

The Coconut

Coconut growing is confined to limited areas in the warmer parts of the country. It is not an industry of importance in the continental United States, being restricted to a few fairly large plantings and numerous scattered trees near the lower tip of Florida. The nuts produced are largely consumed locally by winter tourists, without assuming to enter the general market.

Miscellaneous Nuts

The Brazil nut (*Bertholletia excelsa*), the pili (*Canarium* sp.), and the lychee (*Litchi* sp.) (not strictly a nut), are not hardy in any part of the country. The cashew (*Anacardium occidentale*), and the Queensland nut (*Macadamia ternifolia*), are occasionally met with in Florida or southern California.

Insular Nut Production

Nut production in the Philippine Islands is largely confined to the coconut and the pili nut. The value of the coconut, together with its various by-products, is second in importance of all agricultural products from the islands. The greater portion of the nuts is consumed by the natives. The average yearly exports of all coconut products during the calendar years of 1922, 1923, and 1924 was slightly less than $37,000,000.

The pili is a highly ornamental, but almost wholly uncultivated tree; it attains a height of approximately 50 feet. The quality of the nuts is held by many persons long familiar with them to be equal to that of any other in the world's market. There are several species, but the nuts alone can not be distinguished. Exports of pili nuts from the Philippine Islands amount to very little as native methods of harvesting and curing preclude safe shipment without loss by spoiling.

Nut growing in the Hawaiian Islands is thus far confined to small numbers of trees on the grounds of the Agricultural Experiment Station at Honolulu. Elsewhere, American insular nut production is of minor importance

Geographical Distribution of the Vegetable Industry

Climate and weather, soil types, transportation, and a large number of economic factors have largely determined the present geographical distribution of the vegetable industry. It would be difficult, indeed, to determine which of the above factors has been the most important in determining the development of the vegetable industry as a whole. In the case of the individual crops, however, one

or two factors have, as a rule, been outstanding in the control of the distribution and development of that particular crop. Climate and weather are, without doubt, the most important of the natural agencies and it is significant that they are largely beyond man's control except occasionally where special methods of crop protection have been employed. The character of the soil has to a considerable degree determined the distribution of certain vegetable crop production, but the successful gardener can very materially change the nature of the soil, thus adapting it to the special needs of a given crop. From the economic standpoint transportation and market demand have ever been the important limiting factors in the development of the whole vegetable industry, and numerous failures have resulted from a disregard for the proper relationships between production and consumption.

Length of growing season.—With many crops the length of the growing season has been the important determining factor in their development in a particular locality. The location of the greater portion of the commercial sweet-potato industry in the Southern States and the more favored portions of the Central and Eastern States is not an accident but is due primarily to the fact that these regions have a longer growing season with warm nights and an abundance of sunshine and moisture. The sweet potato being subtropical in nature requires not only a long season but a relatively high average temperature. On the other hand the potato industry has developed to a greater extent in the northern sections of the country where the growing season is relatively short with a somewhat lower average temperature. Many of the short-season or quick-maturing vegetable crops, such as cabbage, turnips, kale, spinach, celery, lettuce, potatoes, beans, and onions, are adapted for growing well to the northward, whereas tomatoes, peppers, eggplant, melons, and sweet potatoes require a relatively longer season and are, therefore, adapted mainly for growing in the central and southern sections where the growing season is longer and the average temperature relatively high.

Temperature and humidity.—Humidity, especially when considered in relation to temperature, has played an important part in determining the geographical distribution of the vegetable industry. Humidity not only determines to a considerable degree the adaptability of a crop to a given section, but plays an important part in the control of diseases that affect the various crops. Distribution of rainfall has been one of the most important factors in promoting or retarding the development of the vegetable industry throughout the eastern and southern portions of the country during the past and it is only within recent years that this limitation has been overcome to any extent in the eastern and southern sections through the use of overhead or other forms of irrigation. The development of the large vegetable-growing enterprises such as that of muskmelons and lettuce in the western part of the country has been made possible through irrigation. This section is especially adapted to the growing of certain crops which naturally thrive under relatively dry atmospheric conditions provided sufficient moisture is supplied to their roots.

Temperature, under all conditions, is an important determining factor, each crop having its ideal or optimum temperature require-

ments. Certain crops such as cabbage, kale, spinach, celery, lettuce, beets, carrots, and turnips can withstand considerable frost at certain stages of their growth. In fact, practically all of these crops find their ideal growing conditions at a relatively low average temperature. Others, including tomatoes, peppers, eggplant, beans, and all of the vine crops are easily injured by frost and find their optimum growing conditions at relatively higher temperatures than required for the other class of vegetables. Following the trend of development of all of our important vegetable enterprises their progress can be largely traced along the lines of temperature and humidity limitations.

Topography and elevation.—The geographical distribution of the various vegetable crops has been influenced to a considerable degree by the topography and elevation both relative and actual. For example, lettuce can be grown to advantage between an elevation of 5,000 and 11,000 feet in certain parts of Colorado and at sea level or even below sea level in the Imperial Valley of California. The high elevation in Colorado provides temperature conditions suitable to the production of lettuce from June to November, whereas the low elevation and location of the Imperial Valley provides the proper temperature conditions during the winter months, at which time there is a heavy demand for the product. Vegetable production in these extreme ranges of elevation is possible only for short-season crops which are capable of maturity within the period of ideal temperature conditions. In locations where elevation controls temperature and where artificial water supply can be obtained, ideal conditions are created for the production of the short-season low-temperature crops. Similar conditions are often found in the narrow mountain valleys where the nights are relatively cool and the general climatic conditions are influenced by the near-by mountains.

Influence of streams and bodies of water.—The location of vegetable-growing enterprises have frequently been determined by streams and large bodies of water which have an important influence upon the climate and weather of the adjoining country because of their stabilizing effect upon both the temperature and humidity. A notable example of this is found in the region of the Great Lakes where a difference of 10 or 12° in temperature, or two weeks in the date of the earliest fall frost, is found within an area extending several miles from the lakes. The Japan current has a similar influence upon the western coast of the whole North American continent. The waters of the Gulf of Mexico and the Gulf Stream modify the entire climate of the Gulf coast and of the Atlantic coast region, the influence of the Gulf Stream extending as far north as the New England States and eastern Canada. The climatic conditions of the trucking areas around Providence, R. I., and Boston, Mass., are greatly influenced by the Gulf Stream, thus making it possible to grow vegetables in that region both early and late in competition with sections much farther southward.

Distribution of the vegetable industry as influenced by irrigation.—The reclamation of large areas of the arid sections of the West has been one of the most important factors in the location and development of some of the largest vegetable enterprises of the country. This is especially true of the lettuce and muskmelon industry of the Imperial Valley of California and similar industries

in Colorado and Arizona and the Bermuda onion industry along the Rio Grande River in southwestern Texas. Vegetable production in these sections would be utterly impossible without the aid of irrigation. Irrigation of various types, including the overhead or sprinkler system, has had a marked effect upon the development of the vegetable industry in certain portions of the country where there is a natural or poorly-distributed rainfall. Irrigation in the so-called humid sections has taken the form of crop insurance rather than an absolute necessity as is the case in the western arid areas.

Action of winds.—That the direction and force of winds should play an important part in determining the geographical distribution of certain types of the vegetable production doubtless seems strange to the average person, but as a matter of fact winds not only determine to a marked degree the temperature and rainfall of a given locality but the winds themselves have in many cases limited the

FIG. 103.—Hedges used to protect vegetable crops from winds

planting of certain crops owing to the blowing of the soil. This has been particularly true of the regions having sandy soils and of the muck soils of the Northeastern States. The blowing of sandy soils has made it impossible to grow many of the more tender crops upon them especially during the spring of the year. A similar conditions exists on the muck and light loam soils owing to the blowing away of the surface soil, leaving the seeds or the roots of the young seedlings exposed. Various methods have been employed to overcome this difficulty, including the flooding of the surface in sections where surface irrigation is practiced; the use of overhead or sprinkler irrigation to control the blowing of the muck and sandy soils, and in the erection of barriers to break the force of the winds. These barriers may consist of fences or more often of evergreen hedges or belts of growing pines or trees of some character (fig. 103). It has been found impossible, however, to plant certain crops

such as onions and lettuce on many of the muck areas on account of the inability to control the blowing of the soil. In other cases, the growing of certain of the vegetable crops has been influenced by the actual destruction of the crops themselves by hot winds or by the actual force of the wind.

Other factors of climate and weather that greatly influence the location of vegetable enterprises are clearness of the atmosphere, prevalence of sunshine, and the uniform distribution of rainfall. Among the artificial means employed for overcoming nature's deficiencies should be mentioned the large vegetable-forcing industry of the Northeastern States. Here, as in other cases, man has taken advantage of what nature has offered and has supplemented these advantages by the addition of the unnatural to the end that he has been enabled to produce certain crops in season and out of season and on a scale that is comparable with outdoor production in localities more removed from the larger markets. Local factors, such as proximity to large industrial plants which give off great volumes of smoke and gases that are injurious to plant growth, have to a certain degree been determining factors in limiting the distribution of the vegetable industry. These influences, however, are of minor importance as compared with the length of the growing season, average temperatures, humidity, and rainfall, influence of ocean currents and large bodies of water, and the action of prevailing and local winds.

Influence of Soil Types

Soil types, second to climatic conditions, have been the most important factor in determining the geographical distribution of the vegetable industry. It is singular that desirable soil types and suitable climatic conditions are frequently linked together as is the case along the Atlantic coast from Boston southward, in the Gulf coast and southern Texas regions, in the Imperial Valley of California, in the Puget Sound district, and in the region bordering the Great Lakes. Throughout the entire country striking instances are to be found where the establishment of large vegetable-growing activities have been made possible because of this splendid combination of soil and climatic conditions.

Four general soil types have played an important part in the development and distribution of the vegetable industry, these being the sandy loams, the clay loams, the alluvial or silt soils, and the peat soils. The pioneer development of the vegetable industry was mainly on the sandy loam soils of the Atlantic coast and the clay loam soils of the New England and near-by Eastern States. The early development of the southern vegetable production for northern markets was on the sandy loam soils of the Atlantic coast and on the alluvial soils of the lower Mississippi Valley. Later came the development of vegetable production on the peat areas of the Great Lakes' region and in Florida. With the reclamation of the sandy, silt loam soils and the alluvial soils of a clay-loam nature, through irrigation projects, some of the largest vegetable-growing enterprises of the United States have been developed in southern Texas, California, Colorado, and other Western States. Although irrigation has been the key to unlocking vast resources of these arid or semi-arid regions, the development of particular vegetable industries

has been closely allied with soil types, and the adaptability of the soil to the growing of the various crops has been one of the most important factors in their geographical distribution.

Influence of soil upon the growth of certain of the vegetable crops is truly remarkable. As for example, a very slight difference in the lime content or the moisture-holding capacity of a soil may determine success or failure in the growing of highly specialized crops, such as celery, spinach, or lettuce. As a general rule, the adaptability of the soil in the different localities for the growing of the various crops, has been determined by accident, as for example, in the case of the Bermuda onion industry (fig. 104), from a 2-ounce packet of seed sent by a friend to T. C. Nye, a ranch owner near Cotulla, Tex. The seed was planted and irrigated from a well, and the small trial proved so successful that Mr. Nye obtained a larger quantity

FIG. 104.—Bermuda onions near Loredo, Tex. This soil is a silt loam and quite fertile under irrigation

of seed the following year and tried the experiment on a more extensive scale. Out of this small beginning grew the great Bermuda onion industry of Texas, Louisiana, California, and other Southern and Western States.

The adaptability of the soil of the Sanford district and elsewhere in Florida for celery growing resulted from a trial that was almost accidental in its inception (fig. 105). The same was true of the lettuce industry of the Imperial Valley of California and in the high altitude regions of Colorado.

The physical characters of the sandy loam soils, which enable them to be worked early in the spring, have been an important factor in the distribution of early vegetable production. This holds true in practically every section where the sandy loam soils abound and where suitable climatic conditions are found. From the standpoint of ease of culture and quick response to treatment, the sandy loam

soils and the muck soils are in the lead. On the other hand, these soils are in many cases not so retentive of plant-food elements as the silt loam and clay soils, and, therefore, have their limitations from a vegetable production standpoint.

The adaptability of peat soils having an alkaline or lime reaction for growing vegetables was discovered by the Hollanders of the Kalamazoo, Mich., section who used peat soil in their hotbeds and coldframes for starting early plants. To-day thousands of acres of peat soils have been reclaimed, and are now devoted to the profitable production of vegetable crops.

FIG. 105.—Field of celery near Sanford, Fla., on soil of a sandy peat character

In all, the natural character of soils, while subject to modification, has proved a very important factor in the evolution of the vegetable industry and in the determination of its geographical distribution.

Peat soils.—The glaciation of the large portion of the central eastern section of the country, chiefly in the region of the Great Lakes, left depressions where lakes and swamps were formed and where ideal conditions arose for the growth and later the accummulation and preservation of the remains of grasses, trees, shrubs, and other vegetation, and is the direct cause of the millions of acres of high-grade peat and muck in Minnesota, Wisconsin, Michigan, Indiana, Illinois, Ohio, New York, and other States in this region. The settling of the sea coast, the change in the beds of streams, the choking of river channels causing the inundation of flat areas are largely responsible for the enormous peat and muck areas along the Atlantic coast, in the Gulf coast region and other sea coast regions.

Organic soil, referred to as peat and muck, is of especial excellence for the growing of vegetable crops, including onions, cabbage, celery, lettuce, carrots, potatoes, sweet corn, turnips, beets, cauliflower, and many others. This soil is also adapted to many other field and truck crops which are suitable for the climatic conditions found in various

peat-soil regions. Owing to their origin from the partial decay of plants which accumulated where they were covered or at least saturated with water, this soil type is rich in certain elements but deficient in others and it requires careful reclamation and proper management including rational fertilization to make peat soils suitable for vegetable production. Under favorable circumstances peat soil will produce maximum yields of many of the more important vegetable crops. What is said to be the world's record production of potatoes, amounting to 962½ bushels per acre, was grown on California peat soil. Yields of 500 to 700 crates of celery, 800 or more bushels of onions, 600 to 800 crates of lettuce, 20 to 25 tons of cabbage and correspondingly large yields of other vegetables are often obtained on good peat soil. (Fig. 106.)

The distribution of large peat-soil areas in the Gulf coast and Atlantic seaboard regions and in a broad belt from the New England States westward to the Mississippi, paralleling the main transportation arteries and within short distance of the large centers of population of the country has exercised a profound effect on vegetable production. Peat-soil areas are so great in extent that normal needs for vegetables adapted to these lands can be cared for on a very

FIG. 106.—Peat areas of great extent are utilized for the production of celery, onions, lettuce, and other vegetables

small percentage of the available area of organic soils. In fact, the return from such crops should be carefully weighed against the cost of reclamation and annual maintainance before their utilization is undertaken. In the past, reclamation has often proceeded faster than economic conditions justified. Many sections have large areas of improved peat soil which can be used only for highly intensive high-value crops as none other could pay the capital charges placed on the land through reclamation. Present market demand is often insufficient to justify the growth of these vegetables.

Peat-soil vegetable production is a nation-wide industry and if developed in accordance with sound business principles, devoting only such acreage to crops as market demands justify, it is sure to continue to exercise a profound and increasing influence on the development of the vegetable industry.

Economic Factors Governing the Development of Vegetable Production

Necessity for the production of food and its relationship to the well-being of the early settlers in America was the primary economic factor in the original development of vegetable growing in this country. In the beginning, home gardens were unquestionably the basic economic factor in production and the colonists planted and tended gardens in order to supplement the meat diet of their families which was obtained through hunting. When the first settlers came to America they met with living conditions that were new to them and were unable either to live according to the standards of the country from whence they came or to conform to the living methods of the Indians. They found the Indians growing certain crops which they themselves failed to grow when they attempted to cultivate them and it was not until they were taught by the Indians how to plant and tend these crops that success attended their efforts. As the country became more settled there developed limited activities in market gardening and the sale of the products to the people who either began to concentrate in the towns and villages or who were so engaged in other pursuits that they did not have the time or inclination to grow their own supply of vegetables. At first the gardens were confined mainly to such crops as corn, squashes, and beans, all of which were native of this country, to which was added peas, onions, melons, the root crops, and other vegetables brought from the old country. The market gardener hauled or carried his vegetables to town and sold them direct to the consumer either on a market or by peddling them from house to house. This phase of market gardening exists to some extent in many sections to-day, but has been largely replaced by the truck farm which is usually located at a greater distance from the markets, the produce being handled mainly through commission houses and dealers.

Commercial vegetable production in America has developed in definite relation to the consumption of the various commodities. This relationship has been more or less disturbed during certain periods but in the main the growth of vegetable production and the increase of total population have been in direct proportion. The adoption of labor-saving devices has so increased the per capita production on vegetable farms as to change the percentage ratio between producers and nonproducers. The production of vegetable crops is especially subject to variation in yields, owing to weather and other causes, furthermore an increase of 10 per cent in yield of certain crops serves to throw the relationship of production to consumption out of balance temporarily. The concentration of population in industrial centers has had an important economic influence upon vegetable production especially as regards land values, labor supply, and transportation.

Among other economic factors that have influenced the development of the vegetable industry in the United States has been the improvement in methods of production whereby a relatively small number of persons are able to produce the food crops required by the mass of the population. Present relationships between vegetable production and consumption would be impossible without adequate transportation facilities. The growing and marketing of approximately 21,000 carloads of California lettuce in 1925, would have been a physical impossibility without the connecting railroads with their specialized refrigerator service. It is a question if transportation has not played an even greater part in the economic development of the vegetable industry than have soil and climate. Transportation in all of its phases has become the important connecting link in the whole economics of vegetable production.

It would be well at this point to call the readers' attention to the important part that has been played in the economic development of the vegetable industry by those pioneers of horticulture and plant breeders who have given freely of their time and means to the development of new and improved varieties of vegetables. Not only were the native vegetables grown by the Indians improved upon in the early days, but other native wild species were placed under cultivation and improved. The best of the Old World species were sought out and brought to America from time to time and from them were evolved new varieties better adapted to American conditions. The credit for introducing the improved varieties is largely due the early seed growers and dealers. Throughout the history of the vegetable industry in the United States the seed trade has played an important part, both in the development and introduction of improved varieties.

No crop-production industry is more subject to the operation of economic laws than that of vegetable growing. Bulky vegetables such as potatoes, cabbage, or spinach can be transported only within definite distances before the packing and haulage costs equal the market value of the product. The production of crops of this character is thereby limited to sections where economic conditions are the most favorable. Outdoor winter vegetable production is dependent on suitable climatic conditions, suitable soil, labor, and dependable transportation at a cost that is justified by the returns.

Evolution of the Vegetable Industry

Dating from the second visit of Columbus to America, vegetable growing in this country has undergone constant expansion and progress. Home gardens played an important part during the early days, but the progress was relatively slow until about 1800; then came a period of about 30 years which was characterized by rapid development of the vegetable industry. Following this the industry made rather steady progress until about 1880, when there again appeared an era of rapid development covering about 12 or 15 years. Owing to financial and other limitations immediately following this period the expansion was not so rapid until about 1907 or 1908, at which time there began a rapid development which has extended until the present. It was during this latter period that there oc-

curred the greatest concentration of population in industrial centers located mainly in the eastern part of the United States. It was also during that period that there occurred great improvement in the method of production, enabling less than one-third of the population to produce all of the raw food supplies required by the entire people.

In the evolution of the vegetable industry, it has passed from the home-garden stage through the period of market gardening, truck gardening, and truck farming. While all of these factors exist in natural proportions to-day, vegetable gardening has passed to a considerable degree to specialized production, including large outdoor industries as illustrated in the lettuce and muskmelon production in the Imperial Valley of California, the Bermuda onion industry of southwestern Texas and other sections, and the early tomato and celery production of Florida. These are but examples taken from the many illustrations that might be given. Among the most outstanding of the specialized production practices are those of early vegetable growing in the extreme South during the winter, and the greenhouse vegetable industry of the Northern States. Formerly, people were content with fresh vegetables in their season, but at present our markets are well supplied with fresh vegetables during every month of the year.

The geographical range of early production begins in Mexico and the West Indies and terminates in Canada. No sooner have fresh vegetables, grown in the northern sections, ceased to be plentiful on our markets until they are replaced with the southern-grown products, and the distribution cycle of perishable vegetables is now continuous.

During the last 30 years there has been developed a great vegetable-forcing industry, especially in the Northeastern States, which adds an important factor to the winter or out-of-season production of certain vegetables. Although the actual glass inclosed area devoted to winter vegetable growing is relatively small as compared with field culture, the investment in this branch of the industry runs well into the millions, and owing to the intensive cultural methods employed, the products are reckoned in hundreds of tons and in carloads. Supplementing the estimated 1,000 to 1,200 acres of vegetable-forcing houses there is a large acreage of unheated, sash-covered frames which are used for growing vegetables during the late fall and early spring months.

It has been estimated that the same quantity of coal burned in locomotives is required to haul the vegetables grown on an acre in southern Texas to the eastern markets as is necessary to heat an acre of vegetable-forcing houses located near the markets. The winter or out-of-season production of vegetables has numerous limitations which necessitate relatively high market prices in order to make this class of production profitable.

Special Types of Vegetable Production

Vegetable growers from the earliest times devoted thought and energy toward lengthening the season during which fresh vegetables were available. Pliny, writing about 80 A. D., notes that Antonius Muse, a physician, cured the Emperor Augustus Caesar of a danger-

ous disease by means of lettuces, which circumstance seems to have brought lettuces into esteem at Rome, after which there was no doubt about eating them and men began to devise means of growing them at all seasons of the year. Pliny also records a method for the preservation of Globe artichokes in vinegar and honey in order to have this vegetable during times when it could not be grown outdoors. Records show efforts of the Greeks and Romans to increase the variety of their diet by bringing the artichoke from the coast of Africa. In these practices are found the beginning of the forcing, preservation, and transportation systems of to-day by which our daily markets are supplied with fresh products often grown hundreds of miles from the consumer in locations particularly suitable for their growth.

The constantly growing and increasingly exacting demands for a steady, moderate-priced, high-quality supply of fresh vegetables irrespective of season or weather conditions led to the development of special types of production. The use of protective and forcing devices such as plant protectors, coldframes, hotbeds, and greenhouses have made it possible to extend the growing season or to produce tender vegetables for market in sections where weather conditions at the particular season would otherwise make such results impossible. The value of the vegetables produced annually through the aid of these special means amounts to many millions of dollars. The other important means of supplying our markets with out-of-season vegetables is through their production in warm sections and shipment by rail or water, usually under refrigeration, to markets often hundreds of miles distant.

The vegetable-forcing industry.—In the broad sense vegetable forcing may be considered as the lengthening of the growing season, or the production of vegetable crops out of regular season through the use of protective devices whereby growing conditions may be controlled. It is difficult to estimate the importance and far-reaching effects of the different phases of vegetable forcing. The production of early crops in coldframes, the growing of vegetable plants in hotbeds and greenhouses, the protection of plants in the field from frost and cold winds, as well as the growing of crops of lettuce, tomatoes, cucumbers, radishes, and other vegetables to edible maturity in the greenhouses may all properly be included. It is impossible to place an accurate estimate upon the value of plants started in protective devices or upon the value of the crop produced through the use of protective coverings during the early stages of their growth, whose production would otherwise be impossible.

The frame industry, an important phase of vegetable forcing, has developed in sections favored with an abundance of sunshine at all seasons of the year, and at the same time their climate, because of the influence of large streams or bodies of water, is mild and free from extremes of temperature. In such localities it would be possible to grow hardy crops such as lettuce during the entire winter without protection, were it not for a few cold days and nights. A very slight covering or the application of a small amount of heat, will as a rule carry the plants through in good condition. The Atlantic coast region, especially in Virginia and North Carolina, has a large and important frame industry, usually conducted in

connection with the growing of truck crops in the field during summer. Production from a comparatively small area often brings good returns, shipments from the important frame centers commonly being of a car-lot character. The frame industry is one of the interesting specialties of vegetable production (fig. 107).

Forcing house production.—Hothouse production of vegetables in the colder parts of the country near the larger consuming centers has become an important industry with an important economic bearing on total production. Glass area is now calculated in acres and the capital invested is reckoned in the millions (figs. 108 and 109). The products of the forcing industry come into strong competition with those grown in the open at points thousands of miles from the consuming centers.

Winter and special types of outdoor production.—Efforts to supply the markets with fresh tomatoes, lettuce, celery, and other popular

FIG. 107.—In certain sections where the climate is mild, but where freezing weather occurs, large quantities of crops are brought to early maturity through the aid of sash-covered frames

vegetables during all months of the year have led to the development of great production industries in sections where climatic conditions during certain months make the growing of these crops possible. This type of vegetable growing is carried on in regions where vegetables for distant winter markets can be produced; also in favored sections such as mountain regions where summer weather is suitable for the growing of such crops as lettuce, which will not withstand excessive heat.

The great cropping system which has gradually evolved itself to meet the needs of the markets gives us lettuce from Florida, California, and elsewhere, during winter and early spring. Atlantic Coast and Great Lake States are sources of supply during spring and early summer. Rocky Mountain and Pacific coast regions contribute to the needs of the markets during summer and late autumn.

Celery is available during winter and spring from Florida and California. Summer and fall supplies come from Northern States. Storage supplies from these fields are available for the holiday season overlapping those received from southern and western sources. Tomatoes are available the year round, winter and spring supplies coming from Cuba, Mexico, southern California, Texas, Mississippi, Florida, and elsewhere. With these and other truck crops a steady succession from favored producing sections is available and it is impossible to estimate the value of the industry to the public. From a monetary point of view, it is very important, but the real value of the product in the diet is perhaps even more difficult to evaluate.

Bulky vegetables such as potatoes, cabbage, or spinach can be transported only definite distances before the packing and haulage costs equal the market value of the product. The production of crops

FIG. 108.—The modern greenhouse range is in reality a field covered and inclosed by glass. The view shows almost 10 acres of continuous greenhouse roof

of this character is thereby limited to sections where economic conditions are the most favorable. Winter truck-crop production is dependent on suitable climatic conditions, good soil, labor, and good transportation at costs justified by the value of the vegetables. Prices are usually determined by production costs in localities where the work can be carried on in the most economical manner.

Vegetable Growing in Greenhouses

Vegetable forcing is an ancient art, as the Romans employed forcing devices for the production of cucumbers, lettuce, and other plants out of their regular outdoor season. Apparently, Roman knowledge of forcing devices and forcing crops was carried to England, and it is generally supposed that greenhouses were in use

in that country as early as the seventeenth century. These structures were probably nothing more than ordinary buildings with glass sides, as it is quite certain that no regular structures roofed with glass and provided with artificial heat were in use in England until the early part of the eighteenth century.

In an article published in the Florists' Exchange in 1895, by L. H. Bailey, are found some notes regarding the early history of greenhouses in this country. According to this authority, it is probable that the first glass house erected in this country was built in Boston by Andrew Faneuil, who died in 1737. This gentleman was an uncle of Peter Faneuil, who built the famous Faneuil Hall.

FIG. 109.—The modern greenhouse is in reality an inclosed area where the intensive culture of crops can be carried on irrespective of weather conditions. The land is plowed and often fitted with horse tools or with tractors. Heavy applications of manure and other forms of plant food are necessary to replace the heavy drain on soil fertility owing to the continuous cultivation practiced

However, the greenhouse which is commonly considered to be the first one built in this country, was erected in 1764 in New York for James Beekman. By the beginning of the next century knowledge of greenhouses was apparently well disseminated for both Gardiner and Hepburn in 1804 and M'Mahon in 1806, give full descriptions of greenhouses and other production and forcing devices as built in those days. In Doctor Hosack's Botanic Garden in 1801, extensive glass houses were erected. M'Mahon's discussions of forcing structures as erected in his time are especially interesting. His book published in 1806 is of special value as he gives descriptions for the forcing of cucumbers and beans in the hothouse. It is believed that this is the first record of the actual forcing or bringing to maturity of vegetable crops in this country.

The greenhouse of M'Mahon's day was merely a structure fronted with glass without artificial heat for the protection of plants too tender to overwinter out of doors. The hothouses as described by this author were of similar construction but usually with at least a part of the roof of glass and heated with flues or by fermenting material placed in pits under the beds, bark being the substance ordinarily employed for the purpose. All of these early structures were modeled after ordinary building construction; indeed in some cases rooms were built above the greenhouse or hothouse in order to protect them from frost. This type of construction allowed light to enter the building only through side and sometimes end windows. In all cases the glass was carried in sash rather than being set in permanent sash bars as is now the case, the development of sash-bar type of construction being a thing of much later date. All early hothouses depended on flues or fermenting material for heat, as the use of steam in closed circuits developed in England about 1820. Curiously enough the use of hot water for heating forcing structures was a later development. The New England Farmer, June 1, 1831, contains descriptions of a hot-water heating plant for a greenhouse, this being a great novelty and apparently an entirely new practice.

Forcing structures built in this country during early periods were constructed of masonry, and heavy timbers to support the sash carrying the glass. The flue heater was the usual device used, but upon the introduction of gravity-circulation hot-water systems after 1830, these gradually superseded the flue heater, especially in higher grade greenhouses and conservatories. In an article written by William Saunders, which appeared in the Yearbook of the United States Department of Agriculture for 1897, an interesting note relative to the introduction of the sash-bar type of greenhouse appears. A quotation from this article follows:

> All the glasshouses are constructed upon the fixed roof plan, consisting of skeleton framework supporting a series of light sash bars for holding glass. This method is not only cheaper than the plan of heavy rafters supporting framed sashes, but by using less woodwork, there is less shade and more light to the plants. Since the introduction of this method of building by the writer in 1850, together with the mode of glazing adopted, no other kind of roofing is used. The ordinary way of glazing window sashes is to set in the glass, fasten it with triangular bits of tin, then fill the outer surface of the sash bar with putty.

All greenhouses built previous to the latter part of the nineteenth century were for general use, as the specialized house suitable for specific crops did not begin to develop until about this time. The forcing of lettuce in greenhouses developed in the Boston, Mass., area during the early eighties and special-type houses suitable for vegetable production soon came into use. From that period until the present there has been a steady development of special structures especially suited to the needs of the various products being produced. The advancement made in equipping modern greenhouses for specific uses has been as marked as has the construction of the buildings themselves. The present-day vegetable house is in reality a structure inclosing an area of ground often acres in extent, where conditions are maintained for the out-of-season growing of tomatoes, cucumbers, lettuce, or other vegetable crops.

Different types of construction are used, but all characterized by the same principles, that is, the structures are of light but strong construction, being in many cases as much as 95 per cent glass, the aim of the designer being the admission of a maximum amount of light with as little shade as possible. The old-time idea of a heavy framework supporting sash has long since been abandoned for any save the most temporary type of structure. Steel has largely replaced wood, as much smaller parts can be used and less interference offered to the passage of light. At the present time houses or combinations of houses inclosing several acres in one large area

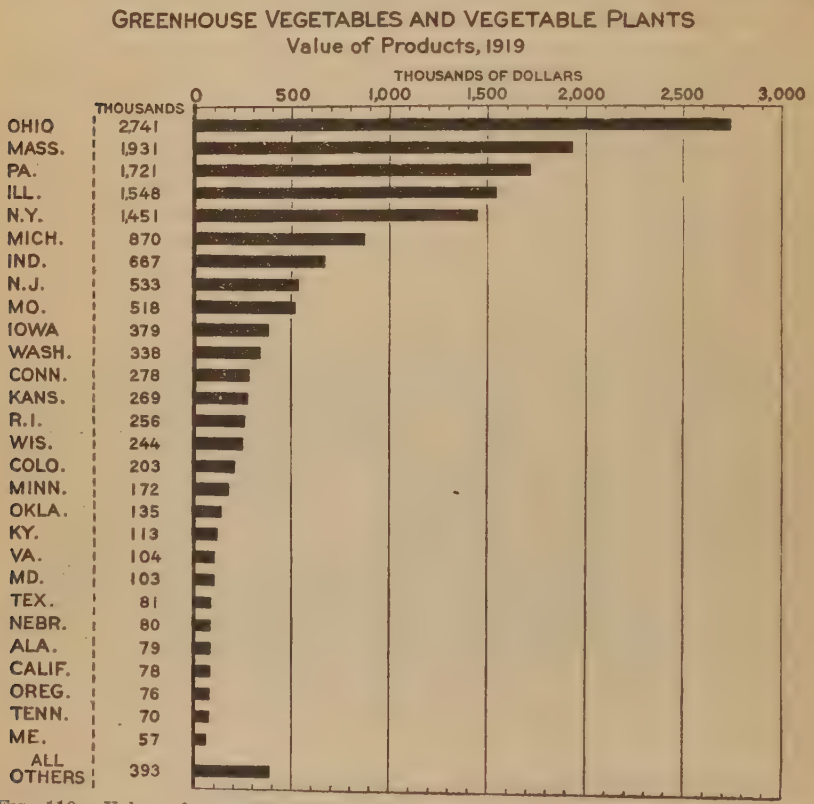


FIG. 110.—Value of greenhouse vegetables and vegetable plants produced in 1919 as shown by census figures

as shown in figures 108 and 109 are in use with entirely satisfactory results. Glass farming is no longer an industry involving the use of very small areas as we have individual ranges covering 10 acres or more of land.

Previous to 1890, the forcing of vegetable crops in the greenhouse was a relatively unimportant industry. According to the 1920 census the value of vegetable products grown in forcing structures and in greenhouses amounted to about $15,500,000. The average gross value per acre of all greenhouse crops for that year was about $20,000. This includes both floral and vegetable products, and it is probable that the acreage value of the vegetable products is some-

what less than this amount per acre. However, the data shows that a large area is covered by greenhouses devoted to the growing of winter vegetable crops. Figure 110 shows the value of greenhouse products by States in 1919.

The development of this great industry has been due to a number of factors. The marked excellence of certain greenhouse products such as tomatoes, cucumbers, radishes, cauliflower, and others has given rise to a strong demand for these vegetables, and has made it possible to produce and sell them in competition with the same class of plants grown in warmer sections of the country and shipped long distances to market. Although it requires from 200 to 500 tons of coal to maintain an acre of greenhouse space at suitable temperature for the season, and other heavy expenses are also involved, the census figures show that the gross return per acre is several times that

FIG. 111.—Lettuce is produced on an acreage basis in forcing structures, many of which cover several acres. The owner of this range of greenhouses in Ohio is able to harvest and handle the lettuce with a minimum amount of labor

obtained from most intensive outdoor-vegetable production. The charges for greenhouses and their upkeep, labor costs, fuel, and other items of expense, are to a large extent balanced by heavy transportation costs from points often 2,000 to 3,000 miles distant and by the fact that the greenhouse grower of tomatoes and other vegetables is often able to place a severe handicap on shipped material through the production of a high-quality food product which can be marketed within a few hours from the time it is harvested.

Cultural methods followed are naturally of the most intensive character. Owing to the heavy expense necessary to maintain greenhouse space under suitable growing conditions, it is essential that this be utilized to the fullest extent. The land must produce crops over the greatest possible portion of the year. Naturally, greenhouses are not adapted to vegetable growing during a part of the summer, but fall, winter, spring, and early summer are fully occupied by

succession crops, it being a common practice to secure three or four vegetable crops each season. Plans are so carefully worked out that the land is often prepared and planted the same day that the preceding crop is removed. Figure 111, showing a harvesting scene in a large middle western vegetable range, gives a very good idea of the methods followed in harvesting and planting lettuce.

Much time can be saved in bringing a greenhouse vegetable crop to maturity by starting the plants in a separate place and bringing them as far along as possible before they are placed in the house where the crop is to be grown. From three to six weeks of the crop period for lettuce can be spent in the plant house. The same is true of tomatoes and cucumbers. Figure 112 shows the interior of a greenhouse containing tomatoes grown for their fruit.

FIG. 112.—The tomato is an important and popular greenhouse crop. To conserve and obtain maximum yields the plants are trimmed and tied to supports. Yields of 10 to 12 pounds per plant are often obtained

In order to take full advantage of all of the greenhouse space such crops as tomatoes and cucumbers are trained to stakes, wires, or other forms of support, this plan making it possible to set the plants close together, thereby procuring a maximum yield per unit of area. Figure 113 shows the interior of a house containing over an acre planted to cucumbers and trained in this manner.

Greenhouse vegetable products are harvested, packed, and handled in such a way as similar vegetables grown out of doors. Greenhouse men have long since learned that careful packing in attractive containers is well worth while, and practically all devote special attention to this phase of the work. Cucumbers are carefully graded and packed in baskets, boxes, or other suitable containers, the better grades at least being placed with the utmost care and protected in

such a way that no bruising or other injury occurs. One reason for the superior quality of certain greenhouse crops lies in the fact that greenhouse men find it necessary to control insects and diseases, and their product is usually free from such attack. Though some phases of the vegetable forcing business, such as the production of loose-leaf lettuce, may easily be overdone, there would seem to be a steady and growing demand for the quality vegetable which the greenhouse man is able to offer the trade.

FIG. 113.—Cucumbers are one of the important greenhouse crops. In this house, covering an acre, a maximum number of plants are grown by close spacing, trimming, training, and intensive feeding

The Vegetable-Seed Industry

Production of vegetable seeds has grown from the home-garden enterprise of colonial days to a great commercial industry. The acreage utilized for growing seed of about 30 of the more important vegetable crops for the six-year period 1917–1922 averaged about 190,000 acres. The estimated average yearly value to contract growers of the total commercial production of seed of these crops for the period 1916–1920 was approximately $22,000,000. A very large part of this represents seed for the canning crops, chiefly peas and beans, and others of lesser importance. The value of the commercial vegetable-seed business is undoubtedly somewhat greater than these figures indicate. Moreover, the data do not take into account seed saved by the home and market gardeners.

Development of the vegetable-seed industry has been coordinate with the expansion of the vegetable-growing industries of the country. The demand for vegetables for canning and the increased use of fresh vegetables at all seasons of the year has enlarged the acreage devoted to such crops, and as a result a correspondingly increased demand for seed has been developed.

Until comparatively recent times the United States depended upon European growers for its seed supply of some of the important vegetable crops. This was markedly true of cabbage (save the Wakefield type), cauliflower, celery, and radishes. Recently, however, the seed growers of the United States have more nearly met the demands of the country, even for these items. The seed supply of many of the crops extensively grown for immediate use as well as canning purposes, such as peas, beans, tomatoes, and sweet corn, have always been produced in this country in sufficient quantities to meet the demands of the trade. At the present time the chief items of import are seed of Bermuda onions, certain classes of cabbage, forcing carrots and radishes, and a few other special items that can be more economically grown abroad.

The geography of the seed business has changed with its expansion. Peas, beans, sweet corn, muskmelons, and onions, the seed supply of which was grown chiefly in New York and in the New England States prior to 1880, are now grown in special localities in particular States where it has been found that their production can be most economically and satisfactorily carried on. In fact, out of the twenty-odd million dollars derived from seed production each year for the period 1916–1920 a very large part of this was produced in the western portion of the country.

With the enormous increase in the acreage of vegetable production there has also come a very high degree of specialization. The seed trade has to meet the demands of such exacting specialties as the vegetable-forcing industry, canning-crop production, as well as the peculiar requirements of the market gardener who plants a particular combination of crops to cover the season and to meet the demands of local consumers. Large quantities of seeds of a few standard varieties must be produced in order that the canners can pack and satisfactorily merchandise millions of cases of tomatoes, corn, peas, beans, beets, spinach, and other crops. These special features have injected into the seed business requirements which did not exist as long as the chief demand for vegetable seeds came from those who wished to plant a succession of varieties to prolong the season of production and to provide an adequate and sufficiently varied home supply of vegetables.

Although the home gardener is still an important factor in the seed trade and his requirements must be carefully considered, instead of constituting the major portion of the demand as was the case prior to the advent of the canning industry and the development of extensive truck-farming enterprises of the country, this trade, so far as volume is concerned, is an important but minor feature to-day, the major volume of seed production being absorbed by the growers of special crops, such as onions, cabbage, celery, lettuce, etc., and by the canners and truck farmers.

Not only have peculiar varietal characteristics been demanded by the special activities which make up the vegetable industry, but the wide area over which vegetable growing is developed and the fact that it is carried on practically throughout the 12 months of the year, makes it necessary to have varieties and strains suited to local as well as seasonal conditions. These features, together with market and shipping requirements and the advent of more or less serious

diseases, have led to an intensive effort on the part of plant breeders to develop varieties possessing satisfactory market characteristics which are at the same time highly resistant to certain diseases. During recent years much progress has been made in this direction, as well as in the knowledge of the methods of controlling diseases which formerly interefered with the production of seed as well as vegetable supplies.

Although there are several hundred seed dealers and distributors, there are relatively few who are really actual growers or contractors for seed growing. The list of firms engaged in the seed business probably exceeds 400, but the seed firms actually engaged in producing seed is much smaller. The business is highly specialized, requiring the expert knowledge of specialists in seed production, seed handling, and seed distribution. The trade is segregated into two general classes which may be termed the catalog or mail-order type, and the wholesale or jobbing industry. In some instances both are combined in one business as is the case with some of the largest and most progressive seed firms.

The history of the vegetable-seed business is practically coordinate with the Colonial and later history of the Nation. The first American seedsmen were growers primarily to meet their own needs; later, some of them began to import seeds to supplement their own supply and to extend the list; and still later the seed merchant appeared and this group now constitutes by far the majority. The names of Landreth, Thorburn, and Henderson are intimately associated with the early commercial development and popularization of the vegetable seed industry. In fact, several of the important items found in the vegetable-seed trade lists, such as, garden beans, sweet corn, peppers, pumpkins, squashes, tomatoes, sweet potatoes, and potatoes, are all of the New World origin. It is interesting to note that among this list are to be found several of the most important commercial vegetable crops of the Nation to-day. Potatoes, tomatoes, beans, sweet corn, and peppers are very extensively grown and have an aggregate value reaching several hundred millions of dollars.

The vegetable seed-growing and merchandising business is one of the oldest and most important developments of American horticulture. The Colonists brought from their homes in England and Holland, seeds of their favorite garden plants. Isolation and lack of frequent communication with the homeland made it imperative that home supplies of seed be provided. Consequently in 1633, Wm. Wood [18] gives a list of vegetables grown in New England and adds, "Whatever grows well in England grows as well there, many things being better and larger." This does not mean that the colonies were dependent upon the Old World for their main seed supply for it is quite apparent that they were not. The first records of seed offered for sale in this country do not appear until 1763, when Nathaniel Bird [19] a Newport, R. I., book dealer advertised garden seeds just arrived from London.

Wm. Davidson [19] the gardener in Seven Star Lane, offered in 1768, seeds of 56 varieties of vegetables and herbs and of one flower, the carnation. Some of his prices were as follows: Lettuce, 3 to 4 pence per ounce; cabbage, 9 pence to a shilling per ounce; cauliflower, 3 shillings per ounce; carnation, 4 shillings

[18] Pieters, A. J., yearbook, 1899, pp. 549–550.
[19] See footnote 18.

per ounce. Most of the other vegetable and herb seeds ranged from 2 pence to a shilling per ounce; peas, Early Golden Hotspur and Early Charlton, were worth 24 shillings the bushel or 10 pence per quart. Davidson dealt in seeds wholesale and retail for cash.

In Philadelphia and New York, seeds were but little advertised, whatever the trade may have been. The earliest records of seed dealing in these towns was in 1772. As early as 1784, David Landreth established himself in Philadelphia and engaged in market gardening, nursery, and seed-growing businesses. In the beginning the seed trade was a small part of his undertaking. Seeds were almost entirely imported from England but it is apparent that the seed business increased in importance for in 1848, David Landreth, jr., sold the nursery and became exclusively a seed grower and seed merchant.

In 1800, Bernard M'Mahon, gardener, seedsman, and author, opened a seed store in Philadelphia.

In the fall of 1805, Grant Thorburn began to sell seeds in New York, and subsequently built up a substantial business. During the next quarter century seed stores were opened in Baltimore, Boston, and Charleston, S. C., as well as in Philadelphia and New York, and there was a considerable trade in Shakers' seeds. These Shakers' seeds were popular as early as 1818. They were sold by regular dealers, and were peddled about the country in the Shakers' wagons.

It will be noted that the early dealings in vegetable seeds were chiefly carried on by those engaged in other merchandising enterprises. The postal facilities were so inadequate and transportation so expensive that most of the seed supplies were purchased in bulk and retailed by local dealers. It was not until the appearance of the modern seed catalogue which contained descriptions of varieties together with directions for planting and the offering of seeds in packets by mail, that the mail-order business in seeds began to assume important proportions. As early as 1823, however, Grant Thorburn issued a catalogue in pamphlet form. In 1825, it contained 87 pages; and besides the usual retail price list there was a wholesale list and a catalogue of bulbs, of flowering plants, and of tools. The catalogue business, however, did not attain large proportions until during the decade of between 1870 and 1880. It would appear that the printed sales list in the form of a catalogue was first used by the American seed trade and in fact, it marked the beginning of the mail-order business which has been expanded to cover almost the entire merchandising field.

Since 1865 the business of seed growing expanded rapidly.

Notwithstanding some importers of seeds declared in 1867 that American seed growing was a myth, there were at that time more than 2,000 acres devoted to raising vegetable and flower seeds. In 1878, J. J. H. Gregory[20] estimated the total area devoted to growing garden seeds at about 7,000 acres. Of these 3,000 in the table seeds; and 50 acres, flower seeds. The remainder was distributed as follows: Michigan and northern Illinois, 1,600 acres; Pennsylvania and New Jersey, 1,000 acres; Massachusetts, Rhode Island, and Connecticut, 1,000 acres. The acreage for California is not given, but seed growing in that State was then practically confined to lettuce and onion seed, and the industry had been established for only about three years. Of the kinds of seeds which were sold in the United States, Mr. Gregory said:

More or less of half the varieties are imported. Of mangelwurzel, about all; ruta-baga, about nine-tenths; spinach, about nine-tenths; cauliflower

[20] PIETERS, A. J., YEARBOOK, 1899, p. 559.

nearly all: lettuce, about half; carrots, about half; eggplant, about half; parsnip, about one-third; radish, about all. * * * It is the general belief of American seedsmen that foreign-grown radish seed is larger and better than home-grown. Parsley seed is largely imported. Brussels sprouts, broccoli, chicory, endive, kohlrabi, and Swiss chard are almost wholly imported, as is salsify, to a large extent. Of celery, the finest varieties are grown in this country in the vicinity of our large cities. Of cucumbers, but a few, and those of the fancy-frame sorts, are imported. Of peas, most of the hard sorts are home-grown, and probably rather more than half of what are called the softer or wrinkled varieties. The Dutch or rough-leaved turnip seeds are all home-grown. Of cabbage seed, but few varieties are imported, and these are confined almost wholly to a few early sorts. Onion seed is almost entirely an American crop.

During the following decade seed growing expanded rapidly. The census of 1890 showed that there were 596 seed farms containing 169,850 acres, of which 96,567¼ were actually producing seed crops. When this is contrasted with Mr. Gregory's estimate made 12 years previously, of 7,000 acres devoted to garden-seed production the rapid expansion which had taken place in the industry during the period, becomes apparent.

There are no less than 32 items of importance in the list of vegetables annually grown to supply the markets of the country. When these major groups are considered and it is remembered that each of these are represented in the trade by from two to several hundred varieties, and that the trade lists of the country, in 1921, recorded no less than 14,482 names in the 319 catalogues then summarized, the complexity of the situation becomes apparent and the difficulty as well as the magnitude of the trade problem is demonstrated. Fortunately 9,604 of these 14,482 names were used but once in the list of variety names included in these catalogues. There were, however, 4,878, distinct items entering into the trade list of American seedsmen. This is undoubtedly entirely out of proportion to the present development and needs of so large and varied an industry as that of the vegetable-growing industry of the United States.

The contribution of the Old World to the vegetable list is by no means of minor importance. Such crops as onions, cabbage, lettuce, asparagus, eggplant, muskmelons, and watermelons, were brought from the Old World; and these, together with a long list of lesser importance, contribute to the variety of products offered in our annual commercial supply of vegetables.

To bring into relief the contributions which have been made by the Old and the New World, the following list has been compiled:

A. AMERICAN ORIGIN:

Beans.	Peppers.	Squash.	Potato.
Corn.	Pumpkins.	Tomato.	Sweet potato.

B. OLD WORLD ORIGIN:

Cucumbers.	Beets.	Kale and collard.	Parsnip.
Eggplant.	Brussels Sprouts.	Kohlrabi.	Peas.
Muskmelon.	Cabbage.	Leek.	Radish.
Watermelon.	Carrots.	Lettuce.	Salsify.
Okra.	Cauliflower.	Onion.	Spinach.
Asparagus.	Celery.	Parsley.	Turnip.

There are three facts which are worth noting in connection with this list: (1) It includes no hardy vegetables of American origin.

The aboriginal agriculture of the region now occupied by the United States was based on plants from the warmer regions of America. Caucasians, since 1492, have developed no American plants into general use as garden vegetables, being content with the heritage from their European ancestors and from the American natives. If potatoes and sweet potatoes are added to the list, under A, it is surprising to note that the American vegetable garden, in value of product, is more heavily indebted to the American prehistoric people than to all the world besides. This, in spite of the fact that the American growers have taken from the Indian's list of useful plants only such things as have seemed to be easily grown or suited to their style of living; also, they have accepted from the Indian only those plants which he had brought into the present bounds of the United States from tropical and subtropical regions. The Indians used many indigneous plants for food. They had not, however, brought these plants into full agricultural status, getting most of their supplies from natural planting. The incipient horticultural status which some native plants of the United States acquired with the Indians has largely been allowed to lapse. The Jerusalem artichoke is an example of a plant which has, by its persistence, stayed with the American growers, often in spite of them. It is quite possible that the growers may sometime become interested in others of the neglected list of Indian food plants.

(2) The United States extends farther south than any other region occupied by the European branch of the white race. Although it is possible within the wide expanse of the United States to match fairly accurately any climatic condition found in Europe, yet our climate as a whole is very different from that of Europe, giving much greater extremes between summer and winter. It is only in the southern countries of Europe that maize is successfully grown. The United States has always been able to grow seeds of all of section A, including tropical and semitropical plants from both the Old World and the new to better advantage than to import them. It naturally follows that American growers supply practically all of their seed requirements of these crops.

(3) The seed-growing geography of the United States has undoubtedly been influenced by the fact that all of the plants of section A are useful for their seed or their fruit, those being the parts for which they are grown. Only one plant, garden peas, of this sort, is found in section B. Further, all of the plants of section A are annuals, perfecting seed in the same growing season in which planted. As usually grown, about eight plants of section B are annuals—cucumbers, eggplant, muskmelon, watermelon, okra—lettuce, peas, some varieties of radishes, and under some conditions spinach.

Most cultivated plants in the United States depend on the annual care given them on the farm to persist. They are not adjusted to American growing conditions sufficiently to become naturalized. Plants which prove exceptions to this rule and which seem perfectly at home in parts of this country are asparagus, carrots, parsnips, turnips, radishes, salsify, and others. The watermelon can almost be called a naturalized plant in some parts of the South. Some of these wild vegetables are very troublesome weeds.

The climatic advantages which America possesses for the growing of many seeds are fundamental, but aside from them the question

of economics is most important. Based on the fact of a denser population and more severe competition, Europe has always had cheaper labor than the United States. Labor costs constitute the most important item in seed production, so this factor alone keeps certain low-priced vegetables, such as spinach and turnips, among American imports. Another important fact is that Europe has a large body of men trained to the intricate technique of seed growing and seed selection, and these men must work for much lower returns than such ability is able to demand here in the United States. These men are able to hold the seed industry in certain high-priced seeds in Europe in which the crop requires more skill in culture or breeding than we have as yet attained. In this group of vegetables are to be found forcing carrots and forcing radishes, self-blanching celery and cauliflower. The United States has no serious handicaps in climate or soil, and hopes to overcome the wage differential, and to acquire the necessary skill and training so that eventually it may grow all seeds profitably.

In the vegetable summary which follows an attempt has been made to indicate in a rough way the extent, the geography, and the returns which may be expected in connection with each sort of the more important vegetables. The part America has played in the origination of varieties, based often on the different purposes or processes in growing or handling, is pointed out.

Asparagus.—This crop is the only perennial included in the list. It is grown in all save the most subtropical sections of the country. It is not ordinarily planted for seed, but seed is saved from the same fields which yield the market product. In the past, New Jersey and South Carolina have been important seed-producing regions. Five hundred pounds per acre is a satisfactory crop of seed and this should furnish plants for 400 to 800 acres of commercial planting. Asparagus is a crop with the sexes on different plants and so the uniformity of any variety has never been very great. Moreover, the distinction between varieties is often not clearly defined. There is probably no garden plant which responds so strikingly to high culture. The United States has never depended to any extent upon Europe for asparagus seed.

Bean.—This is an American plant and the varieties used are almost all of American origin. In fact, some types can, with great certainty, be traced back to Indian agriculture, the Indian names have persisted in some cases in translated form. The beans spoken of in American catalogues as "cranberry beans" are very similar, if not identical, with beans so called by the Iroquois Indians before the advent of the white man. The name has always had reference more to the shape and size rather than the color, as the catalogues have listed white, red, yellow, and speckled cranberries. The Americans have always grown practically all of their supply of seed beans. It is impossible to properly apportion the credit for the present highly varied list of garden bean varieties between the Indian and his white successor on this continent, but it is certain that what the white man added to what the Indians gave us is comparatively small. So far no white man has claimed that he has found the original wild stock from which our beans have been developed. There is a long list of sorts grown only for dry beans which furnish the basis of a great industry.

There are so many species of beans which are grown in gardens that each should have separate mention.

The common bean (*Phaseolus vulgaris*) is grown everywhere and is used in three stages of development—the undeveloped pods as snaps, the young beans as green shelled, and the fully developed seed as dry beans. Each of these forms of use has resulted in the development of a series of varieties mainly adapted for one specific use. There are one or two varieties that are extensively used in more than one stage but they are exceptional. The seed requirements are very large. Much of that used for planting on a field scale for dry beans does not pass through the seedsman's hands. Large quantities of seed are saved also by home gardeners and some by market gardeners for their own use. The centers of the commercial seed crop are in southern Idaho and eastern Colorado, though seed is extensively grown in Michigan, New York, and Wisconsin. Garden pole beans are nearly all grown in California. A fairly satisfactory crop is 20 bushels per acre and this should plant at least 20 acres if bush type, or 50 acres if pole.

Tepary bean (*Phaseolus acutifolius*), is of very recent discovery by Caucasians in the United States. It has been grown by the Indians of Arizona and others of the Southwestern States, and its culture extends at present into Central America. It has been used by the whites only as a dry bean. There are numerous varieties but only one has been extensively planted. All the seed is home grown and is produced in Arizona and California. Wild plants of this species are to be found in Arizona.

The Lima bean (*Phaseolus lunatus*) was unknown in what is now the United States except by a few southwestern tribes. It is used as a green shelled bean and as dry beans. All the seed used is home grown, mainly in California, though New Jersey produces a little. The varieties are all of American origin.

Beet.—Beets (*Beta vulgaris*) have been developed under cultivation into types for the garden, stock feeding, and industrial uses, especially the sugar beets. The work of selection on the second and third of these types has been done very largely in Europe in the past and seed of these types was imported prior to 1914. During the war sugar-beet seed was produced in California and Michigan.

America has developed a number of varieties of garden beets. The turnip-shaped and globular beets are by far the most popular in the United States, while in most parts of Europe the preference is given to the long and half-long roots. The beet-seed crop is one of the most delicately balanced things economically that can be found. If the price rises a little we grow a share of our own seed; if it falls a little we buy it from Europe. California grows some of the seed produced in this country and gardeners in Connecticut and Massachusetts have grown garden beet seed since Colonial times.

Cabbage.—Cabbage is native in western and southern Europe, and is usually found growing wild in close proximity to the sea. There have not been many types developed in the United States. The seed requirements of the country for early cabbage of the Charleston and Jersey Wakefield varieties, and some of the summer sorts have been met by American growers. The location of our largest production is on the eastern end of Long Island. Another seed-

growing section is in western Washington, along Puget Sound. In recent years selection work has resulted in the development of varieties resistant to certain diseases. These promise good results especially with the late varieties used for sauerkraut. One acre of cabbage for seed should produce enough to plant 2,500 acres of cabbage.

Carrot.—The carrot is a plant of European origin, more extensively used in France than elsewhere. It has been grown generally over most of the United States, and seems at present destined to enjoy more extensive use. Abroad it has been developed into both forage and garden varieties. For garden use there are many types ranging from the small globular forcing carrots to long, late, heavy-cropping sorts. The United States has produced one variety, Danvers, which is half long, and it is extensively grown. California is the most important carrot seed-growing region and exports large supplies to Europe. Seed of the earlier forcing types, which require rigid selection and of which the seed return per acre is small, is imported from Europe. Home production of seed is difficult in many portions of the country owing to the presence of wild carrots, and consequent deterioration of stocks due to crossing. An acre of seed carrots should produce enough to plant about 150 acres of crop.

Cauliflower.—This member of the cabbage group of vegetables has always been difficult and expensive to grow, either as seed or as a market crop. Seed production has been attempted on Long Island and in the Puget Sound region, but so far with little success. A large-leaved, strong-growing southern type is successfully seeded near Los Angeles, Calif. Aside from this limited production most of our seed comes from northern Europe, especially Denmark, and it requires the best locations and the most skillful farmers of that intensively farmed country to succeed with cauliflower seed. America has produced no new types.

Celery.—Seed production of celery has been confined in the past mainly to France and Italy. This is especially true of the self-blanching types. For many years a portion of the seed of the green varieties has been grown in the eastern United States and in California, in addition to which California has also grown considerable quantities of the self-blanching types. During the period of the World War and the disruption of European celery-seed production a number of the leading celery growers of the eastern United States began the careful selection of parent plants and the growing of their own supply of celery seed. This work undertaken mainly as an emergency measure proved so successful that a large part of our highest-grade celery seed of the self-blanching or easy-blanching types is now being grown in a careful manner in this country. Certain celery growers in northern New Jersey are now producing from 100 to 300 pounds of high-grade celery seed as a side line, this seed being sold to seedsmen and direct to celery growers.

The production of celery seed requires painstaking care and considerable labor and is practicable only where the persons engaged in its production are in position to devote the necessary time and care to it. Two methods are followed in the production of this

seed, the one where only selected mature plants are used, (fig. 114) these being carried over the winter in frames, and the other by the use of what are termed seeders, or plants grown without particular selection from high-grade stock seed. Celery seed produced by the first method must necessarily sell at a high price in order to justify its production while that grown by the second method can be sold at a much lower price and may or may not be as desirable.

Cucumber.—Cucumbers are an Old World crop but the greater part of the seed used in the United States is grown in Nebraska and Colorado. Three types of cucumbers are grown as field or truck crop, pickling, and forcing. The first two of these are based on varieties of American origin differing but slightly from European types. The greenhouse crops are sometimes grown from imported seed but usually from seed saved by the grower himself. An acre of cucumbers for seed should supply 100 acres of crop.

FIG. 114.—Celery seed being grown in New Jersey from specially selected plants

Eggplant.—This is an Old World plant. Our seed requirements are small and the variety most commonly grown is an American selection. Our seed is produced at home, largely in New Jersey where marked progress has recently been made in the improvement of strains through selection.

Kale and collard.—These names include the forms of nonheading cabbages grown in the United States and are of Old World origin. Collards are American in name, use, and selection, and the seed supply is mostly produced in southern Georgia. Some kale seed is produced in the United States, but most of it is imported.

Lettuce.—Lettuce, although an Old World plant, finds such congenial environment in America that not only are domestic seed requirements met but large quantities are shipped to Europe. Cali-

fornia grows the greater part of the seed (fig. 115), and an acre planted for seed will furnish seed for planting 40 acres of crop. All of our varieties are from European sources with the exception of some of the greenhouse sorts.

Muskmelon.—In Europe three well-marked types are grown—netted muskmelons, winter melons, and cantaloupes. The first two names are descriptive. The cantaloupe is a melon without netting, rather smooth or covered with warts, usually deeply ribbed with salmon flesh and a high aroma. The word "cantaloupe" as applied to muskmelons in this country is a trade misnomer and most seedsmen do not use the word in their catalogues. Muskmelon seed is grown largely in Nebraska and Colorado (fig. 116), although other sections produce limited quantities. There is no large foreign demand for muskmelon seed since the greater part of Europe grows only hothouse varieties and those of special type which are not

FIG. 115.—Lettuce being grown for seed in young pear orchard in California

grown in this country. The present muskmelon-shipping industry in the United States is based mainly on the netted melons which have been developed primarily for their shipping qualities. Among muskmelons that have been developed for home use there is a greater variety than in the case of shipping melons. Muskmelon-seed growers have paid particular attention to the development of the shipping varieties.

Watermelon.—Watermelon seed is grown in Florida, Georgia, Oklahoma, Kansas, California, Nebraska, Michigan, Colorado, New Jersey, and other States. About 10,000 acres are planted annually in the United States for watermelon-seed production. An acre of watermelons grown for seed will produce about 200 to 240 pounds of seed, and this will plant 100 acres of crop.

Onion.—During the early days of the seed industry in this country the supply of onion seed was obtained from European sources, but

onion growers in the United States, finding this source of seed more or less unreliable, began to grow their own. Later, when the seed industry in California developed the greater portion of the supply of onion seed was produced in that State. At present California leads, with Ohio, Oregon, Colorado, Connecticut, Washington, and Illinois following in their order. According to statistical data prepared by the department the acreage devoted primarily to the production of onion seed in the United States in 1918 was 7,260. This declined until in 1922 the acreage was given as 1,295. This decrease in acreage of onion seed can be explained only by the fact that a large number of onion growers have during recent years saved a supply of mother bulbs and have produced their own seed.

FIG. 116.—Machine used for separating seed from muskmelons in the Rocky Ford (Colo.) district

A bushel of medium size, sound mother bulbs will produce 2½ to 4 pounds of seed, and from 4 to 6 pounds of seed are required to plant an acre of commercial crop. The average yield of onion seed per acre in 1922 was 347 pounds. The total production as reported for 1922 was 450,000 pounds.

Seed of the Bermuda onion for planting in Texas, California, and elsewhere in the United States is procured from the island of Teneriffe in the Canaries, off the coast of Africa. Seed of the Valencia onion is procured mainly from the Denia and Valencia districts of Spain. The seed of this onion is now being grown successfully in New Mexico, Arizona, and Utah and the United States will undoubtedly be less dependent upon Europe for its supply of seed of Valencia onion in the future. A satisfactory supply of Bermuda onion seed, however, has not for some unknown reason been successfully produced in the United States. There is nothing particularly difficult from an economic standpoint in the production of other types of onion seed in the United States except the

necessity for wintering over the mother bulbs and the expense of resetting them in the ground during the early spring (fig. 117). There are in various parts of the onion-producing portion of the country local growers who are very successful in the growing of sufficient seed with which to plant their own acreage and these growers frequently produce a surplus which is sold to seedsmen or more often to their neighbor onion growers.

Onion-seed production presents no particular problems and can be handled economically in conjunction with the commercial production of onions. The mother bulbs from which the seed is to be grown are selected from the commercial crop either at the time of harvesting or during the curing period. These bulbs are stored in crates and in the same manner as those intended for the market and

FIG. 117.—Seed onions a short time before the seed heads are ready to harvest

are reset on a new location in the spring. Any barn or open shed will serve for the curing of the seed heads and the threshing of the seed can be done by means of flails either on a tight barn floor or on a sheet of canvass (fig. 118). The only problem that the production of onion seed involves is the preparation of land on which to reset the mother bulbs. Where onions are grown on peat soils it is customary to reset the mother bulbs on the upland, preferably on a rich clay loam soil such as would produce a good yield of wheat. The use of fertilizers containing a high percentage of phosphoric acid is also beneficial in the production of onion seed. On the whole the labor costs in onion-seed production are not high and the superior quality of seed that may be produced by onion growers through selection and careful handling fully justify this method on the part of the commercial growers.

Pepper.—Peppers are of American origin. They were first introduced to Caucasians through the south of Europe. Our present varieties have come from Spain, Italy, the Balkans, South America, and Mexico. We have done some selection work and have improved the uniformity of imported types, but have originated few distinctive varieties. Our seed is almost entirely home grown. Our largest pepperseed-growing centers are in New Jersey, Georgia, and southern California. One acre of seed peppers with average crop will furnish seed to plant 1,000 acres for the trucker.

Pea.—Peas are from the Old World, probably from Asia, and are well adapted to most of the United States. It is necessary to have cool conditions in order to grow peas successfully and such conditions are usually found in the northern tier of States throughout the entire summer; in the Middle States in early spring and in the Gulf States during the winter. By far the most favorable pea-growing part of this country is found in the States next to

FIG. 118.—Onion seed drying on canvas sheets in California

the Canadian border and the optimum conditions in that strip are in the cool moist sections bordering the Pacific Ocean. The American seed-growing industry began with peas. They were first grown in New York, and the production has successively changed to Michigan, Wisconsin, and finally to the high irrigated valleys of the mountain states. Some seed peas are still grown throughout the eastern territory which was formerly the production center for the crop. The centers of seed-pea production have changed from time to time because of the varying influences of the combined effects of insects, diseases, and economic changes to which it is very difficult to give accurate rank according to their relative importance.

On the basis of number of acres employed and the value of the product produced, as well as the number of men engaged in it, seed peas exceed all other items in the list of garden seeds. For more than half a century the country has provided for its own seed requirements and there were, in 1925, more than 100,000 acres devoted to the production of seed peas.

One acre of average crop seed peas will furnish seed for only 3 acres of canner's peas and the ratio between the product of the acre

grown for seed and that required to plant an acre of canning crop is the lowest of any vegetable. In other words, it takes more acres of seed peas to plant the acreage of canning-crop peas than for any other similar vegetable or farm crop. Peas are widely grown as a home-garden and market-garden crop. From the standpoint of pea-seed requirements the canning business is the most important, requiring more than one-half of all the seed peas produced.

The majority of varieties of peas grown in this country and listed in the seed-trade catalogues are of foreign origin, but there are several sorts extensively used for canning purposes which are of American origin.

Radish.—The radish is another Old World crop, the varieties of which are almost exclusively of foreign origin. California grows all the seed requirements of the larger-rooted sorts required in this country and exports in quantity. The smaller early-forcing radishes give low yields of seed and require skill and much labor to produce and in the past, seed of these varieties has been imported. During late years excellent seed of these types has been produced in Michigan. One acre of seed should grow enough to plant 35 acres of crop.

Spinach.—All varieties of spinach, with the exception of one selected for disease resistance, are of Old World origin. The production of spinach seed is not difficult and there are numerous places in the United States where it can be successfully grown, but owing to the difference between economic conditions obtaining in Europe and in the United States, the bulk of the seed has, up to the present time, been grown in Europe. This condition has changed during the period of the war, but with postwar conditions approaching the normal, the importing of spinach seed is on the increase. Spinach seed can be harvested in California in advance of any other seed crop and a certain acreage of it is grown at an apparent financial loss because it furnishes work during slack times for a labor force which might otherwise be idle, and it brings in some revenue before other seed crops are marketed. One acre of seed should furnish enough to plant 50 acres of crop.

Squash and pumpkin.—These plants are all American in origin, and were important in Indian agriculture in what is now the United States. There are three species concerned in this group—*Cucurbita pepo*, *C. maxima*, and *C. moschata*. There is no evidence that they hybridize across specific lines though they cross very extensively within the species. Our varieties are practically all of home origin. The species are very variable and new forms are readily selected. The seed supply is all home grown, being mostly produced in Nebraska, Kansas, and Colorado. One seed acre should furnish seed enough to plant 60 to 80 acres of crop. Since seed is readily saved at home more home and market gardeners save their own supply of seed than in most other crops.

Sweet corn.—Although corn was one of the first food plants adopted by the colonists from the Indians and knowledge of the plant undoubtedly spread across the seas, neither the culture nor the use of corn, either fresh, dried, or canned, has become general outside of the Americas. Naturally all varieties of sweet corn known to American seedsmen originated in this country and the work per-

formed in improving sweet corn and in the developing of new varieties suitable for special purposes has been an outstanding contribution on the part of American plant breeders and seed growers. The production of pure seed sweet corn is a matter requiring painstaking care. Seed of but one variety can be safely produced in the same immediate locality as corn cross-pollinates for great distances and attempts to grow more than one sort of seed sweet corn on the same farm are liable to result in mixing and unsatisfactory results. Sweet-corn seed can be produced and is grown in most regions where the commercial crop is of importance. Seed production of sweet corn is limited geographically in the South by temperature and insect conditions, while the northern limit of its growth is sharply defined by the length of the growing season.

A bushel of high grade sweet corn seed can be produced from 3 or 4 square rods of ground and this is sufficient for the planting of 5 or 6 acres of crop. Many growers make a practice of setting aside a few square rods of their commercial crop, saving only plants having desirable characteristics and using ears from these for seed. The commercial seedsman, however, is the dependence of a large portion of sweet corn growers for their supply of seed. Irrespective of whether the seed is home grown or purchased from seedsmen its quality must be assured. The home gardener desires seed of a succession of varieties, beginning with those which mature in a short period, and followed by others perhaps of better quality than the extremely early ones and yielding a uniform high-grade product either for use as roasting ears or, should he prefer, for canning. The truck gardener must have seed of varieties which possess such merit as earliness, quality, and good yield. The importance of good seed corn to the canner can hardly be over emphasized. His entire season's operations might easily be interfered with through the unfortunate selection of poor seed. Good germinating qualities and vitality go hand in hand with freedom from certain diseases.

Field selection and curing of the seed must be followed by careful handling over winter. The ears must be well cured, this being accomplished by storage on wire-bottom shelves or in slat crates stacked on shelves. Other devices embodying similar principles are also used. Figure 119 shows a sweet-corn drying house used on a New England farm. Ample ventilation to remove moisture from the corn is essential. During the storage period the seed must also be protected from low temperatures.

Tomato.—The United States leads in the production of tomatoes for the reason that, except in the south of Europe, climatic conditions are not favorable to the outdoor cultivation of the crop. In the United States conditions are such as to make it possible to grow tomatoes over the greater part of the continental domain.

The varieties of tomatoes so extensively used for home gardens and commercial purposes are all of American origin, the only exceptions being certain of the varieties grown as forcing crops under glass. The United States has in the main supplied its own requirements for tomato seed. The range of territory over which the tomato is grown, together with the fact that it is produced in Mexico, Cuba, and Florida, as a winter crop, and in the Southern States as an early truck crop, and extensively at the North for can-

ning purposes, has led to the development of a considerable number of sorts varying in size, color, texture, and season of maturity to meet the requirements of the variations of the industry and of the season during which the crop is grown. An acre of seed tomatoes will produce 60 to 80 pounds of seed or enough for planting 200 to 250 acres of the crop. The greater part of the supply of tomato seed is grown in New Jersey, Ohio, Indiana, California, and Michigan. About 5,000 acres are devoted to the exclusive production of tomato seed in the United States and in addition seed is saved from large quantities of specially selected commercial tomatoes that are used for the manufacture of tomato soup, pulp, and catsup.

At the present time seed production is carried on by special groups such as canners, forcers, and truck farmers, to provide seed supplies to meet particular needs. The canning industry has been a leading factor in this phase of tomato-seed production. Because of the

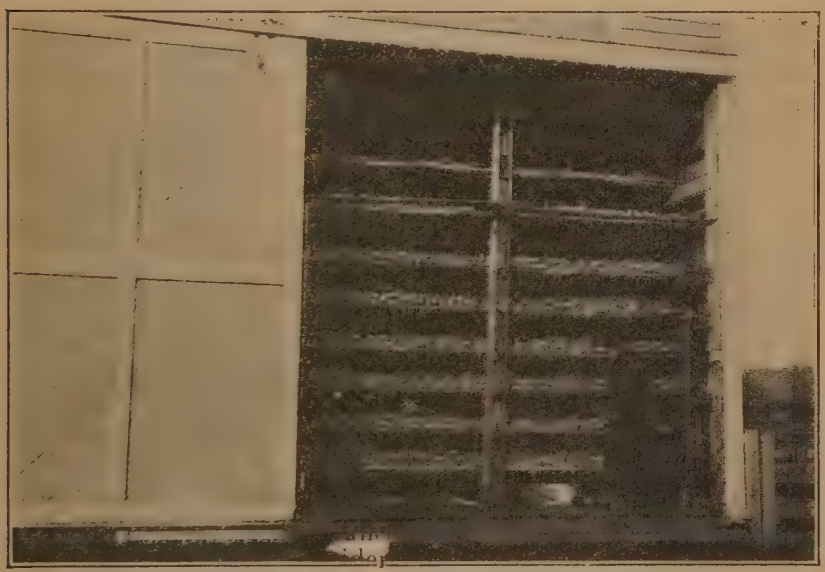


FIG. 119.—Method of storing sweet corn to dry for seed

destructive inroads of certain soil-borne diseases, as well as diseases peculiar to particular regions, plant breeders have been giving special attention to the production and selection of varieties and strains which will withstand these troubles. Particular success has been attained with varieties resistant to the wilt diseases and to the nail-head rust.

Trends in Vegetable-Seed Production

Seeds of a large number of vegetables of lesser importance than those mentioned in the foregoing are produced in the United States in quantities sufficient to meet the home-garden and commercial requirements. Climatic and labor conditions have been and are to-day the main determining factors in the development of the American seed industry. The climate of parts of California and

other arid sections of the Western States render those regions especially adapted to the growing of certain seeds which require a dry atmosphere for their curing. For example, onion and other seeds grown in California can be cured on canvas sheets spread on the ground in the open. Certain parts of California, Colorado, Idaho, Michigan, and New York are especially adapted to the growing of bean seed on account of a combination of soil, climatic, and disease-free conditions that make possible the production of superior quality seed. On the other hand, labor costs for the production of certain classes of seeds are such as to justify their purchase from European and other outside sources.

The trends in vegetable-seed production are toward standardization of varieties and strains and the procuring of those that are resistant to diseases together with high-producing quality. More attention is being given to the production of seeds to meet special requirements such as the early-forcing and greenhouse industries. Among the outstanding accomplishments are the development of rust-resistant asparagus varieties, wilt-resistant tomatoes, yellows-resistant spinach and yellows-resistant cabbage.

Cultural Practices

The Potato

The potato (botanically known as *Solanum tuberosum*, L.) is a member of the Solanaceæ or nightshade family of plants. It is closely related to the tomato, eggplant and pepper.

Origin.—The original home of the potato is admitted by all botanical students to have been in the Andean Mountains of South America. There are differences of opinion, however, as regards the country in which it originated. Some botanists insist that its native home was in Chili whereas others are equally insistent that it first occurred in Peru. The truth of the matter is that before there was any printed record of the potato it was being grown in several countries in the western part of South America. Cieca in his Chronicles of Peru, published in 1553, records having observed the potato being grown by the inhabitants of the country traversed by the Spaniards on their march through Colombia, Ecuador, Peru, and Bolivia in the conquest of the Incas of Peru.

This invasion was undertaken in 1538 and Cieca began to record his observations in 1541 and continued this task until the close of the campaign several years later. At that time the potato was commonly grown in localities where maize could not be successfully grown, that is in the more elevated and cooler sections. Cieca's Chronicles clearly show that more than one variety was being grown and he expresses his conviction that the potato had probably been in cultivation in those regions several centuries in advance of his time. It is not strange, therefore, that its botanical origin still remains undetermined.

There is every reason to believe that the plants studied by early European botanists and to which the specific name "tuberosum" was applied were of hybrid origin and were not entitled to be recognized as a true species. All efforts of later bontanists and plant collectors to discover the parentage of the potato have met with

failure and there is little likelihood of our ever definitely determining this point. Botanically speaking the potato tuber arises as a terminal swelling of a thick and usually rather short, underground stolon. These stolons originate from the main stem of the plant, from what above ground would be the axils of the leaves, and extend outward in a more or less horizontal line and sooner or later normally swell up at their tips to form tubers.

Early history of its introduction into Europe and America.—Although there is more or less conjecture as to the exact date of the introduction of the potato into Europe it is supposed that it was first brought to Spain shortly after the Spanish invasion. From thence it is thought to have found its way into Italy and from there into central Europe during the latter part of the sixteenth century. At about the same time history records its introduction into Ireland from Virginia in one of Sir Walter Raleigh's trading vessels about 1586. It is apparent, however, that a discrepancy occurs in this account in that it implies that the potato was native to Virginia. From the description of the Virginia plant it is quite evident that the writer had in mind *Apios tuberosa*, a tuberous-bearing plant of the Leguminosæa or pulse family. There is every reason to believe, however, that the true potato was brought over in one of Sir Walter Raleigh's ships, but that they were obtained at some trading port on the west coast of South America rather than from Virginia.

Development of potato culture in Europe and the British Isles was extremely slow, during the first two centuries following its first introduction from South America about the middle of the sixteenth century. In England potatoes were little grown outside of private gardens prior to 1784; while in 1796 Essex County, England, grew 1,700 acres for the London market. In Scotland the production of potatoes up to at least 1760 was practically confined to gardens, while potato culture in Ireland was simultaneous with that of England. In Prussia it required the autocratic ruling of Frederic the Great to make potato growing general. This monarch ordered his soldiers to force the farmers to grow potatoes.

Potato development in France was somewhat slower than in Great Britain and required considerable fostering. It was well along toward the close of the eighteenth century before potato culture became at all general. As late as 1764 a Swedish writer states that the Swedes have just discovered the culture of potatoes. Mention is also made of the issuance of a royal edict designed to encourage the culture of potatoes.

The first record of the introduction of the potato into North America is found in Watson's Annals of Philadelphia, volume 2, page 420, 1844, in which he says:

> This excellent vegetable was very slow of reception among us. It was first introduced from Ireland, in 1719, by a colony of Presbyterian Irish settled at Londonderry, N. H. They were so slow in its use in New England that as late as 1740, it was still a practice with masters to stipulate with some apprentices that they should not be obliged to use them. The prejudice was pretty general against them that they would shorten men's lives and make them unhealthy, and it was only when some people of the better sort chose to eat them as a palatable dish, that the mass of the people were disposed to give them countenance.

Further light is shed by Watson on page 486 of the same volume where he states:

> As late as my mother's childhood, potatoes were then in much less esteem than now. The earliest potatoes, like the originals now discovered from South America, were very small, bright yellow ones, called kidney potatoes, and probably about 75 years ago, they then first introduced a larger kind, more like the present in use, which were called in New England the Bilboa. In Pennsylvania the same kind of potatoes were called Spanish potatoes.

The development of American varieties.—Prior to 1856 or 1860 the varieties grown in this country were almost, if not entirely of English or European origin. With the introduction of Goodrich's Garnet Chili seedling closely followed by Calico, Cuzco, Early Goodrich, and others, there began to arise a more or less distinct race of potatoes of American origin.

Goodrich's work.—During the years 1843 to 1847 there swept over the potato crop of Europe, Great Britain, and America a severe epidemic of late blight which reached its climax in 1845, resulting in severe famine in Ireland where the potato constituted a very important part of the diet of its people. It was during this severe and prolonged outbreak of late blight that the Rev. Chauncey Goodrich of Utica, N. Y., conceived the idea that the apparent susceptibility of the potato to late blight was probably due to its repeated multiplication by cuttings and that the only way to restore it to its pristine vigor would be to resort to sexual rather than asexual reproduction. Proceeding on this hypothesis he began to grow seedling potatoes. In 1851 through the kindness of the American consul at Panama, he received a small quantity of South American potatoes for breeding purposes. Among this lot was a strong-growing vigorous variety to which he applied the name "Rough Purple Chili," a name suggested by its rough purple-colored tubers and the country for which he assumed it had come. According to his record it was from naturally fertilized seed balls produced on this variety in 1852 that he grew a lot of seedlings in 1853, one of which was later named the Garnet Chili. This seedling was distributed in a small way in 1856 and formally introduced the following season. Several other seedlings followed, such as those previously mentioned and others, but none were destined to prove as important to the potato industry of this country and to a certain extent to other potato-producing countries of the world as that of the Garnet Chili. In fact we may regard the Garnet Chili as the forerunner of a hardier race of potatoes, which were destined to supersede the previous varieties grown. It is questionable if Goodrich himself foresaw the far-reaching results of his efforts to improve the existing varieties of potatoes.

Origin of present-day commercial varieties and where grown.—A study of the origin of our important commercial varieties affords strong confirmatory evidence of the rôle played by Goodrich in the regeneration of the potato industry.

Garnet Chili.—Originated by C. E. Goodrich in 1853; seedling of Rough Purple Chili; introduced in 1857. Now grown in a small way in Oregon to supply seed to California growers where it is planted in California for early-crop purposes. In Canada it is grown in New Brunswick and Nova Scotia in order to supply the

Bermuda growers with seed for their second-crop planting. The variety is not important commercially.

Early Rose.—Originated by Albert Bresee of Hubbardton, Vt., in 1861 from seed obtained from a seed ball produced by a Garnet Chili plant in 1860. Introduced in a limited way in 1867 as the Early Rose, the name given being suggested by its earliness of maturity and rose color of the skin of the tuber. This variety was probably more widely grown in the latter part of the nineteenth century than any other. Its popularity was no doubt largely due to its ability to succeed under widely varying soil and climatic conditions. The Early Rose can hardly be regarded to-day as a commercial variety in this country but in some other countries it is still grown to a considerable extent.

Early Ohio.—The Early Ohio was originated by Alfred Reese of Ohio in 1871 and was claimed to be a seedling of the Early Rose. It was introduced in 1875 and is grown most extensively as an early market variety in the Ohio River Valley and the Red River Valley of Minnesota, North Dakota, and South Dakota and, until the last few years, was the leading variety grown in the Kaw Valley in Kansas. Owing to its tendency to produce knobby or prongy tubers when the growing conditions are unfavorable it has largely been displaced in Kansas by the Irish Cobbler. The Early Ohio is still an important commercial variety.

Burbank (*Burbank seeding*).—This variety was originated by Luther Burbank in 1873 from seed obtained from a seed ball produced by an Early Rose plant. It was introduced in 1876 and for a number of years was extensively grown in the East. Diminishing yields, possibly due to lack of adaptation, or a gradual running out caused by disease or environmental influence, has led to its almost total abandonment by the eastern potato grower. It is now one of the most popular far-western varieties and shares honors with its sport, the Russet Burbank which is generally regarded as one of the best varieties from the culinary standpoint of any now grown. The true Burbank is grown most extensively in the western part of Oregon and in the Stockton districts in California. The Russet Burbank is largely grown in Colorado, Idaho, and Washington, and to a lesser extent in Oregon, Montana, Wyoming, Utah, and Minnesota.

Green Mountain.—The Green Mountain was originated by O. H. Alexander, of Charlotte, Vt., in 1878. It is claimed to be a seedling of the Dunmore crossed with Excelsior. The Dunmore is represented on Pharo's chart (see fig. 120) as being a seedling of the Early Rose, and the Excelsior is claimed to be a seedling of the Early Goodrich, which in turn was a seedling of Cuzco produced by Goodrich from one of his wild Peruvian varieties in 1856. Thus we see that the Green Mountain's parentage goes back tot Goodrich's productions. The Green Mountain is at the present time one of the leading late or main-crop varieties in the northeastern portion of the United States. It is grown most extensively in New England particularly in Aroostook County, Me., northern New York, Long Island, N. Y., northern New Jersey, western Maryland, and northern Wisconsin and Minnesota. This variety is peculiarly well adapted to a cool summer climate and where there is sufficient rainfall to develop the crop. It does not so successfully withstand a protracted

spell of hot dry weather as does the Rural New Yorker No. 2, but where it does succeed it is a more desirable variety to grow because it is generally more productive and of better table quality than the Rural.

Peerless (Pearl).—The Peerless variety was originated by Albert Bresee of Hubbardton, Vt., in 1862 and is claimed to be a seedling of the Garnet Chili. It was introduced in 1870. This variety is grown most extensively in the Greeley district in Colorado and to a limited extent for seed purposes in Wisconsin. Within the last few years its popularity in the Greeley section has decreased rapidly. This is largely because of the establishment of potato grades by the United States Department of Agriculture, which has resulted in pointing out the high percentage of undesirable tubers produced by this variety. The Peerless produces many over-sized, knobby, and ill-shaped tubers causing a heavy shrinkage in grading to standard grades. As a result the growers are in many cases substituting the Rural New Yorker No. 2 variety.

Peoples.—This is a russet-skinned sport of the Peerless and is grown to some extent in Colorado, Utah, and Idaho.

Triumph.—The Triumph variety was originated in Connecticut in the the early seventies and was introduced in 1878. It is claimed to be a seedling of the Peerless crossed with an Early Rose seedling and is, therefore, a direct descendant of the Garnet Chili. It is the earliest commercial variety grown in this country. The Triumph is grown most extensively in Louisiana, Texas, Oklahoma, and Arkansas, and to a lesser extent in Alabama, Mississippi, southern Florida, and Tennessee.

Irish Cobbler.—The origin of the Irish Cobbler is more or less obscure. Gregory in his 1899 catalogue says: "This potato is an American variety originated here by an Irish 'cobbler,' hence its name." C. W. Ford, in volume 68 of the American Agriculturist page 521, 1901, says:

> At the Mt. Holly (N. J.) fair about eight years ago a potato was shown which attracted a great deal of attention. No name was attached and it was called Irish Cobbler after a local shoemaker of Irish descent in whose garden the sport was discovered. About 25 years ago the shoemaker discovered in his garden among a patch of Early Rose one particular plant whose leaves were several shades darker than the others and whose bloom was purple instead of white. Being extra early and doing well in this locality the variety was grown for nearly 20 years on one farm near Burlington without change of seed.

The Irish Cobbler is most extensively grown throughout the Atlantic Coastal Plain States from Georgia to Long Island, N. Y. It is also the leading early variety of the New England States and in the Maritime Provinces of Canada. In many sections of the South it is supplanting the Triumph and, as has been mentioned, it has already very largely displaced the Early Ohio in the Kaw Valley of Kansas. The Irish Cobbler is also the leading early variety in the Louisville, Ky., district.

Rural New Yorker No. 2.—The Rural New Yorker No. 2 was originated by E. S. Carman in the early eighties, who claimed that it was a seedling of seedlings raised through several generations. It was introduced in a limited way in 1888 and to the trade in 1889. The Rural group of potatoes of which the Rural New Yorker No. 2 was the first to be introduced, and may therefore be regarded as

the forerunner of this hardy race of varieties, is perhaps the most widely grown of the late or main-crop varieties. It is much more resistant to heat and drought than the Green Mountain or members of that group. The Russet Rural, a sport of the Rural New Yorker No. 2, or a member of that group, is rapidly gaining in popularity in many sections as, for example, Michigan where it originated, and in Pennsylvania. The Rural group is most extensively grown in western and southern New York, Pennsylvania, southern Ohio, Indiana, Michigan, Wisconsin, Iowa, parts of Minnesota, Colorado, and numerous other localities.

Minor varieties.—Commercial varieties of lesser importance are the McCormick and Peachblow or Red McClure of the Peachblow group, the Charles Downing, Prolific, White Rose, Up-to-Date, Earliest of All, and a few others.

McCormick (Synonyms Late Hoosier, Lookout Mountain).—The McCormick is claimed to have been originated by the Rev. T. B. McCormick of Princeton, Ind., and was introduced in 1882. It is especially adapted to late-crop production in the South as it is easily the most resistant variety to heat and drought of any grown and seems to have the ability to produce a crop quickly during the late fall. In the Norfolk district in Virginia it may be planted as late as the middle of August and still make a fair crop. Unfortunately it is not an attractive potato to look upon, being deep-eyed and more or less roughened, nor is it of good table quality. Its sure-cropping qualities make it a favorite with the southern grower. The McCormick can not be successfully grown in the North.

Peachblow or Red McClure.—This variety is claimed to be a sport from the Improved Peachblow. It is not grown to any extent outside of Colorado where in certain sections it seems to do remarkably well. It is of little relative commercial importance.

Charles Downing (Idaho Rural, Rural).—Raised by O. H. Alexander, Charlotte, Vt. Parentage unknown. Introduced in 1877. Grown extensively in Idaho and certain sections in Colorado. It is a midseason variety and is grown for the early market in the Caldwell district in Idaho.

Prolific (Brown Beauty).—The Prolific was originated by Albert Bresee of Hubbardton, Vt., in 1861 and is claimed to have been raised from seed of the same seed ball as the Early Rose, therefore a seedling of Garnet Chili. It is grown almost exclusively in the San Luis Valley in Colorado and is little known outside of that locality except in trade channels.

White Rose.—The White Rose is grown most extensively in southern California and to some extent for seed purposes in Oregon.

Up-to-Date (British Queen).—This variety is of Scotch origin. It is grown under the erroneous name of British Queen in Oregon and California. Largely grown in southern California.

Pharo's chart.—The accompanying chart (fig. 120) prepared by Edward A. Pharo and published in 1888, represents an attempt to present in an objective manner the parentage of the then known varieties of potatoes. It also roughly represented the shape of the variety. Although it has not been possible in all cases to verify Pharo's parentage determinations from the recorded facts, it nevertheless is of sufficient interest from a historical standpoint to justify its reproduction.

Importance of the Potato

The importance of the potato as a food crop is not as fully recognized as it should be. As a world crop it exceeds, in point of total production, that of any other table food plant grown. In the United States the potato, as determined by acreage and value of the crop produced, occupies sixth place, but if considered on the basis of a table food plant it is second only to wheat. In per acre production it easily leads that of corn, wheat, and oats.

United States crop.—A study of potato production in the United States by 10-year cycles during the last 50 years shows a very interesting correlation between population increase and that of the total crop grown. The data as presented in Table 5 shows the average

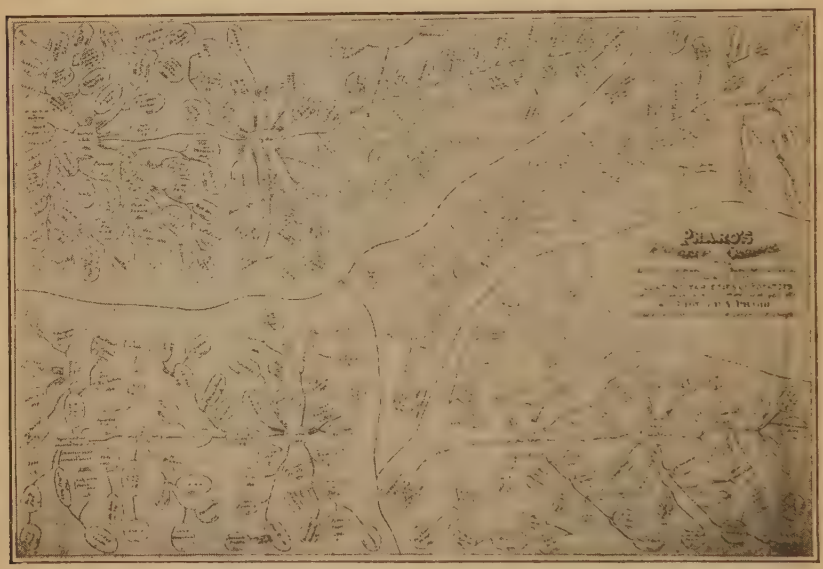


FIG. 120.—Photographic reproduction of Pharo's chart showing parentage of potato varieties prior to 1888

acreage production, bushels per acre, population and per capita bushels by decades from 1870 to 1919, inclusive. It also shows the same data for the years 1920 to 1925, inclusive. In Figure 121 the correlations between the five sets of dates are well illustrated graphically.

TABLE 5.—*Average acreage, production, yield per acre, population, and per capita production by decades, 1870–1919 and six-year period, 1920–1925*

Decennial period	Area	Average production	Average yield per acre	Average population	Per capita production
	Acres	*Bushels*	*Bushels*		*Bushels*
1870–1879	1,514,000	132,837,200	87.93	44,453,800	2.98
1880–1889	2,261,100	172,733,200	76.48	56,658,400	3.05
1890–1899	2,831,700	220,895,000	77.50	69,579,900	3.07
1900–1909	3,229,900	298,470,100	91.98	84,219,000	3.53
1910–1919	3,794,900	362,737,100	95.37	99,342,700	3.66
1920–1925 [1]	3,697,000	397,163,667	107.87	110,663,500	3.58

[1] Six-year averages.

The per capita production of potatoes while reflecting the close relationship between population and production does not represent the actual average individual consumption of potatoes. To arrive at a fairly accurate estimate of the actual per capita consumption it is necessary to deduct all stock unfit for table purposes, such as the culls, frozen, and diseased tubers and the natural shrinkage in storage or in handling. In addition to these deductions one must also take into account the seed required for the ensuing crop. The percentages involved while varying in different seasons so far as all items, except seed, are concerned, are estimated to be approximately as follows:

	Per cent
Culls or unsalable stock	10
Diseased and frozen stock	5
Storage shrinkage	5
Seed for ensuing crop	10

The above figures, with the exception of the last, are in all probability too low rather than too high. Deducting 30 per cent from the 5-year average production of 1920 to 1924, leaves 288,363,460 bushels available for consumption or a trifle less than 2⅔ bushels per year for each man, woman, and child in the United States. This quantity seems relatively insignificant when compared with Germany's reported consumption of 7⅓ bushels, or a trifle less than three times that in this country. Assuming that these figures are approximately correct it is seen that 70 per cent of the potato crop of the United States is used for table purposes, whereas German statistics show that only about 28 per cent of their crop is used for table food. The disposition of the German crop differs essentially from that of this country as may be noted from the following summary:

	Per cent
Used for table purposes	28
Fed to livestock	40
Used for seed	12
Used for industrial purposes	10
Losses due to decay and shrinkage	10
Total	100

The trend of potato production in the United States in so far as it relates to increasing or decreasing yields per acre is well illustrated by the data presented in Table 6 which shows the average acreage, total production, and acre yields by five-year periods from 1875 to 1924, inclusive. These data show, with but a single exception, a definite, progressive increase in both acreage and total production for each five-year cycle. The exception noted is in the case of acreage during the last period, which is less than that of the preceding one. Reference to these data show that the average production per acre during the 1915–1919 cycle was 93.4 bushels as compared with 97.9 bushels for the 1910–1914 period and 106.3 bushels for the 1920–1924 period. This low average acre production is in a large measure attributable to a rapid expansion of acreage during the war period resulting in the planting of land unsuited to the crop, or in sections where the climatic conditions were unfavorable. Poor seed was also a factor in low yields. Another interesting feature of the data is that of the decline in yield per acre from the first to that

of the fourth cycle, and the subsequent upward trend in yield from that point on. Several factors are thought to be responsible for this yield depression period of which the following are considered most important: (1) The ravages occasioned by the Colorado potato beetle during the early period of its invasion when adequate control measures had not as yet been evolved; (2) the decline of agriculture due to financial depression; and (3) a gradual depletion of the natural fertility of the soil.

TABLE 6.—*Average acreage and production of potatoes by five-year periods, 1875 to 1924 inclusive*

Five-year cycles	Average acreage	Average production	Average yield per acre
		Bushels	*Bushels*
1875–1879	1,731,600	153,509,800	88.7
1880–1884	2,113,400	169,316,800	80.1
1885–1889	2,408,800	176,149,600	73.1
1890–1894	2,729,600	190,002,600	69.6
1895–1899	2,933,800	251,787,400	85.9
1900–1904	3,062,600	270,924,800	88.5
1905–1909	3,397,200	326,015,400	95.9
1910–1914	3,685,800	360,772,400	97.9
1915–1919	3,904,000	364,701,800	93.4
1920–1924 [1]	3,876,600	411,947,800	106.3

[1] With exception of 1923 and 1924, the acreage and production data was taken from the 1923 Yearbook.

Similarly the upward trend in per acre yields may be explained on the basis of certain influences, as for example that of the agricultural experiment stations, agricultural colleges, the United States Department of Agriculture through its extension workers and investigators. The control of fungous and insect pests through the application of Bordeaux mixture and insecticidal compounds, the development of better seed stocks through the elimination of diseased plants and the distribution of better strains of seed, and finally, through the development of special commercial potato-producing areas in which the potato makes an optimum growth.

In Figure 121 the average acreage production is graphically depicted. In the case of production each 10-year cycle shows a fairly consistent gain from 1869 to 1925, while in that of acreage, the only disturbing figure is that for the 1915–1919 5-year period in which the acreage exceeds that of the 1920–1924 period. This exception can be explained by the large expansion in acreage as a war measure designed to guarantee an abundant supply of cheap food.

Where the crop is grown.—A large percentage of the potato crop is grown in the northern tier of States, as for example Maine, New York, Pennsylvania, Michigan, Wisconsin, Minnesota, North Dakota, and the Northwestern States. The largest potato-producing States are New York, Minnesota, Michigan, Maine, Wisconsin, and Pennsylvania. The average acreage and production of these six States for the years 1920 to 1924, inclusive, the data of which are presented in Table 7, well illustrates this claim, as their total production is 203,167,400 bushels or nearly 49 per cent of the total crop of the whole country.

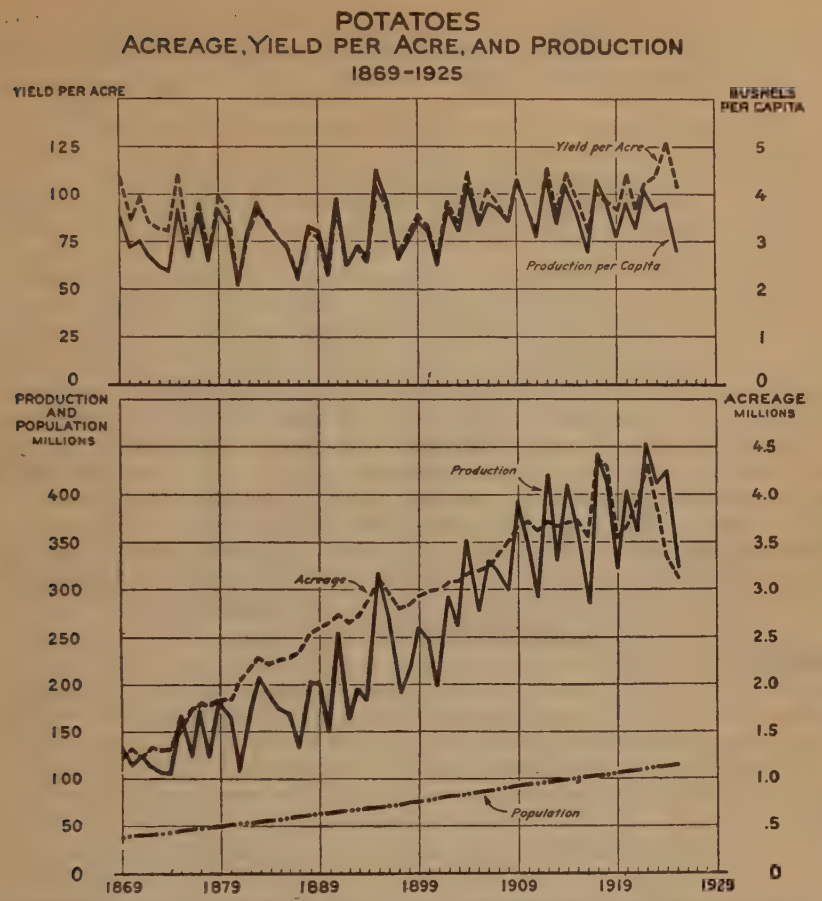


FIG. 121.—Acreage, production, yield per acre, and production per capita of potatoes, and population, 1869 to 1925

TABLE 7.—*Average acreage and production of the six leading northern potato-producing States, 1920–1924, inclusive*

State	Average acreage	Average production	Average yield per acre
		Bushels	*Bushels*
New York	330, 200	40, 820, 600	123. 6
Minnesota	394, 000	38, 524, 200	97. 8
Michigan	329, 600	35, 063, 000	106. 4
Maine	129, 200	31, 725, 000	245. 5
Wisconsin	293, 000	30, 585, 600	104. 4
Pennsylvania	248, 800	26, 449, 000	106. 3

The chief reason for the heavy production of potatoes in the six States mentioned is that of proximity to large consuming centers. On account of the bulkiness of the crop and its relative cheapness, the potato grower can not afford to transport his crop any considerable distance, with the result that those localities occupying the

most favorable position with relation to markets and which at the same time have a suitable soil and climate, possess a decided advantage over less favored localities.

Environmental Factors Affecting Potato Production

The potato is generally recognized as a cool-loving plant and as a result optimum yields can only be obtained where the growing crop is not subjected to high temperatures at least during the tuber development period.

Soils.—Although the potato is not as sensitive with respect to soil as are some other crops, it nevertheless succeeds much better on some soils than on others. Generally speaking, gravelly or sandy loam soils, if well supplied with organic matter, are the most desirable types of soil for potato culture. However, under suitable conditions a satisfactory crop may be grown on a fairly light sandy soil and a medium heavy clay soil provided the heavy soil is well drained and the light soil has a good moisture supply. Muck or peat soils are also satisfactory if well drained and well supplied with available plant food. Briefly stated it might be said that any soil outside of blowsand and heavy clay may be depended upon to produce a reasonably good crop provided the climatic conditions are favorable and it is well supplied with organic matter and available plant food.

Temperature.—The potato grower must always bear in mind, when considering the question of potato production, that the potato is a cool-loving plant and, on that account, can not be successfully grown in warm climates unless planted at such time as will insure its development during the cooler portion of the year. For example, in Florida it is possible to grow an early or a very late crop of potatoes with a fair degree of success if the necessary attention is given the crop. By planting in December or January in the southern part of Florida the early crop can be grown during the cool winter and spring months; or by planting in September the late crop will be developing its tubers during the cooler weather of November and December. It is therefore evident that by a careful observance of the temperature requirement of the potato it is possible to grow potatoes with a fair degree of success even in the South. In many localities in the Northern States it has been found desirable to delay the planting of the late or main crop of potatoes until well into June in order to avoid having the plants developing tubers during the hot dry period, which usually prevails throughout the latter part of July and the greater part of August. When the planting is so timed in the North so as to have the major part of tuber development taking place during the latter part of September and early part of October, the chances for obtaining a profitable crop are very much enhanced. Western New York and southern Michigan are good examples of localities where it has been found desirable to delay the planting of the late crop.

In this connection it is interesting to note Smith's[21] observations upon the relation of temperature to yield:

> In the United States the potato has made its greatest development in the cooler sections of the country, where the mean annual temperature is between

[21] SMITH, W. J. THE EFFECT OF THE WEATHER UPON THE YIELD OF POTATOES. U. S. Dept. Agr. Monthly Weather Review, May, 1915, pp. 222–228.

40 and 50° F. and where the mean temperature in July is not over 70° F. Further, the greatest yields of potatoes per acre are in those States where the mean annual temperature is below 45° F., and where the mean of the warmest month is not far from 65° F.

Moisture.—Careful, experimental studies have disclosed the fact that it requires 400 to 600 or more pounds of water to enable the potato plant to produce 1 pound of dry matter. This data serves to emphasize the importance of moisture to the potato crop during the period of its growth and particularly so during the development of the tubers at which time the plant is subjected to its severest test.

The importance of soil moisture to the plant may be emphasized from another angle, that of its relation to the nutrition of the plant. All plant food must go into solution before the delicate root hairs can transport it to the leaves of the plant there to be elaborated into a form that can be utilized in the upbuilding of plant tissue or in the storage of starch in the tubers. It is well, therefore, in considering the advisability of growing potatoes in any particular locality, to ascertain the normal rainfall during the growing season and its distribution during that period. In the best potato-growing regions the average total rainfall during the period between planting and harvesting late potatoes varies from 12 to nearly 18 inches.

The potato from the crop standpoint.—From the crop standpoint the potato may be considered under two main divisions: (1) The early or truck crop; (2) the late or main crop. The early or truck crop is confined almost wholly to the Southern States, whereas the bulk of the late or main crop of potatoes is produced in the northern tier of States. Roughly speaking the early crop constitutes less than 15 per cent of the total production in the United States.

Early crop-production centers. The fact that the bulk of the early crop is shipped to distant markets has led to the development of distinctive commercial production centers or areas such as the Hastings district in Florida, the Savannah district in Georgia, the Beaufort and Charleston districts in South Carolina, Beaufort County in North Carolina, the Norfolk and Eastern Shore districts in Virginia, the Eastern Shore of Maryland, the Louisville district in Kentucky, Columbia, Tenn., Fort Gibson, Okla., Fort Smith, Ark., the Eagle Lake, Wharton, and Brownsville districts in Texas, the Alexandria, St. Francesville, and Lafourche districts in Louisiana, and the Mobile and Baldwin County districts in Alabama. In addition to the foregoing the following early-production centers in the Northern States might be mentioned southern New Jersey with Salem and Bridgeton as centers, the southern part of Suffolk County, N. Y., the Kaw Valley in Kansas, the Orrick district in Missouri, the Kearney district in Nebraska, the Caldwell district in Idaho, and the Los Angeles district in California. Many other localities might be mentioned such as Vero, Wabasso, Moore Haven, Plant City, and Kissimmee in Florida, etc.

Late or main-crop production centers.—Considering the extent of the crop produced there are relatively fewer concentrated late potato-producing commercial areas than in the case of the early. This may be partly explained on the basis of a longer growing crop season, a larger percentage marketed locally, and, what is probably more to the point a less intensively specialized industry. There are, however, certain well-defined and fairly intensive areas of production

as for example Nassau and Suffolk Counties, N. Y., Aroostook County, Me., western New York, the northern half of the lower peninsula in Michigan, the north-central portion of Wisconsin, the Red River Valley of Minnesota and North Dakota, the Greeley, San Luis Valley, and Montrose districts in Colorado, the Idaho Falls, Burley, Blackfoot, and Twin Falls districts in Idaho, Multnomah, Marion, and Clackamas Counties in Oregon, the Yakima and Wenatchee districts in Washington, and the Stockton and Los Angeles districts in California. Although this list by no means includes all the commercial-production centers that might, or possibly should, be mentioned, it will serve to call attention to some of the outstanding and more widely known ones.

Interrelation of the early and late crop.—The early or truck crop is supplementary to the late crop in that it bridges over the gap that would otherwise occur during the summer season if only a late crop were grown. In addition to this it makes it possible to offset any serious shortage of the late or main crop by increasing the acreage of the early crop particularly in those sections in which the crop is normally marketed from the latter part of March to the latter part of June or early July. The relative ease of such crop expansion is well illustrated by the short crop of 1916, which was followed by a 90 per cent increase in production from the 16 Southern States over that of the preceding year.

Relation of intensive production to distribution.—The distribution of the potato crop from intensive production centers is largely governed by the season of the year in which the crop is marketed, and the competitive areas seeking the same markets. In the case of the late crop the quality of the stock and the excellence of its grading is an important factor in increasing the radius of its distribution. Volume of crop in a given locality insures better and more satisfactory transportation facilities and a keener competition on the part of independent buyers. It also makes cooperative marketing of the crop a much simpler proposition.

Practices Followed in Growing Potatoes

In the production of potatoes there are certain cultural practices which, if carefully followed, tend to insure good yields. These practices involve the selection of suitable soil, crop rotation, plowing and fitting the land, fertilization, variety to grow, good seed, size of seed piece or set, rate of seedage, depth of planting, pre-emergence tillage, cultivation of plants, spraying for insect and fungous pests, roguing, harvesting of crop, storing, and care of crop in storage.

Selection of soils and crop rotation.—The type of soil best adapted to potato culture has already been mentioned, but, as yet, nothing has been said as to its previous cropping. A definite system of crop rotation in which a leguminous crop precedes the potato crop is generally regarded as the safest plan to follow if best results are to be obtained. In northern latitudes, particularly in sections where clovers can be more successfully grown than alfalfa, a three-year rotation is perfectly feasible provided care is exercised in keeping the land free from soil-inhabiting potato diseases. Where alfalfa is grown instead of clover, a longer rotation is necessary. The shortest practicable rotation with alfalfa is four years. Many growers

practice a five to seven-year rotation. There are many localities, particularly in the South, where a crop of potatoes is grown upon the same land each year. In such cases other crops, such as corn, rye, cowpeas, velvet beans or soy beans follow the potato crop.

Plowing and fitting the land.—Depth of plowing should be based upon the character of the land. If the surface soil will permit of plowing to a depth of 9 to 10 inches or more without turning up too much subsoil it will insure better root penetration of the plants and at the same time will increase the moisture holding capacity of the soil. With a shallower top soil the depth of furrow should not exceed that of the surface soil by more than an inch as it is not

FIG. 122.—Dropping seed potatoes by hand in Virginia in furrows opened by plow

advisable to turn up more than half an inch to 1 inch of subsoil in any operation. Where the underlying subsoil is compact or verging on hardpan the use of a subsoil plow will very materially aid in providing a better seed bed.

Fertilization.—The economic use of plant food for the growing crop should be given careful consideration. It is manifestly uneconomic to use from 1 to 1½ tons of a high-grade commercial fertilizer when 1,000 to 1,500 pounds will produce practically the same result. A material reduction in the quantity of commercial fertilizer can be effected by plowing under leguminous or even non-leguminous cover crops. Where barnyard manure is available it is more economical to supplement it with commercial fertilizer than to place sole reliance on the manure alone as it is an unbalanced food, being high in nitrogen and very low in phosphoric acid and potash. When barnyard manure is so supplemented the commercial

FIG. 123.—Planting potatoes with a hand planter in Wisconsin. Land is check-rowed

FIG. 124.—A two-man horse-drawn potato planter in action. This machine as now constructed opens the furrow, distributes the fertilizer, drops and covers the seed, and marks the next row

fertilizer should be low in nitrogen and high in phosphorous and potash.

Good seed and its use.—Good seed may be defined as being true to varietal name, free from mixture, vigorous in growth, productive, and as free as possible from tuber-borne diseases. Use a good-sized seed piece, 1 to 1½ ounces in weight, and do not space too wide apart. Early varieties may be planted in rows from 30 to 32 inches apart with the sets spaced 8 to 10 inches in the row. Late varieties should be given more space, say 32 to 36 inches between rows, and 9 to 11 inches between sets in the row. Figures 122 to 125 illustrate primi-

FIG. 125.—A one-man horse-drawn planter in operation

tive methods of planting potatoes as compared with more modern methods.

Cultural requirements.—During the period elapsing between seedage and the emergence of the plants the surface of the ground should be kept loose and free from weeds. This is best accomplished by means of a light harrow so constructed as to permit of slanting the teeth, by a weeder, or a plank drag. Cultivation of the plants should be deep at first and shallower at each subsequent cultivation. Tillage should cease when the plants begin to develop tubers. Insect pests should be controlled by insecticidal applications and diseases by fungicidal preparations of which the Bordeaux mixture is the best example. Figures 126 to 128 illustrate methods of culture employed in Aroostook County, Me. Figures 129 and 130 show the spray-mixing platform and the traction sprayer used in the preparation and application of spray material for the protection of the potatoes from insects and fungous pests.

FIG. 126.—A two-horse cultivator in action loosening the soil between rows of pototoes in advance of the horse hoe

FIG. 127.—Horse hoeing the potato crop with a two-row winged horse hoe prior to emergence of the plants

FIG. 128.—A later stage in horse hoeing the potato crop. Note the ridging of the plants

FIG. 129.—A convenient spray-mixing equipment greatly reduces the labor cost of spraying. The water is pumped from the spring with a gasoline engine and wooden pump. Each step in mixing Bordeaux and filling the sprayer, except that of transferring the stock solutions, is a gravity process

Harvesting and storing the crop.—Harvesting the crop is generally considered the most laborious operation connected with potato production. The crop may be dug in either of three ways: (1) By

FIG. 130.—The pump must have sufficient power to convert the spray into a fine mist when forced through suitable nozzles to effectively protect the potato plant from insect injury and early and late blight infection

FIG. 131.—The old and laborious method of harvesting potatoes

hand (fig. 131), (2) plowing the tubers out with an ordinary plow or nonelevator type of digger (fig. 132), and (3) by a horse or tractor-drawn elevator type of digger (figs 133 and 134). The man

labor involved is successively less from hand digging to the elevator type of digger. In some sections the elevator type of digger is provided with an attachment that collects and drops the potatoes in

FIG. 132.—The harvesting of potatoes is facilitated by the use of a turn plow

FIG. 133.—A horse-drawn elevator type of potato digger

approximately bushel piles as dug. Different practices prevail in different localities with respect to receptacles used in gathering the crop and in transporting the potatoes to the storage house. For example a splint basket is used to gather the potatoes and a barrel

in which to haul them from the field in northern Maine. In western New York the slat bushel crate is used to both gather and transport the crop. A ⅝-bushel peach basket is used instead of the slat crate in southern New Jersey, whereas in the West the wire basket and the 2-bushel sack are most commonly employed.

Storage.—The object of storage is that of keeping the product stored in as good condition as possible. It also serves another very important purpose, namely that of distributing the crop throughout as long a period as is economically desirable.

Economic influence of farm machinery.—Comparative studies of the relative man-labor hours involved in the production of farm crops by hand and machine methods illustrate in a very striking manner the economic value of farm machinery. According to

FIG. 134.—A tractor-drawn elevator type of potato digger

Quaintance [22] the man-labor hours required in 1866 to produce an acre of potatoes, yielding 220 bushels, averaged by the hand method 108.9 hours, while in 1895 the same crop was produced by machinery with an expenditure of 38 hours. On the dollar and cents basis the average cost of man labor by hand-method production was $13.18 per acre, while by the machine method the cost was reduced to $5.97, or a 54.68 per cent decrease in cost of man labor. As considerable improvements have been effected in farm machinery since 1895 it is possible to claim still greater economies than are indicated in the data submitted. It is evident that if the potato, as well as other farm crops, had to be produced under existing labor costs, without the use of farm machinery other than the crude implements of 1866, the price for these products would be materially increased to the consumer.

[22] QUAINTANCE, H. W. INFLUENCE OF FARM MACHINERY ON PRODUCTION AND LABOR. Am. Econ. Assoc., 5, No. 4, pp. 1–103, 1904.

Sweet Potatoes

Sweet potatoes are believed to be of American origin and furnish another example of the many important New World contributions to the horticultural food crops. Records of the voyages of Columbus contain references to sweet potatotes and specimens were carried back as proof of the wonders of the New World. According to Sturtevant [23] the sweet potato is one of our most widely distributed food plants, being grown in tropical, subtropical, and temperate countries lying in a broad belt parallel to the Equator, and covering a very large part of the inhabited portions of the globe. They were cultivated in Virginia shortly after its first settlement, perhaps as early as 1610, certainly by 1650.[24] It was found to be especially adapted to the congenial and sandy loam soils of that region, and its culture spread to other locations to which it was adapted. During the early history of the country, it was highly esteemed and an important article of diet among the settlers.

The sweet potato being of tropical or subtropical origin thrives best in locations where the growing season is four to five months in length, with rather high average temperatures. However, it is adapted to growing in a large portion of the United States, but more especially to the southern portion where both the climatic and soil conditions are particularly adapted to it. A light, well-drained, sandy-loam soil with a clay subsoil is the ideal for growing sweet potatoes. As a farm crop it fits well into the cropping system of the Southern States, gives good yields on soils of medium depth and fertility, does not require especially close cultural attention, its running habit making it an effective aid in weed control, and, in addition, the potatoes can be stored by simple and effective methods, thereby making it available both as a local food product and for marketing during a large portion of the year. These and other points of advantage have made the sweet potato our second most important vegetable crop.

Large areas of soil suitable for sweet-potato growing are to be found throughout the southern portion of the country where climatic conditions are especially suitable for growing the crop. The maps, Figures 135 to 142, show the development and distribution of commercial sweet-potato growing in the United States beginning with 1850, each dot representing 20,000 bushels. Although commercial production can undoubtedly be pursued to better advantage in substantially the areas indicated on the maps, sweet potatoes are produced with very satisfactory results in many other localities, some of which are as far north as Canada. The sweet potato is deserving of a much wider use, especially as a home-garden crop.

Aside from climatic and soil requirements, transportation or means of getting the crop to market is of primary importance when considering the planting of sweet potatoes on a commercial scale. The crop is both bulky and heavy and can only be shipped within certain limited trade territory.

Another and equally important consideration which commends the sweet potato to the attention and consideration of southern

[23] STUTEVANT, E. LEWIS. STURTEVANT'S NOTES ON EDIBLE PLANTS. 27th Ann. Rpt., N. Y. State Dept. Agr. 1918/19. Vol. 2, Pt. 2, Rpt. N. Y. Agr. Exp. Sta., 1919, Pt. 2.
[24] WILLIAM, E. VIRGINIA 48, 1650. Force Coll. Tracts 3, No. 11, 1844.

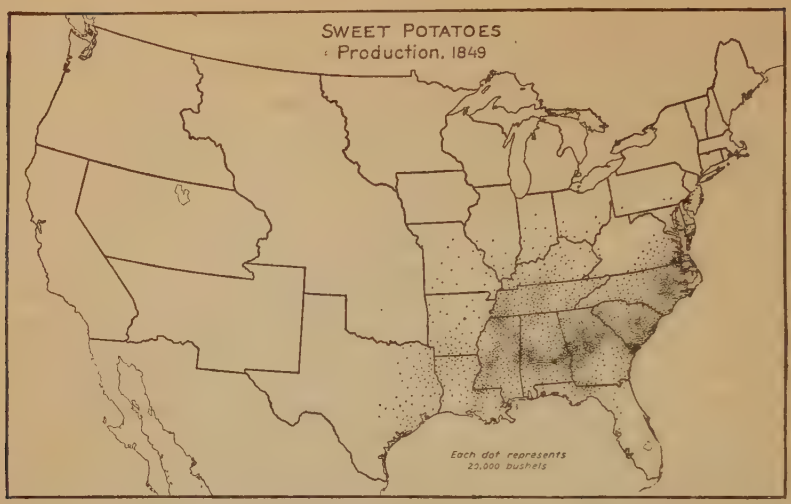


FIG. 135.—In 1849 production of sweet potatoes was largely in six Southern States east of the Mississippi River

farmers is its adaptability as a part of a balanced system of diversified farming. It is in large potential, if not actual, market demand, and one of the vegetable crops which can be grown extensively. A million acres are now devoted to the growing of sweet potatoes in the Southern States and other millions of acres of light textured soils are still available for the growing of the crop. Sweet potatoes may well be grown on a large number of farms where none are now produced, thereby adding to the farm income, also insuring against the hazards of single-crop farming.

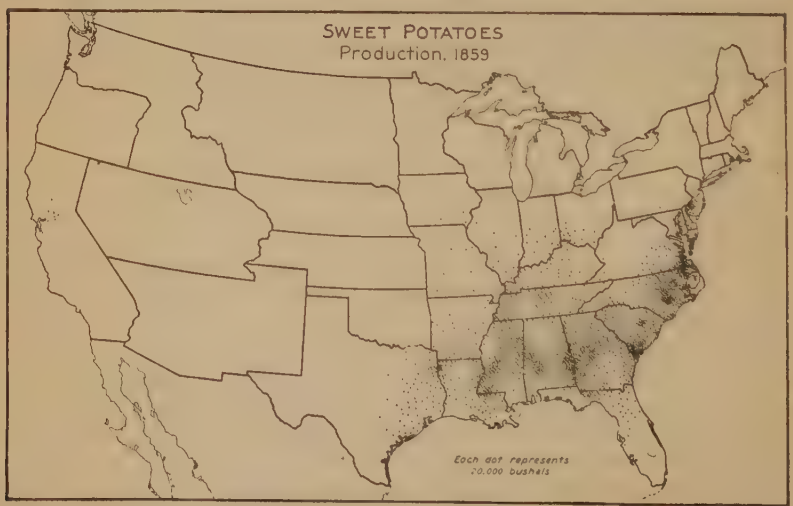


FIG. 136.—No change in the bulk of production is to be noted in 1859, although some extension of area is seen. New Jersey and Delaware show increases, and Iowa and California are added to the States growing sweet potatoes

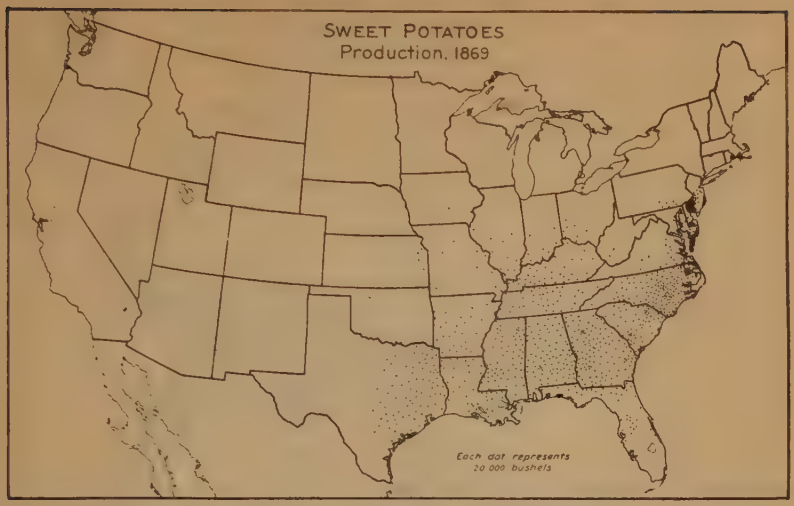


FIG. 137.—In 1869 production had fallen off somewhat in the six Southern States, had increased in New Jersey and Florida, and extended into Kansas

Crop rotation in growing sweet potatoes is important from the standpoint of soil improvement, increased production, and the control of diseases. By following a rotation which includes crops having different feeding habits, and by plowing under green manures, the fertility of the soil is improved, and larger yields of all the crops included in the rotation are realized. In sections where the potatoes are dug for early markets the land should immediately be sowed to some such crop as crimson clover, and in regions where the potatoes are not harvested until late fall, rye, winter oats, or barley, or some similar crop should be sowed to occupy the land over winter.

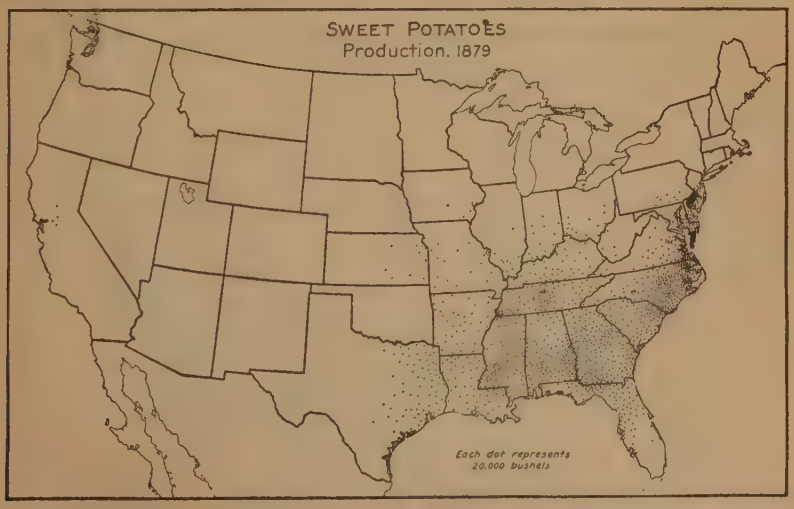


FIG. 138.—There was little change in production in 1879 over that of 10 years previous except for slight further extension in Virginia, Florida, and Kansas

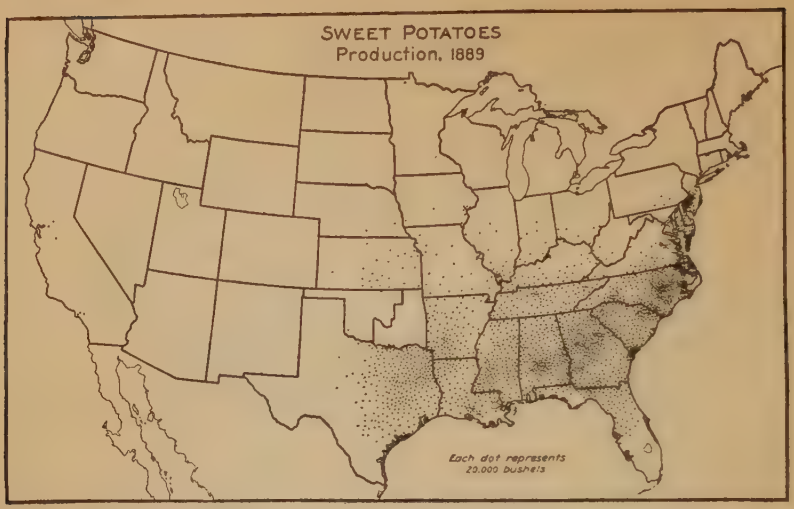


FIG. 139.—In 1889 an increased production is shown in Texas, Louisiana, Arkansas, and Kansas. Nebraska is added to the States growing sweet potatoes

Only general suggestions can be made in regard to specific rotations as these must be selected with reference to local soil and climatic conditions. In all cases the rotation should include as many soil improving crops as possible, due regard being also paid to the growing of products for which there is a market or a home need.

The procuring of seed stocks of desirable varietal and other characteristics is one of the most important problems confronting the sweet-potato grower. Although the crop is among our oldest, the building up of desirable seed stocks of the best commercial sorts has been neglected. Even our best kinds do not possess all desirable characters, but much can be accomplished in building up

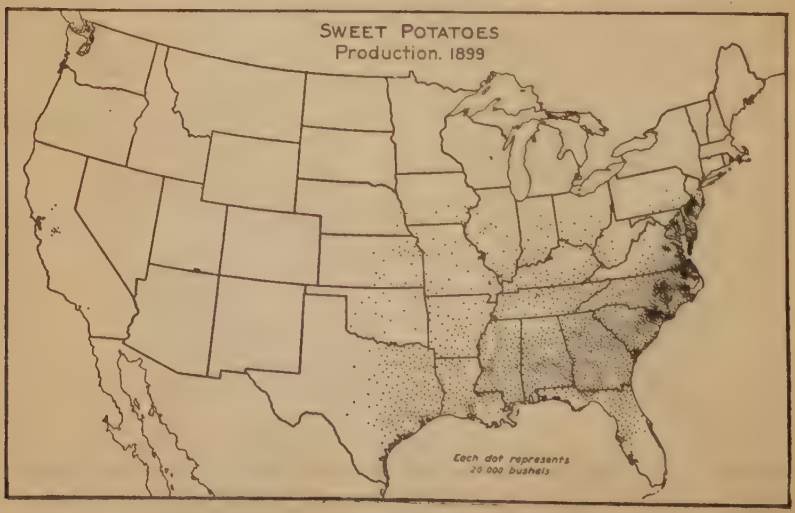


FIG. 140.—In 1899 there was a further increase in production in New Jersey, Virginia, and North Carolina. Oklahoma appears as a producer

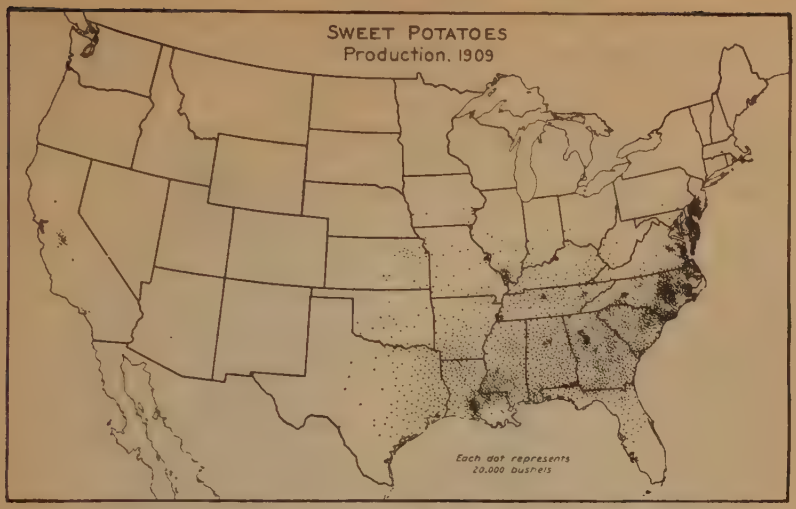


FIG. 141.—In 1909 there appears a marked concentration of production in certain States, notably New Jersey, the Eastern Shore of Maryland and Virginia, North Carolina, and southern Louisiana. Arizona is added to the list of producing States

satisfactory seed supplies by employing proved principles of selection. In some sections where the sweet-potato industry is well established and of commercial importance, the State of New Jersey (fig. 143) and the Eastern Shore of Virginia, being conspicuous examples, much has been done in the way of building up and making available in commercial quantities seed stocks of the well-known Jersey type of sweet potatoes. Seed certification is receiving attention and bids fair to accomplish as much for the sweet potato as it has for the potato. Individual growers have it in their power

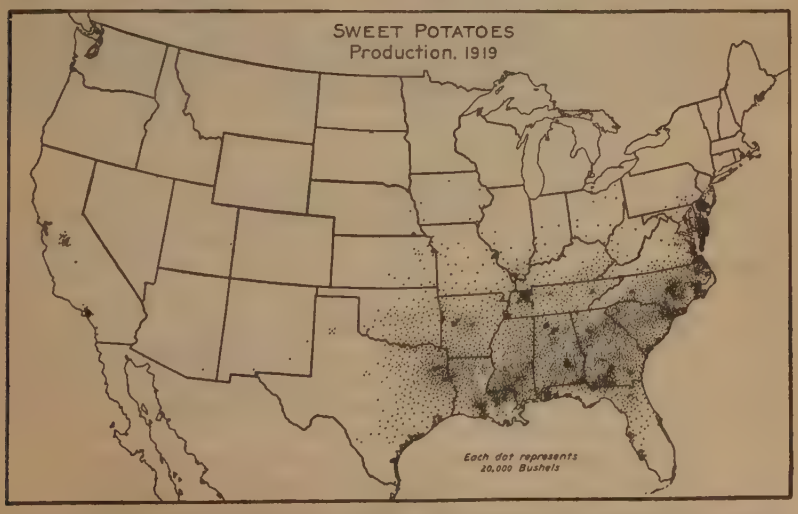


FIG. 142.—In 1919 the tendency toward concentration of production in certain areas is even more noticeable than 10 years previously. The producing area is extended in Ohio and Iowa, and New Mexico shows for the first time

to safeguard their seed supplies through intelligent field selection for freedom from stem rot, scurf, and for desirable market type, productiveness, general vigor, and healthfulness. Comparative tests using carefully selected seed stocks versus ordinary commercial stock have showed differences of as much as 25 per cent in yield in favor of the carefully selected stock. Good seed is fundamental to all crops and especially so in the case of the sweet potato.

The actual growing of sweet potatoes is an operation which closely follows the methods used with other field crops. Plowing and preparing the soil presents no special problems, except the exercise of care to avoid too deep plowing, as deep soils give long, stringy, misshapen potatoes (fig. 144). Plant production is different from the methods used in establishing other vegetable crops in the field, slips or draws taken from the seed stock bedded in plant beds (fig.

FIG. 143.—Field of sweet potatoes in New Jersey grown from selected stock

145) or hotbeds being employed in most sections for starting the crop in the field. In some cases vine cuttings are taken from plants already established and used for planting additional acreage. Seed-bed sanitation, and the treatment of seed stock to prevent transmission of certain seed-borne diseases to the field are important factors in the production of high-grade sweet-potato plants. Transplanting machines are well adapted for setting sweet-potato plants (fig. 146). Sweet-potato plants can be grown and set in the field on a large scale without difficulty, the establishment of the crop on a large acreage offering no special problems.

On account of its simple cultural requirements, the sweet potato is often neglected, and it is altogether probable that yields could be much increased through the giving of better care in the field. It gives fair yields on only moderately fertile soil, but nevertheless the use of manure, when available, and commercial fertilizers nearly

always gives profitable crop returns. It demands only moderate amounts of moisture, but when this is lacking, responds well to sparing irrigation. Its habit of growth is such that it smothers

FIG. 144.—A. Effect of deep soil on shape of sweet potatoes. B. Soil of moderate depth tends to produce short, chunky sweet potatoes

FIG. 145.—A typical sweet-potato plant bed such as is employed by the growers of the Virginia, Maryland, and Delaware region

many weeds. It does not require expensive field control methods for insects and diseases. Cultivation for the most part can be performed with horse-drawn tools, little hand work being needed.

Harvesting and handling of sweet potatoes are features of the work, which must be carried on with exacting care, as the roots must be carefully handled to avoid cutting or bruising. The product should be promptly transported to market or to a storage house, built according to proved principles. No vegetable lends itself more suitably to farm storage than does the sweet potato, and a simple, inexpensive type of storage house capable of keeping sweet potatoes for periods of four or five months with minimum losses from decay,

FIG. 146.—Plant-setting machine employed for setting sweet-potato and similar plants. The machine waters the plants as they are set

may be built at small cost. Successful storage of sweet potatoes depends on (1) the use of well-matured stock of suitable varieties, (2) careful harvesting and handling to avoid cutting and bruising, (3) storage in a heated type of house where they can be cured for several days at temperatures ranging from 80 to 85° F. with free ventilation, and (4) after curing the temperature to be reduced to about 55° F., and maintained there for the storage period. During storage sufficient ventilation must be given to prevent accumulation of moisture inside the house. The type of house which has been found to be best adapted to the keeping of sweet potatoes is a one-story, wooden, double-walled, insulated structure as shown in Figure 147, provided with ventilators in floor and ceiling, and with heating equipment such as stoves or a hot-water plant. Fortunately mechanical ventilation equipment has been found unnecessary, thereby simplifying the construction of the house and lessening the amount of attention required. On account of the comparative ease with which sweet potatoes can be grown and kept, their adaptability to farming systems, their popularity as an article of diet, and other but perhaps equally important considerations, this vegetable is destined to become increasingly popular.

Root and Related Crops

Root vegetables, including beets, carrots, parsnips, salsify, radishes, turnips, etc., are practically all of Old World origin, but assumed considerable importance as food crops early in the American colonization period. In addition to the ease with which many of the root crops could be produced under early-settlement conditions in America, these products were readily stored for winter use and thereby added greatly to the variety of the food supply of the colonists.

Nutrition specialists have during recent years so emphasized the value of root crops in the diet as to greatly increase the popularity of this class of vegetables. The storage of root crops in cellars and outdoor pits in the North has extended the marketing season for the home-grown product through the winter and into early spring months while the production of carrots, beets, and radishes in the South has become an industry of such magnitude that the more important markets of the country now receive a supply of fresh root vegetables throughout the winter.

FIG. 147.—Sweet-potato storage house having top and bottom ventilation and provided with a stove for heating

Beets

The common garden beet is a native of southern Europe and ancient Roman writers bear testimony of the esteem with which it was held by the people of that time. It was introduced into England in 1656, but it is not definitely known just when it was brought to America. According to Sturtevant, only one kind, the red beet, was listed in M'Mahon's catalogue in 1806. In 1828 four kinds were offered for sale by Thorburn and the beet has been very common in American gardens since that time. Although beets are even to-day

one of the minor commercial vegetable crops, and not included among the 20 most important truck crops, its commercial production is very general and it is especially important for home gardens.

Among the earlier varieties of beets in America was the Bassano, a white-fleshed beet with red markings. This was followed by the Egyptian of Vilmorin and later by the improved or Crosby's Egyptian which was first listed in Gregory's catalogue for 1885. Much credit is due Weyman Brothers and other gardeners of the Arlington, Mass., district for not only bringing the Crosby's Egyptian beet to a high state of perfection, but for maintaining the strain reasonably true to type throughout the period since its introduction (fig. 148).

FIG. 148.—Characteristic block of early beets grown under irrigation on a Massachusetts truck farm

Included with the beet is the Swiss chard, which has recently become popular as a summer greens on account of its tender growth during even the warmest weather. The Swiss chard, unlike the beet, has no enlarged underground root and is grown for its tender leaf stems and leaves only. The tender tops of beets have long been used as early spring greens, but the chard fills a place in the list of summer garden vegetables, and in this respect excels the beet.

The sugar beet, grown extensively in certain parts of the United States for sugar production, is also used as a garden vegetable. Its culture is practically the same as the ordinary beet, but it retains its quality better during winter storage than does the ordinary beet and has found extensive use as a table beet during the winter months. The sugar beet, unlike the garden beet, is used exclusively for cooking, being first boiled, then cut in slices and fried, and then served as a vegetable with meat courses. Owing to the high sugar content of the sugar beet, its food value is relatively high, and in addition it contains considerable mineral salts so essential to a well-balanced winter diet.

Carrots

Eastern Europe and adjoining portions of Asia are accredited with being the original home of the carrot. This vegetable was known to the ancients, and Pliny mentions it in his writings, but it was not until about the sixth century that the carrot came into prominence in England. According to Sturtevant, carrots are mentioned as being grown in Virginia in 1609 and in Massachusetts in 1629. They were mentioned in Brazil in 1647, and carrots were among the Indian foods destroyed by General Sullivan near Geneva, N. Y., in 1779. Thus it will be seen that carrots were among the early introductions of vegetables to the United States during the colonization period and like the beet soon became a staple home and market-garden product. The carrot has been more in favor as a field crop than the ordinary beet, immense quantities being grown for stock feeding, and handled in the same manner as mangels or stock beets (fig. 149).

FIG. 149.—Carrots grown as a field crop following early potatoes and in a rotation including corn, potatoes, tomatoes, and other truck crops on a large truck farm in Rhode Island

Through all history the carrot has been especially prized for its excellent table qualities, and recent publicity on the part of nutrition specialists has greatly added to its popularity. At present, our markets are well supplied with both fresh and stored carrots the greater part of the year. The carrot is found on the tables of all classes and is included among the 20 most important vegetable crops grown for the markets of the United States. The value of the 1924 carrot crop is given as $3,603,000. This, however, does not include the many thousands of bushels grown in home gardens and for stock feeding on farms. The production of carrots for the market is confined mainly to two varieties—the Danvers half long and Chantenay—although special strains and varieties have been developed for use in certain sections.

Parsnips

According to the writings of Pliny, the parsnip was one of the most esteemed of vegetables during the time of Emperor Tiberius' reign, who had them brought annually from Germany where they were said to be grown in great perfection. The parsnip is a native of the Caucasus section of Europe; in South America about Buenos Aires, and also in the Saskatchewan Red River regions of North America. It has become naturalized in the northeastern part of America. According to Sturtevant the cultivated parsnip was brought to the eastern section of America by the earliest colonists. It is mentioned at Margarita Island by Hawkins in 1564 and as being cultivated in Virginia in 1609. The parsnip was widely grown in Massachusetts in 1630. Like the carrot it was among the Indian foods destroyed by General Sullivan in western New York in 1779.

Parsnips do not possess the wide range of cultural adaptability of the carrot and it does not thrive in the warmer parts of the country to the same degree as does the carrot. For this reason it has not been grown to any extent in the South as an early-shipping vegetable but its production has been confined mainly to the northern sections where it is grown as a summer and fall crop. It can, however, be grown throughout the South as both an early-spring and late-summer crop.

Parsnips can be stored in pits or cellars or, as is the usual practice, left where they are grown until wanted for use during the winter and early spring. The flavor of the parsnip is improved by being allowed to freeze, but it loses its flavor and food value very rapidly after growth starts in the spring, and any that remain in the ground should be dug before growth starts and stored in a cool pit or cellar until used.

The parsnip has great value as a food and forms one of the important crops grown in home and market gardens of the northern United States. Like the beet and the carrot, the parsnip is a biennial and produces its seed the second season. There is a popular belief that parsnips which remain in the ground through the winter or those that grow wild the second season are poisonous. The many cases of poisoning attributed to the parsnip are, however, directly traceable to the poison hemlock (*Cicuta maculata*), which grows wild and which is often mistaken and eaten for the parsnip.

Parsnips, like carrots and beets, will produce an enormous quantity of food on a relatively small area of rich land, and for this reason are especially adapted for growing on small areas. Both American and European seed-trade catalogues offer several varieties of parsnips, but the Hollow Crown is probably more universally grown than any other.

Salsify

Salsify, commonly known as oyster plant or vegetable oyster, is of Mediterranean origin, and was well known as a vegetable by the people of the fifteenth and sixteenth centuries. Although salsify belongs to an entirely different family of plants than does the carrot and parsnip its method of culture and habit of growth are practically the same. Salsify was evidently introduced into America during the early days of colonization as M'Mahon in his catalogue issued

in 1806, includes it in his list of American garden vegetables. In 1822, John Lowell says, "though it has been in our gardens for 10 years, it has not been extensively cultivated for the market." This point bears no special significance as none of the vegetables of this character were extensively cultivated for the market at that time and we may conclude that salsify was well known among the early settlers of the United States.

The roots of salsify have a characteristic flavor similar to that of the oyster and it is from this that it gets the name "oyster plant." Like the parsnip, it is rich in food value and produces heavily on rich, deep soil. The roots may either be dug in the fall and stored for winter use or allowed to remain in the ground the same as for the parsnip. Only one variety of salsify has gained general popularity in the United States, this being the Mammoth Sandwich Island. Another type of salsify grown to a limited extent and known as "black salsify," has roots that are long, black, and tapering, but have a bitter taste which must be extracted by soaking in water before they are prepared for the table. The first mention found of black salsify is in Spanish literature and it was introduced into England from Spain, and later to the United States. However, it was grown in American gardens in 1806. It was first known in Spain about the middle of the sixteenth century for its supposedly medicinal qualities as a remedy for snake bite. Black salsify is not extensively grown and is generally considered inferior to the regular white type.

Radishes

Radishes, though not included among the major commercial vegetable crops in the United States, are grown almost universally throughout the country, both in home and market gardens. China is accredited with being the native home of the radish, but it is found growing wild in the Mediterranean region and is mentioned frequently by ancient writers. Radishes were extensively cultivated in Egypt at the time of the Pharaohs. The Greeks appear to have been acquainted with three varieties of radishes, and Moschian, one of their physicians, wrote a book on the radish. Tragus, in 1552, mentions radishes that weighed 40 pounds, and Matthiolus, in 1554, declared having seen them weigh 100 pounds each. The radish is supposed to have reached England about 1548 and was eaten raw with bread, but for the most part in the form of a sauce as an appetizer for meats. M'Mahon mentions 10 sorts in his list of American garden vegetables in 1806.

The radishes of our American gardens present a wide variety of form and color, among which are those adapted to early-spring culture and to late-fall growing and winter storage. The so-called winter varieties which have been introduced into this country during comparatively recent years from Japan and China attain enormous size and can be kept until midwinter in a cool cellar. Early radishes are now extensively grown in the South for shipment to northern markets, and are also one of the important crops grown locally in sash-covered frames for the northern markets. The radish, while accredited with being relatively low in food value from a nutrition standpoint, is considered one of the best early-spring vegetables, especially as a carrier of mineral salts and for the supplying of

vitamin C. Fresh radishes are recognized for their value in warding off scurvy and other diseases which result from a restricted diet mainly of salt meats.

Turnips

Although turnips do not appear in the list of the 20 most important field and garden vegetables in the United States, their value both as a farm and garden crop, is extremely great. The turnip is supposed to be a native of Russia and Siberia and the Scandinavian Peninsula and is of ancient culture. Columella, A. D. 42, says that the two varieties of turnip are both grown for the use of man and beast, especially in France. Pliny refers to five kinds and in one place he mentions the broad bottom flat turnip, and the globular as the most esteemed. Matthiolus, in 1558, speaks of having heard of long and purple sorts that weighed 30 pounds. In support of this report in California, about 1850, a turnip is recorded of about 100 pounds weight. The first turnips introduced into England were believed to have come from Holland in 1550. The turnip was brought to America at a very early period as in 1540 Cartier sowed turnip seed in Canada during his third voyage. They were cultivated in Virginia in 1609 and in Massachusetts in 1629. They were plentiful about Philadelphia in 1707. They are also mentioned in South Carolina in 1779. The common flat turnip was raised as a field crop in Massachusetts and New York as early as 1717.

Turnips can be grown under a wide variety of conditions and with a minimum of care and cultivation. An ounce of turnip seed sown broadcast in the home garden in midsummer, will produce all the turnips that the ordinary family can consume during the winter months. The old adage "sow turnips on the twenty-fifth of July, wet or dry" indicates the ease with which the crop can be grown. They are used as a food for man and for farm animals. Their storage is comparatively easy. Few diseases and a comparatively small number of insects molest them.

The yield of turnips under suitable conditions is generally large and though turnips ordinarily sell for a comparatively low price they form one of the important catch crops of our vegetable gardens and farms. In the South turnips are grown as an early-spring crop, also as a late-fall crop, the late crop being allowed to remain in the ground and furnish an abundant supply of excellent top greens during the winter and early-spring months. In southern Canada and in certain of the Northeastern States, great quantities of the late-keeping rutabaga type turnips are grown. The rutabaga yields heavily, can be stored economically, and is now shipped to practically all parts of the country, including the southern markets during the winter months.

Onions

The onion is one of the oldest and most interesting of the vegetable crops, and although its native country is unknown, it is believed to be of Eastern origin. Sturtevant in his Notes on Edible Plants, says: "Perhaps it is indigenous from Palestine to India whence it has extended to China, Cochin China, Japan, Europe, North and South Africa, and America." It is mentioned in the

Bible as one of the things for which the Israelites longed in the wilderness and complained about to Moses. Herodotus says in his time there was an inscription on the Great Pyramid, stating the sum expended for onions, radishes, and garlic, which had been consumed by the laborers during its erection as 1,600 talents. Wilkinson says that paintings frequently show a priest holding them in his hands at the altar. The onions of ancient Egypt were apparently mild and were consumed by all classes. That progress in the development of superior sorts was made early in the history of present-day civilization is shown by the fact that as early as the time of Agrippa, the Roman Colonies grew a Russian sort which sometimes attained a weight of 8 pounds.

In view of the popularity of the onion in early times, it is not surprising that early explorers, including Columbus, brought seed of various types of onions to the New World. According to De Candolle, Humboldt says that the primitive Americans were acquainted with the onion. Onions are mentioned by W. Wood in 1634, as cultivated in Massachusetts, and in 1779 were among the Indian crops destroyed by General Sullivan, near Geneva, N. Y. In 1806, M'Mahon mentioned 6 varieties of onions. In 1863, Burr mentioned and described 14 varieties. In 1883, Vilmorin described 60 varieties, thus showing the importance of the onion in early present-day horticulture.

Home and commercial gardeners and truck growers have always looked upon the onion as one of the most important of their crops. Although it has not been grown in a large acreage way, as compared with some other vegetable crops, nearly every home garden and most market gardens have space devoted to onion growing. In a commercial way, onion growing has developed with population increase and the building up of transportation systems without which the marketing of onions would not be possible.

The onion is exceedingly cosmopolitan in its climatic and soil requirements, and no vegetable is more widely grown, as it thrives over a very large part of our cultivated areas from South to North. The commercial onion-growing districts are located in several widely separated areas, many of these remote from centers of population where exceedingly diverse soil and other conditions prevail. Soils used vary from peat to loam and even clay although the latter type is not desirable. It can be grown and supplied fresh from some part of the United States during practically all seasons of the year. We have Bermuda type onions from the South during late winter and early spring. Pacific coast onions during spring and summer, and main-crop or storage onions from the northern regions during autumn. Our markets are never bare, indeed it is so easy to grow and market onions that there is always great danger of overproduction, as the per capita consumption of onions is low and will perhaps never approach that of some other vegetables.

Onion growing in the United States has developed along several distinct lines—the production of green or bunch onions; onion sets, these being onions grown from seed but of small size from crowding; bulb onions grown either from seed, seedlings, or sets.

The production of green or bunch onions for early markets is of considerable importance in certain localities, chiefly along the south

Atlantic coast. Multiplier and top onions and Bermudas are the kinds most widely used for this work. Ordinary onions grown from sets and sometimes from seed, are pulled while small and used as green bunching onions. A small area devoted to bunch onions often brings large returns, and this form of onion is very popular with market and home gardeners.

The production of onion sets is another form of onion growing that commands considerable attention. This industry is especially developed in the sections around Chicago, Ill., and Louisville, Ky. The production of sets is carried on by seeding thickly (fig. 150),

FIG. 150.—Field of onions grown for sets. In the growing of sets 15 to 25 pounds of seed is sown to the acre so that the plants crowd each other and produce a small but mature bulb

this causing reduced growth with premature ripening, after which they are harvested, cured, and stored for the next season's use. The increasing use of sets instead of seed for the starting of the field crop for the growing of bulbs has caused more attention to be devoted to the onion-set industry. Sets are popular with the home gardener, few gardens being established without planting a quart or two of onion sets. In sections where it is difficult to get satisfactory crops direct from the seed sets are often used. When early bulb onions are desired, they may be obtained earlier through the use of sets than from seed (fig. 151).

Bulb onions are by far the most important form of onion grown in this country. The crop is commonly divided into early and late, but there is much overlapping, and such a classification is one of convenience only. As divided, the early crop includes the so-called Bermuda type, and other similar, soft-textured onions not suitable for storage. The late crop includes the northern storage sorts, but considerable quantities of Valencias or Denias, Prizetakers, Bermudas, and others are included in this classification, based largely

upon the locality from which the onions come. The map shown in Figure 152 indicates the distribution of the onion industry in the United States. The early crop is produced in Texas, California, and Louisiana, whereas the intermediate and late crop comes from a large number of the northern and eastern States. The Denia or Valencia is a separate and distinct type of onion now attracting a great deal of attention in this country, especially in the semiarid portions of the southwest, where conditions seem especially suited to its growth.

Bermuda onions.—Several varieties of Bermuda onions are grown in this country, all being characterized by flat shape, mild flavor, and poor keeping qualities. The bulk of the commercial acreage of Bermuda onions grown in this country for early spring marketing is a winter crop, therefore, mild weather conditions are required.

FIG. 151.—Northern main-crop onions for storage are grown to a large extent on muck soils. Although hand culture is required for most of the production operations, yields are unusually large, and when satisfactory prices can be obtained returns justify the attention the crop requires. This illustration shows an eastern field on muck soil

Although the plants will withstand considerable frost they are seriously checked, if not killed, by cold weather and will not mature at the usual time. They require a very rich soil which can be obtained only by the selection of one that is naturally rich with subsequent applications of manure and commercial fertilizer. The industry has developed in southern Texas, in Louisiana, and California, where the bulk of the commercial crop is produced. Bermuda onions are being grown in other sections, but have not attained marked commercial importance outside the districts mentioned. Like many other vegetables the acreage of Bermuda onions could be greatly extended provided markets could be obtained for the product.

According to data gathered and compiled by the Bureau of Agricultural Economics, the acreage devoted to Bermuda onions in

1921, was 13,510; in 1922, 15,970; in 1923, 15,220; in 1924, 13,540, and in 1925, 12,830. Highest production was obtained in 1921 with 2,872,000 bushels, and lowest production in 1922, with 2,167,000 bushels.

Cultural methods employed in the growing of Bermuda onions are essentially the same as those for ordinary onions. As the greater portion of the crop is produced in regions having uncertain rainfall, irrigation is almost universally followed (fig. 153). The trans-

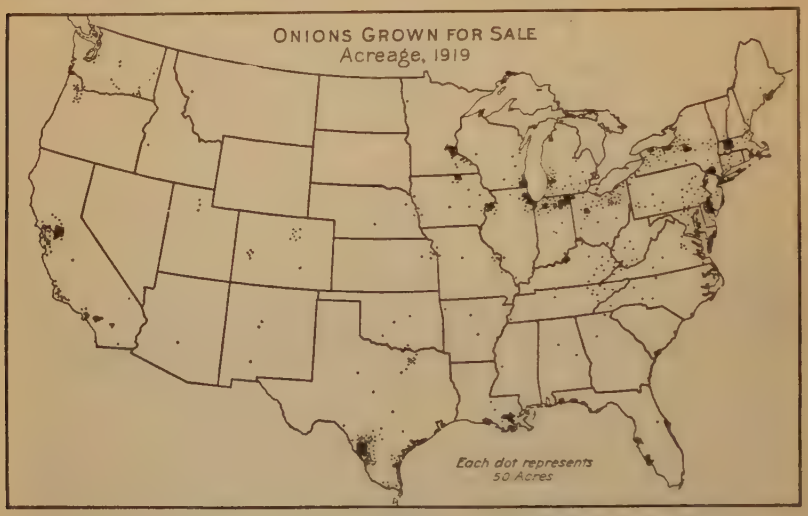


FIG. 152.—Distribution of the onion industry in the United States in 1919, including Bermudas, Valencias, and others

planting process is employed for the starting of the greater part of the crop, necessitating the use of a great amount of hand labor. Seeds are sown in specially prepared outdoor beds from the middle of September to the middle of October, and the seedlings transplanted to the field November 15 or later. At the present time seed supplied for the Bermuda crop comes from the Canary Islands and the procuring of adequate supplies of high-grade seed is one of the greatest problems confronting the growers of this type of onion. From 3½ to 4½ pounds of seed are required for starting plants for an acre of onions. This makes it possible to select only the best plants, rejecting any not coming up to the standard. Efforts have been made in the past to establish an American Bermuda onion-seed industry, but as yet this has not met with success, and it is probable that growers must for some time to come continue to depend on foreign-grown seed.

Fertilizer practices and cultural methods are essentially the same as those for other onions. Harvesting takes place as soon as the bulbs have reached marketable size and show evidences of maturity. In many cases they are pulled before the tops die down, but too early harvesting is liable to cause spoilage in transit to market. The grower usually wishes to get his onions to the market as early as possible, in order to take advantage of opening prices and is often tempted to harvest too soon.

The Bermuda onion is very perishable. It can not be stored for any considerable period, and is adapted only for marketing as soon as it has been harvested and field cured. Markets will consume only limited quantities, and as the entire crop must be handled during a few weeks, it is obvious that there can not be any considerable increase in the Bermuda-onion acreage.

Valencia onions.—Valencia, Spanish, and Denia are names applied to a group of nearly spherical, light-yellow or straw-colored, mild-flavored onions appearing in large quantities on our markets during fall and winter. In the past practically all the supply of this onion has been imported from the Provinces of Valencia and Denia, Spain, where the production of this type of onion is an important industry. In that country two distinct types of onions are grown. The first, and early-maturing sort is called the "babosa," which is a large, flat, white onion, soft, and a poor keeper, and can be shipped comparatively short distances only. This onion does not appear on our markets, going almost entirely to England and other near-by places. This onion matures in May, when shipment begins. The other, the true Valencia type, appearing on our markets, is known as the "grano." It is harvested in July and if not shipped

FIG. 153.—The Bermuda onion crop is practically all grown under irrigation. Through the use of a canvas dam these men are flooding one strip after another of the field

at once is stored in long, low sheds of bamboo, with thatched roofs and elevated floors, the structures being somewhat similar to a corn-crib, where they may be kept for months.

Although the possibilities of Valencia onion growing in this country have been appreciated for many years, it is only within the last few seasons that it has attracted commercial attention. The semiarid portions of the Southwest proved to be best suited to this type of onion. It is there that the commercial development of the

Valencia onion is taking place. According to available information, one of the earliest, if not the first, attempts to grow them in the United States came about through the purchase in San Francisco in 1886, by C. C. Morse, of 50 crates of imported onions, which had attracted attention on account of their fine appearance. Seed grown from these at Santa Clara was purchased by William Henry Maule, who introduced it in 1888 as Prizetaker. Later, about 1910, trials in New Mexico and elsewhere of seed imported and distributed by the Department of Agriculture, showed that Valencia onions of the highest type could be grown in this country.

The cultural requirements of this type of onion are similar to those of other onions. The time and method of establishing the crop depends upon climatic and other conditions. In the South

FIG. 154.—A field of northern storage onions harvested and ready for topping and crating. Such fields as this often yield as much as 500 bushels per acre

where the growing season is long, the field crop is established either through the use of seed sowed in the field, or through the use of hotbed or greenhouse-grown seedlings. Many of the best growers believe that the use of hotbed-grown seedlings give the best results. Further north seedlings are used almost exclusively. For the southern California, New Mexico, and Arizona crops, the seed is sowed in the hotbed about October, and the plants set in the field about January. Harvesting usually takes place from midsummer to autumn, depending upon the time of planting. Valencia onions are good keepers.

The procuring of an adequate supply of seed of a good character is perhaps the most important factor in the development of the Valencia onion-production industry in this country. Experience gained in the past seems to indicate that it is difficult to maintain the true Spanish type of onion for any considerable period of time in this country. All of the seed of this type which has been produced in this country tends to give an onion of the Prizetaker type rather

than the golden-colored, mild-flavored Valencia. There would seem to be no good reason why an adequate supply of seed of a character which would give a high-grade crop could not be grown in the United States. At the present time dependence must be placed on foreign supplies often of unknown quality, or upon native seed too often produced without regard for the principles of high-grade seed growing.

Main-crop onions.—Late or winter-storage onions come from many parts of the country, being of commercial importance in no less than 19 States, including Iowa, Kentucky, New Jersey, Virginia, and Washington, which are usually classed as intermediate States. California, Colorado, Idaho, Illinois, Indiana, Massachusetts, Michigan, Minnesota, New York, Ohio, Oregon, Pennsylvania, Utah, and Wisconsin are the important producing States. Exclusive of the intermediate States the acreage for the seasons 1921 to 1924, inclusive, averaged 38,450 acres.

Onions are one of the important peat soil crops and much of the storage supply comes from peat-soil regions (fig. 154). Cultural practices followed in the growing of onions are of a special character and require an abundance of hand labor, in fact, no vegetable crop has higher labor requirements than does the onion. The northern storage crop is established in the field by the use of seed or in some cases by sets. Planting in narrow rows for hand or light tractor cultivation is universal. Hand wheel hoes and hand weeding have been the accepted methods for keeping the crop clean, but labor scarcity is gradually bringing about the development of special labor-saving tools for the handling of the crop. Light tractors drawing gang seeders are being successfully employed for planting the crop. Special gang cultivators handled in the same way make it possible to work the crop with minimum labor.

Within recent years much progress has been made in the development of labor-saving devices for the harvesting and handling of the commercial onion crop. Pulling by hand and laying two or more rows together with the tops protecting the bulbs from the sun is still practiced. Topping by hand with shears is largely practiced, especially in the case of small areas, but power-driven toppers are employed by most large commercial growers. Figure 155 shows such machine in operation. In some cases the onions are allowed to remain in the windrows until sufficiently cured to make immediate topping possible. In other cases the onions are taken up, placed in slat crates, and these stacked in the field until they have dried sufficiently for topping. Whatever method is followed, care must always be taken to prevent sunburning or sprouting. These troubles are especially liable to occur while the onions are in the windrows, but may also occur in crates in the field. To make successful storage possible necessitates the use of well-matured onions carefully harvested to avoid bruising, and well cured in the fields.

The storage of types of onions adapted for keeping is not a difficult matter, requiring the use of simple and inexpensive equipment. Onions produced in southern locations where the crop is matured during the early part of the season can not be stored in natural storage during the hot summer months, but no difficulty is experienced in keeping the northern-grown late crop which matures dur-

ing late summer. Onion storage houses employed for the northern crop consist of double-walled, insulated structures, usually of frame, but sometimes of masonry, with ample provision for ventilation and sufficient heating equipment to keep the temperature above freezing (fig. 156). Farm storage of onions is a practice which could be followed to good advantage by many growers who now make a habit of selling their crop as soon as harvested, when prices are frequently low.

Other onion crops.—Although other members of the onion family do not compare in importance with bulb onions, garlic, leeks, shallots, and chives are of considerable importance, being much used for flavoring soups, stews, and other foods. Garlic is a crop of importance in a few of Southern States, chiefly Louisiana, Texas, Arkansas, and also California, and is shipped from the producing regions in quantities. The cultural requirements of these related

FIG. 155.—Onion-topping machine in operation. Where a topping machine is not used the tops are removed from the onions by means of sheep shears or knives

crops are very similar, being characterized by need for highly fertilized, well-drained soil, careful attention to all details, and much hand labor. They are crops which can not be expected to occupy large acreages as market demands are limited.

Greens and Salad Crops

Green foods form a considerable portion of any well-balanced human diet, and throughout the world's history of vegetable growing, frequent reference is found to the production and value of those crops, the leafy portion of which was eaten. This group includes cabbage, kale, spinach, lettuce, and many others. During the early days of our history a record of six crops known as the "cole" crops, including cabbage, kale, and the turnip, were most frequently referred

to. The term "cole," as applied to cabbage and other crops of this group, comes originally from the Latin caulis, which means stem or cabbage, this being transposed to caul and later to kohl in modern German, also to kaal in Danish, to kaol and kol in the Breton language, and to cal in Irish.

The generic name of *Brassica* as applied by botanists to the group had its origin in the names bresic, bresych, and brassic of the Keltic and Latin classes from whence probably emanated the names berza of the Spaniards and verza of the Portuguese; varza of the Roumanians; while krambai and crambe are the names applied by the Greeks and Latins. The original term of the Indo-Germanic tongue was karambha, meaning vegetable, and kohl, meaning stalk like caulis, which would account for the origin of the term stalk vegetable.

The species of this group are all of Old World origin and mainly of the European and Mediterranean region. A number of them like

FIG. 156.—After field curing the onions are placed in storage until needed for market. Ventilated storage houses of a type of construction which will protect the onions from freezing are employed

cabbage are found growing naturally in the districts near the seashore and are mainly plants that thrive in mild or uniform temperature climates, especially those locations that are free from extremes of temperature. On the whole the entire list of salad crops do best under fairly cool and moist conditions. They have a wide range of distribution, however, and in the United States can be grown in the extreme southern portion during the fall, winter, and early spring months and in the central portions during the early spring and the fall and in the extreme northern portions during late spring, midsummer, and early fall.

The fresh product of practically the entire group is available on our markets throughout the year, being grown either in the open under seasonal conditions, or as is the case with lettuce in hothouses, during certain periods of the year. Increased demand for fresh

salad crops in the United States during the last decade has been extremely great, owing to a certain degree to the importance that has been attached to these crops in the diet by nutrition specialists.

Cabbage

Cabbage is the most important of the so-called greens or leaf crops and one of the 20 leading vegetable crops grown for the market in the United States. Cabbage is now grown over the most of the world, the original plant occurs wild in the sea province of England, on the coast of Denmark, in northwestern France, and elsewhere. Cabbage was introduced into America at an early period and according to Sturtevant,[25] Cartier at the time of his voyage in 1540 sowed cabbages. In 1779 cabbages are mentioned among the Indian crops about Geneva, N. Y., and in 1806, M'Mahon mentions for American gardens 7 early and 6 late sorts. In 1828, Thorburn cata-

FIG. 157.—Typical field of early cabbage

logued 18 varieties. In 1869 Gregory tested 60 named varieties in the experimental garden and in 1875, Landreth tested 51 varieties.

Development of varieties of cabbage has been conducted largely in Holland and Denmark and our American gardeners have in the past been largely dependent upon European seed growers, both for the origin of new varieties and for the general seed supply. Recently American plant breeders and seed growers have developed new strains and are now supplying large quantities of superior strain and quality of cabbage seed. Recent improvements have, however, been mainly along the line of earliness, compactness of head, and uniformity in cutting period. Improvement has been especially marked in the matter of shortening the cutting period of early cabbage, making it possible to remove the entire crop at two, or at most, three cuttings, covering a period of a few days only.

[25] See footnote 23, p. 9.

Formerly, American markets were dependent for the most part upon stored northern cabbage for the entire winter supply. Although great quantities of northern-grown fall-maturing cabbage are still carried in storage warehouses and marketed during the winter months, this supply has been supplemented by the production of great quantities of southern-grown early cabbage which is marketed mainly after the first of February, and continuing from various localities until the early cabbage of the northern States is ready for marketing.

About 30 years ago there developed in the seacoast region south of Charleston, S. C., an important early-cabbage industry, the seed being sown about October 10, the plants set in the open ground the latter part of November or early December, and the crop marketed during April and the first 10 days of May. This is now preceded

FIG. 158.—A 40-acre field of cabbage plants near Charleston, S. C.

by the production in Florida, Louisiana, and southern Texas and is followed by the later crops from the Norfolk, Va., region, the Eastern Shore of Virginia, and southern New Jersey (fig. 157). Similar production has developed on the Pacific coast, which provides a continuous supply of fresh cabbage throughout the greater part of the year.

To give some idea of the enormous proportions of the early southern cabbage industry, one concern at Charleston, S. C., placed an order for 1 ton of cabbage seed of a particular variety, and a solid field of 40 acres of cabbage plants (fig. 158) is not an uncommon sight in the region south of Charleston. Southern-grown or so-called "frost-proof" cabbage plants are now shipped in carload lots from several of the south Atlantic and Gulf coast regions. These plants find a market throughout the Northern, Central, and Eastern States, and the resultant crops come upon the markets at various periods of the early summer. Occasionally portions of the

southern early crop are lost through freezing in December or January, but, as a rule, very little damage results from cold, and with a normal rainfall a heavy crop is produced. Cabbage is one of those crops which requires an abundance of nitrogenous plant food in the soil, and therefore lends itself readily to a forced growth obtained by heavy initial applications of fertilizer supplemented by side dressings of nitrate of soda and complete fertilizers during the growing period.

FIG. 159.—Exterior of a cabbage-storage house in Michigan

In the northern cabbage sections, including Wisconsin, Michigan, New York, and other States of the northern group, cabbage is grown as a late or field crop, both for immediate marketing and for storage. The greater portion of the early crop of the South consists of the small pointed heads of the Wakefield type; however, larger quantities of Copenhagen Market and other early varieties are now being grown. In the North the plantings are mainly of either the Danish Ballhead or late Flat Dutch types, although the Danish type of cabbage is now being grown very extensively for storage purposes.

Cabbage production, both in the early-crop sections and in the North, is extremely subject to fluctuation in price and to market conditions. Cabbage being a part of the standard living of a large percentage of the people of industrial centers, is consumed in large quantities. However, this consumption is to a considerable degree influenced by labor conditions and the resultant purchasing power of the labor classes. Overproduction of cabbage recurs at frequent intervals, depending upon acreage and yields. Thus far no possible means have been found for predetermining the market requirements for cabbage and the growers who plant a uniform acreage from year to year and grow cabbage in rotation with other crops are as a rule making a fair profit when the results of three to five years are averaged. Cabbage growing, especially the late crop in the North fits

into several farm rotations, especially where dairying or some other line of livestock farming is practiced. The sale of cabbage, however, on a large scale is handled on a tonnage basis. Cabbage growing on a small scale as, for example, in the general market garden, can be handled on the retail or small-quantity basis, using the pound as the unit of measurement. Cabbage is one of the most universally grown of the home-garden crops. By successive early, medium, and late plantings, a supply of fresh cabbage may be had for the table practically throughout the year, especially where suitable storage facilities are available for taking care of the late crop (figs. 159 and 160).

Nutrition investigations have shown that there is perhaps no other leaf vegetable that contains so high a percentage of mineral salts and vitamin content as cabbage, and when properly prepared it is one of the most wholesome foods.

FIG. 160.—The interior of a cabbage-storage house in Michigan, showing method of storing heads on shelves, with surplus piled in center of driveway to be used for early marketing

Kale

The various forms of kale are extremely variable and have been under cultivation from the most remote periods. The chief characteristics of the kales are that the plants have an open habit of growth and do not head like cabbage nor do they produce an edible flower like the cauliflower and broccoli (fig. 161). Some are grown as ornamental plants owing to their curling habit and the beautiful colors of their leaves. In the United States the kales are grown most extensively in the South and along the seacoasts where the late winter and early-spring climate is mild. In the Norfolk, Va., section a large acreage of kale is grown each year, the seed being sown in the fall on ridges, the plants thinned, and the crop marketed at almost any time during the winter. One advantage of the ordinary type of kale is that it does not have to be cut and used at any

specific time as does early cabbage, but may remain where grown and be cut and marketed whenever conditions warrant. Overgrown kale requires more trimming of the outer leaves than a younger product, and if allowed to remain too long before cutting it becomes somewhat tough and of inferior quality.

FIG. 161.—Field of kale showing habit of growth

Brussels Sprouts

Brussels sprouts are a form of cabbage, which instead of making a large single head, produces a number of buttons or small heads about an inch in diameter along its stem where the leaves are attached. By pulling away the lower leaves these heads are given room to develop and are highly esteemed for their delicate flavor and superior quality. Brussels sprouts were not being grown extensively for the market until recently when a large industry developed in the Delta region of Louisiana. At present brussels sprouts are packed and shipped in quart boxes like strawberries and are being offered for sale on our leading markets during the winter and early spring months.

Cauliflower and Broccoli

The differences between the highly improved varieties of broccoli and the cauliflower are slight. However, in the unimproved forms the differences are considerable. The main difference, however, lies in the fact that broccoli requires an entire year for its growth, whereas the cauliflower may be brought to maturity in from three to five months. The first notice of broccoli, according to Sturtevant, is quoted from Miller's Dictionary, edition of 1724, in which he says: "It was a stranger in England until within these five years and was called 'sprout colli-flower' or Italian asparagus."

In 1806 M'Mahon mentions the Roman or purple, the neapolitan or white, the green, and the black. In 1821 Thorburn names three varieties and in 1828 in his seed list he mentions four. Cauliflower is placed under the same botanical name as broccoli, to which as already noted, it is similar except in its period of growth.

Early writers on the growing of cauliflower all stress the importance of properly protecting the plants, as they are more tender than those of cabbage or even of broccoli. In France and in the early days of gardening in the United States belljars or glasses or some similar protection were recommended for the rearing of early cauliflower plants.

Cauliflower production in the United States, especially in the eastern sections and in California, has reached a point where it is considered as one of the important vegetable industries. Many persons prefer cauliflower to other forms of the cabbage group, and though it does not contain the mineral salts in the same proportion as does cabbage, it is considered to be a more refined dish and large quantities of it are consumed. The main difference between cauliflower and broccoli as compared with cabbage and kale is that in the case of the cauliflower and broccoli it is the fresh inflorescence or flower that is eaten, whereas in the case of the cabbage and kale the leaf growth is the part used.

There are a number of crops belonging to the cabbage group which from a commercial standpoint are of a secondary nature, but are grown and used in considerable quantities. Among these should be mentioned the form of loose heading cabbage known as collards grown so extensively during the fall and winter months throughout the Southern States. In fact, no southern garden is considered complete without its bed of collards. The special feature about collards is that during the winter, after the plants have been subjected to considerable cool weather, they form a loose head or cluster of blanched, tender leaves which are cooked and eaten the same as cabbage and are of excellent flavor. Another method of using collards is to sow the seed rather thickly in rows about 1 foot apart, then cut the young plants for use as greens when they are about 6 or 8 inches in height. Various forms of rape are also used in the same manner.

Another crop which is extensively grown for home use in the Southern States is that known as kohl-rabi. This is a dwarf-growing plant, the stem of which expands at the surface of the soil resembling a turnip. It is not known where this type of cabbage developed, but it is largely used in the same manner as turnips and is especially adapted to growing in the home garden, although it is frequently found on our markets.

Mustard

Two or three forms of mustard are used as greens in the United States including the wild or field mustard. However, the white mustard which appears to have been originally brought from central Asia is most commonly cultivated. The improved white mustard is mentioned in connection with American gardening in history as early as 1806. The young leaves cut close to the ground before the second series of rough leaves appear are sometimes used as a salad

or as an ingredient of salads to lend a pungent flavor. The older tender leaves of mustard, however, are the part most extensively used, these being boiled and served as greens.

Water Cress

Water cress and a number of land cresses belong to the same family of plants as do cabbage, kale, and broccoli, but are more like the mustard in quality and use. The list of cresses include the so-called bitter cress, pepper root of which the crisp root stalks are eaten and taste like water cress, scurvy grass which Captain Cook mentions having found about the Strait of Magellan, lamb's cress which thrives in temperate and subtropical regions and many others. Cuckoo flower, lady's smock, mayflower, or meadow cress has a piquant savor and is used as water cress. Most of the cresses named are found growing wild and are gathered during the early spring and used as greens.

The commercial growing of water cress is becoming quite an important industry in sections of the country where limestone springs abound. As for example, in the Ozark region of Arkansas and southwestern Missouri, streams of water which are fed from springs flowing out of the limestone are literally choked with the growing water cress. Water cress is highly esteemed as an ingredient of salads to which like the mustard it gives a slight pungent flavor. In sections where the cress grows naturally the beds of the streams are frequently broadened into shallow ponds from which the cress is cut at regular intervals, packed in barrels or baskets with a block of ice, and sent to the market. One of the special requirements of water cress is that it have an abundance of lime and in a few cases greenhouse men have made a fair success of growing cress on beds of soil which have been heavily limed and prepared with facilities for frequent watering. The bulk of the cress reaching our markets, however, is grown in the regions having natural springs flowing out of the limestone rock.

Lettuce

Lettuce is mentioned among the earliest cultivated vegetables of Old World origin. Doctor Sturtevant in his Notes on Edible Plants found references to its use by the Persian kings about 550 B. C., and its medicinal properties were noted by Hippocrates about 430 B. C.; praised by Aristotle in 356 B. C., and was mentioned again by Galem in 164 A. D., who gave the idea of its being in very general use at that time. Among the Romans, lettuce was very popular and Columella in 42 A. D. described 4 distinct sorts. In 79 A. D., Pliny enumerates 8 or 9 sorts and Palladius, in 210 A. D., implies varieties and mentions the process of blanching. In China its culture can be traced to the fifth century, and about the year 1340, Chaucer in England used the word "lettuce" in his prologue where he says: "Well loved he garlic, onions and lettuce."

Historical writings contain numerous references to the cultivation of lettuce during the early settlement period of the United States, and in 1806 M'Mahon mentions 16 sorts for American gardens. In 1828, Thorburn's seed catalogue offered 13 kinds. In the report of

the New York Agricultural Station for 1885, 87 varieties were described with 585 names of synonyms, and the number of both varieties and synonyms is much greater at present. The abundance of literary and historical references to the cultivation of lettuce proves conclusively that it was not only of ancient culture, but that it was considered of importance and plentifully grown by all peoples throughout the period covered by modern history. It is not definitely known when the heading sorts first came into popularity, but according to Doctor Sturtevant, figures given in the sixteenth century indicate that the heading type of lettuce was even then well known.

From the earliest colonization period, lettuce has been grown in home gardens in America, but only within the last 25 or 30 years has it become a major commercial vegetable crop. According to fig-

FIG. 162.—Packing head lettuce on a truck farm in northern New Jersey

ures compiled by the Bureau of Agricultural Economics, the commercial lettuce acreage in the United States was 31,460 in 1921, and increased to 63,060 acres in 1924, and to approximately 86,400 acres in 1925. The production increased from 9,000,000 crates in 1921 to 13,653,000 in 1924. The total farm value of the commercial crop for 1924 is given at $18,671,000, and estimates for 1925 place the value at $24,767,000. This estimate does not include the small lots which were marketed locally or consumed on farms and which add materially to the total value of the crop.

Lettuce is one of the most intensive of the 20 major commercial vegetable crops in the United States (figs. 162 and 163). Its cultivation requires considerable hand labor and though the yields and returns are often relatively high, lettuce growing is subject to many limitations, making the industry one of the most uncertain in vegetable production. Perhaps no other crop requires such definite cli-

matic and soil conditions as lettuce, and for this reason, the large commercial production has developed in certain localities such as the Imperial Valley in California, the high altitudes of Colorado, and the lake region and coastal country of the Eastern States where suitable soil and climatic conditions are found for the production of the crop at various seasons of the year. Lettuce is one of the few vegetables which lends itself to production during the spring and the fall in the intermediate section, in the northern and high altitude sections during the summer, and in the southern and low altitude regions during the winter. Lettuce is essenially a short-season crop, but its requirements during that period are extremely exacting, consisting mainly of suitable temperature and moisture conditions.

Any rich, well-drained soil which is reasonably free from acidity

FIG. 163.—Lettuce growing in cloth-covered frames in North Carolina. Large areas are frequently covered with cloth in this manner for the growing of winter lettuce

will grow good lettuce, provided moisture and temperature conditions are suitable. Commercial lettuce production is located, however, mainly upon the sandy loam soils of the West, the South, and the east coast, also on the alkaline muck areas of the Great Lakes' region. During recent years, the outdoor production of lettuce for the markets has been supplemented by the growing of thousands of tons of greenhouse lettuce. Recently, the tendency on the part of the consumer has been to use the hard-headed western types of lettuce and the growers of the loose-leaf sorts of the Grand Rapids type and the less solidly headed eastern sorts generally have found some difficulty in marketing their product in competition with that of the western growers. Florida has been an important factor in the production of winter head lettuce, growing mainly the Big Boston type which finds ready sale on the markets of the East.

Lettuce is extremely rich in certain of the essential vitamins and mineral salts, and, therefore, has come to be considered an essential

part of the diet throughout the year. Formerly, lettuce was prized in the spring, but its period of use has been extended to every month in the year, making it one of the most important of our commercial vegetable crops.

Spinach

Spinach, popularly known as "the broom of the stomach," is one of the oldest known cultivated vegetables. Doctor Sturtevant found it mentioned in a Chinese work of the seventh or eighth century. It was known as "a prince of vegetables" in Spain in the twelfth century. It occurs in 1351 in a list of vegetables used by monks on fast days. In England the name "spynoches" occurs in a cook book of 1390 compiled for the use of the Court of King Richard the Second. There is no early record of its introduction into America. M'Mahon, in his book published in 1806, mentions the prickly seeded spinach as being the hardiest kind to be sown early, followed by the smooth seeded, round-leaf kind for later sowing.

Spinach is included in the list of the 20 major vegetable crops of the United States. According to figures compiled by the Division of Crop Estimates, Bureau of Agricultural Economics, the commercial acreage of spinach in the country during 1924 was 24,590, the total production being 10,298,000 bushels, valued at $6,437,000. The acreage is estimated at 30,250 for 1925, with a yield of 11,248,000 bushels, valued at $6,802,000. The above figures do not include 9,750 acres in 1924 for canning, grown mainly in California and Maryland, with an estimated yield of 46,100 tons, and 11,190 acres grown in 1925 with a yield of about 33,100 tons. The total 1925 crop for all purposes is estimated at 41,440 acres with a farm value of $7,483,000.

Spinach is adapted to almost universal cultivation throughout the greater part of the United States and is one of the crops which especially lends itself to winter culture in the South, reaching its greatest importance as a truck crop in parts of southern Texas, and along the south Atlantic seaboard, particularly in the vicinity of Norfolk, Va. Marked progress has been made during the last few years in the development of strains of Savoy spinach which are especially resistant to diseases. One of these is the result of work done by the Virginia Truck Experiment Station at Norfolk to meet a demand on the part of the Virginia growers who were suffering serious losses on their fall-sown spinach from a disease known as "yellows." The development of this strain of spinach has been so successful that it is now being used for fall planting wherever any difficulty is experienced with this disease. Spinach has become very popular as a food during recent years, owing largely to investigations made by nutrition specialists, the results of which have brought out the value of spinach in the diet.

In southern Texas the crop is packed primarily in bushel baskets and shipped to the northern markets by rail. The crop grown around Norfolk, is moved for the most part in ventilated barrels with canvas or burlap covers. Spinach harvesting in this section is carried on at any time during the winter when weather permits and the market and the price justifies, and is completed in the spring before extremely hot weather. Following the Norfolk district the supply of spinach is obtained from points on the eastern shore of Mary-

land and up the coast through New Jersey (fig. 164), Connecticut, and eastern Massachusetts. Before the summer crop has all been harvested in the northern sections, late summer and fall plantings are being made in the South, thus affording an almost continuous supply throughout the year.

FIG. 164.—Typical field of spinach growing on peat soil in the Great Lakes region

Celery

Celery, like lettuce, though of Old World origin has now become one of the important specialized vegetable crops of the United States. Like lettuce its large-scale production has become localized in sections where a suitable combination of soil and climate, together with adequate transportation facilities, are found (fig. 165). This is particularly true of the Imperial Valley of California, of the peat-soil areas of the Great Lakes region (fig. 166) and of the sandy-loam and clay-loam soils of the Northeastern States. Another important celery-producing section has developed on the peat soils of Florida. The seasonal production of celery has also become more or less definitely divided, the Great Lakes and northeastern section producing the summer, fall, and the early winter storage crop, California following during the winter months, with Florida supplying the markets during the late winter and early spring. The early or summer crop of the northeastern section is marketed from the latter part of June through July and August. The fall crop is marketed from the fields during September, October, and until about the middle of November (fig. 167). Following this the markets are supplied from this region, the celery being stored either in field trenches or in houses. In a few cases cold storage is employed for holding celery for winter market. The bulk of the crop grown in the northeastern States, however, is marketed either direct from the fields where it is grown or from field-storage trenches (fig. 168).

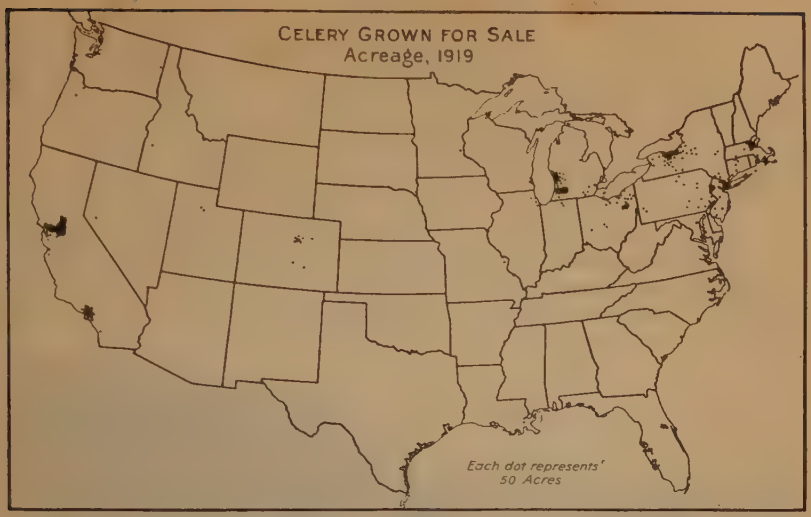


FIG. 165.—Map showing distribution of the celery industry in the United States. Each dot represents 50 acres

California and Florida crops are marketed direct from the fields by means of refrigerator transportation. Under the present distribution the market for celery is supplied practically throughout the year.

Celery is one of the most intensive of the vegetable crops from the standpoint of gross acre income. The costs of production are relatively high but on the other hand the returns are such as to make celery one of the most profitable of the vegetable crops. It is not uncommon for growers of early celery to produce 48,000 to 52,000

FIG. 166.—A typical field of celery grown on the peat lands of the Great Lakes region

plants on an acre or a little over 4,000 dozen, selling all the way from 50 cents to $1 per dozen. A gross income of $3,000 an acre, while far above the average for the country, is frequently obtained. The production of celery, however, presents a number of economic problems making it a highly specialized crop which requires special equipment and treatment. Labor costs are high and the control of diseases, and in Florida the control of insects, present serious problems. Owing to the great quantities of celery that can be produced on a relatively small area the total acreage for the United States is not large as compared with some other vegetable crops. According to statistics prepared by the Division of Crop Estimates the acreage for 1925 was 22,600. The production is given as 6,757,000

FIG. 167.—Packing celery for the market in the field

crates valued at $12,491,000. California leads with nearly 6,000 acres, New York is second with slightly less than 5,000 acres, Florida a little over 4,000 acres, Michigan a little less than 4,000 acres and New Jersey about 1,500 acres. Other States producing celery in commercial quantities in their order are Colorado, Ohio, Pennsylvania, and Oregon. In farm value the Florida crop stands highest, being approximately $5,000,000.

Dandelion

Improved forms of the wild dandelion are frequently grown for salad purposes, the seed being sown in the late summer and the plants carried over winter either in beds or in the open ground with slight protection. The tops are sold as greens early in the spring, either blanched by covering with straw or in the natural green form. Dandelion greens are highly prized by many people, but no very large industry in the production of dandelion has been developed. The present production is mainly in the vicinity of the large eastern cities, the product being sold on the local market.

Chicory and Endive

Chicory, sometimes called witloof, is grown as a greens or salad crop in a small way throughout the United States, especially in home gardens. This plant produces a root similar to salsify, these roots being stored in a cellar under moderate temperature during the winter and the succulent leaf stems forced under a blanket of straw or some similar covering material. The root is also used as a mixture with coffee.

Endive, sometimes called escarole, was brought into use during the colonization period. It was used at a very early period by the Egyptians and Greeks and reference to it frequently appears in history. As grown in the United States, it is not among the crops

FIG. 168.—Hauling celery from the field for the market

of major commercial importance, and its production is confined mainly to market gardens and for home use. Small shipments of this excellent salad crop are made.

Sorrel

Sorrel or sour dock is a native of Europe or northern Asia. According to Sturtevant, it is cultivated in the gardens of Great Britain and used the same as spinach or in salads. In the time of Henry the Eighth it was held in great repute. The common sorrel, says McIntosh, "has been cultivated from time immemorial as a spinach and salad plant." In the United States to-day sorrel finds its principal cultivation near, and use in, the larger cities of the East.

Chinese Cabbage

Pe tsai or Chinese cabbage is grown in many localities, especially near the large eastern markets. The demand for Chinese cabbage is

limited and a comparatively small acreage is required to supply the markets. Pe tsai can be used in a number of ways but is usually cooked and creamed in much the same way as is employed for cauliflower.

A number of additional crops are used for greens and salads, in fact, almost any tender succulent growth can be used for this purpose. Among the recent introductions of the salad crop is the udo, a Japanese perennial plant, which has been mentioned under perennial crops, but which requires special cultural methods in this country. Among our native plants the young, tender shoots of the common pokeweed are frequently used as greens in the early springtime. Although the berries and possibly the mature leaves of the pokeweed are poisonous, the young and tender shoots, as they come through the ground in the spring, are palatable and make an excellent spring greens, being prepared in the same manner as asparagus.

Leguminous Vegetables

Beans

Historically, beans, peas, and other members of the pulse family are among our oldest cultivated food plants. Early writers of various nationalities make frequent mention of beans and related crops, and this group of plants has exercised a profound effect on the history of the world. Proof of the antiquity and importance of this group of plants is found in the fact that earliest records seem to prove that the broad beans (*Vicia faba*), this being the bean of history, is apparently native to Asia, while the so-called kidney bean (*Phaseolus vulgaris*) is of New World origin, having been found in America by the earliest explorers. Closely related botanically, it would seem reasonable to conclude that both groups must trace back to a common ancestry, and that their world-wide dissemination is the result of influences about which we have little information.

Two types of beans, the kidney, including field and garden varieties, and the Limas, are of great importance to New World horticulture. The broad beans are grown only in cooler sections of the country, chiefly Canada, while the soy bean (*Glycine hispida*) and the cowpea (*Vigna sinensis*) are of great importance, and though not, strictly speaking, horticultural crops, they are largely used as food and in truck-crop rotations. In fact, it would be difficult to maintain soil fertility for vegetable production without the aid of these plants. They are nitrogen gatherers and add large quantities of organic matter to the soil, making it possible to make the best use of commercial fertilizer. The velvet bean (*Mucuna utilis*) is another important member of this group of plants, thriving only in the warmer sections, where it is extensively used as a forage and green-manuring crop.

Various classifications are used for purely horticultural species of beans, but from an economic standpoint they can be divided into kidney beans green and dry, and Lima beans green and dry. This does not of course include other types mentioned in preceding paragraphs, whose comparative economic importance is much less than

these. Large quantities of kidney beans are used as green snap beans for market and canning, while the consumption of dry beans for canning with pork and otherwise, in soups, and for storage and later use after soaking is enormous.

Climatic requirements of beans.—No group of plants presents wider variations in climatic, particularly temperature requirements, than is found among different types of beans. The broad bean will thrive only under cool conditions, whereas velvet beans are adapted to growing in regions of high temperatures, but need generous supplies of moisture. Of the types of greatest horticultural importance we find wide differences in climatic requirements. The Limas are at home only where moderately high temperatures prevail. The kidney beans are less sensitive to cooler conditions but at the same time grow luxuriantly in southern sections, especially those varieties produced

FIG. 169.—Map showing distribution of the dry-bean industry in the United States in 1919

as green snap beans. The tepary bean (*Phaseolus acutifolius*) thrives under severe temperature and moisture conditions such as are found in the Southwest. Beans are grown on a wide variety of soil types, the sandy loams of the Gulf coast and Atlantic seaboard regions producing large quantities of green beans. The heavier soils of the North and West are adapted for the growing of both dry and green beans. Dry beans can be produced in the South, but insects and diseases limit commercial production.

The map, Figure 169, shows the distribution of the dry-bean industry, including Limas and others. The companion map, Figure 170, shows the distribution of the snap-bean industry. This industry is divided into two distinct parts—the growing of beans for market, and their production for canning. The latter phase of this subject is discussed under canning crops.

Dry beans.—Twenty years ago dry beans were our second vegetable crop, being outranked only by potatoes. Since that time sweet potatoes have taken second place. Beans, however, are firmly estab-

lished in the esteem of the public, and sure to continue to occupy an important place in our food requirements. The 1919 census showed that the acreage devoted to dry beans that year was 1,161,682, with a production of 14,079,093 bushels, valued at $61,795,225. According to the data gathered and compiled by the Bureau of Agricultural Economics, the dry-bean acreage of all types in the United States for the years 1924 and 1925 was 1,545,000 and 1,579,000, with crops amounting to 14,856,000 and 19,100,000 bushels, respectively. The farm value of the crop on December 1 was $55,239,000 and $62,388,000 for the two years. Moreover, production figures gathered by the bureau for the years 1922, 1923, 1924, and 1925, as shown in Table 8, indicate that there is a steady increase in bean production and consumption.

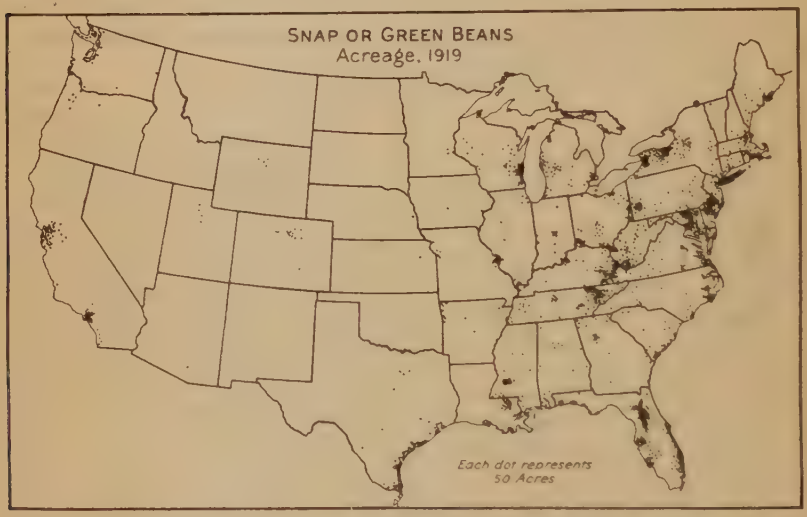


FIG. 170.—Map showing distribution of the snap bean growing industry in the United States. Each dot represents 50 acres

TABLE 8.—*Acreage, production, and value of dry beans in principal producing States, including beans for seed purposes, 1922–1925*

[In thousands, i. e., 000 omitted]

	Acreage				Production				Farm value, Dec. 1 price			
	1922	1923	1924	1925	1922	1923	1924	1925	1922	1923	1924	1925
	Acres	*Acres*	*Acres*	*Acres*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
New York	108	130	140	132	1,512	1,690	1,820	1,426	5,746	6,591	6,916	6,560
Michigan	458	568	557	614	4,809	6,532	5,848	8,289	17,553	21,556	18,421	24,453
Wisconsin	8	10	10	12	76	90	85	132	274	360	289	422
Montana	4	23	34	40	52	264	408	500	179	977	1,346	1,525
Colorado	81	170	290	320	405	1,360	986	2,240	1,782	5,032	3,957	5,376
New Mexico	63	69	110	114	198	345	550	399	891	1,449	2,090	1,317
Idaho	26	45	69	72	364	990	1,346	1,584	1,238	3,564	5,519	4,277
California	324	299	161	240	5,346	4,694	2,254	4,080	20,048	18,776	11,721	16,728
Total	1,072	1,314	1,371	1,544	12,762	15,965	13,297	18,650	47,711	58,305	49,259	60,658

Good seed of a suitable variety, moisture in moderate amounts, soil of good texture, reasonably supplied with plant food, a well-prepared seed bed, careful and rather shallow planting in rows wide enough for horse cultivation, and thorough shallow cultivation, are some of the important factors in dry-bean growing. Harvesting is accomplished by using an implement which loosens the plants from the soil, two rows being harvested at a time and left in a windrow. In some sections beans are left in bunches or in windrows in the field until ready for threshing. In other regions they are stacked around poles until dry enough to thresh. The threshing of the commercial crop is usually accomplished with custom machines which operate on the same principles as grain threshers.

Practically all features of dry-bean growing are similar to other field crop operations. The plant does not require much hand labor as practically all operations can be performed with the aid of machinery. The plant is leguminous in character, and when properly handled can be made a desirable member of the farm rotation. It is, moreover, well adapted to large areas, particularly in the Northwest, where the choice of crops is limited. It presents no special storage problems except in the South, and the weight and bulk per acre are small, making it possible to grow it profitably in sections not having the best of transportation facilities. Consumption capacity of our markets is the factor which must be given especial consideration in deciding dry-bean acreage.

Green beans for market.—Information showing the total acreage and value of the snap-bean crop is not available. Thousands of market gardens around the towns and larger centers of population, devote considerable areas to growing snap beans, but much of this does not appear in census or other statistical data. Information showing the acreage and production of green beans for shipment has been gathered by the Bureau of Agricultural Economics. The data covering the years 1924 and 1925 as shown in Table 9, gives a comprehensive idea of the distribution and relative importance of the green-bean industry.

TABLE 9.—*Acreage and production of snap beans, 1924 and 1925*

[In thousands; i. e., 000 omitted]

	Acreage		Production	
	1924	1925	1924	1925
EARLY CROP	*Acres*	*Acres*	*Hampers*	*Hampers*
Alabama	1,060	680	52,000	45,000
California	2,000	2,000	215,000	450,000
Florida	19,780	20,530	1,484,000	1,663,000
Georgia	1,850	1,260	104,000	66,000
Louisiana	4,800	7,090	422,000	525,000
Mississippi	2,800	2,120	157,000	142,000
North Carolina	2,630	3,200	316,000	329,000
South Carolina	4,490	3,540	364,000	304,000
Texas	3,030	4,730	361,000	364,000
Virginia, Norfolk, and Eastern Shore	3,720	3,720	480,000	424,000
LATE CROP				
Illinois	600	550	48,000	37,000
Maryland	2,550	2,750	178,000	275,000
New Jersey	8,400	10,000	1,092,000	1,150,000
Tennessee	2,260	1,400	264,000	147,000

Methods followed in producing this crop follow established cultural practices for similar plants. Considerable hand labor is required for the picking, making it more suitable for growing in limited acreages than in large fields. It is a short-season crop, requiring only a few weeks from seed time to harvest, and gives quick returns.

Peas

A very large proportion of the peas grown in the United States are sold fresh or canned. Seed, and use as split peas, or otherwise, in soups, constitute the other principal purposes for which dry peas are grown. The canning of peas is a great industry and will be discussed elsewhere.

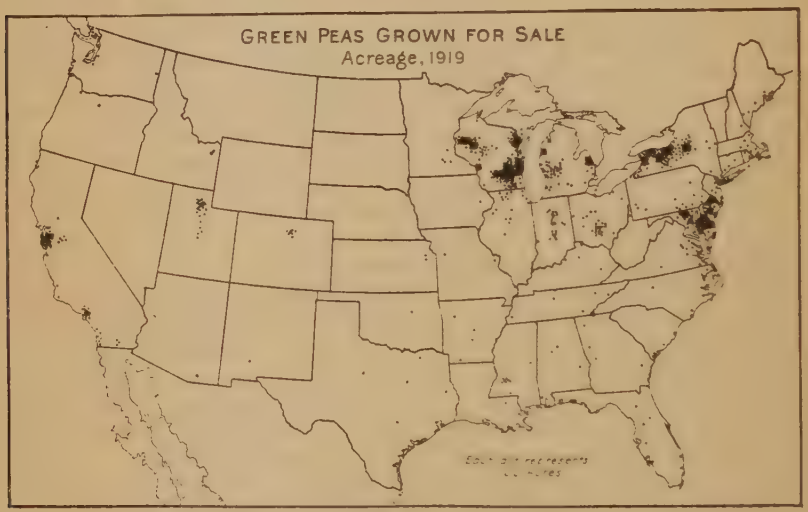


FIG. 171.—Map showing distribution of production of green peas grown for the market in 1919

Fresh peas for market are a deservedly popular table vegetable. They are grown in most home gardens throughout the United States, and thrive only at seasons when the temperature is cool to mild. Heat and excessive humidity are distinctly harmful to peas. It is not surprising that a large pea-producing industry has developed in sections where climatic conditions are favorable. In 1925, according to data compiled by the Bureau of Agricultural Economics, about 25,000 acres were devoted to the growing of green peas for market, the production amounting to about 1,750,000 hampers. North Carolina, California, Mississippi, Florida, New York, Virginia, South Carolina, and other States are important contributors to the supply of early peas (fig. 171).

Garden peas are more discriminating in their cultural requirements than beans, but given suitable weather and soil conditions can be grown without special difficulty. The hand picking of peas for market is a task of considerable magnitude. Peas have the advantage of being a short-season crop which gives quick returns, and land devoted to peas during early spring may be used for later

crops of other vegetables, making it possible to obtain larger acreage returns for the season.

Peanuts

Peanuts were found in ancient mummy graves in Peru by E. G. Squier exploring in 1877, also by W. E. Safford in 1887. This would seem to prove conclusively that the peanut is a native of the New World. According to tradition, peanuts were introduced into Virginia during the early days of colonization presumably by the slave traders as food for the slaves. Jefferson spoke of its culture in Virginia in 1781, and it is mentioned as a garden plant by M'Mahon in his book published in 1806. The culture of peanuts in Virginia apparently started in the region around Jamestown where the crop thrived from the start because of what is now known to be almost ideal soil and climatic conditions for their development. During the early days peanuts were grown largely in gardens and in small patches and a few were roasted and sold on the street in the towns of Virginia and later in New York and other eastern cities.

It was not, however, until about the time of the Civil War that peanuts became of any considerable importance as a commercial crop. Necessity for some crop that would yield a cash return caused the farmers of Virginia and North Carolina to plant peanuts as a regular farm crop immediately following the Civil War. Thomas Rowland of Norfolk, who is referred to as the father of the peanut industry in America is accedited with the establishment of the first regular peanut business. Norfolk was a small place in those days and the farmers of the vicinity brought their crops of peanuts to this market by boat. According to an article written by P. D. Gwaltney of Smithfield, Va., published in the Smithfield Sentinel of May 6, 1898, the first peanut market was established at Mill Swamp, Va., by Lemuel Womble who "traded in" the small quantities offered by the farmers in the neighborhood and made his first shipment consisting of a few bushels to Norfolk by the Thomas & Adams packet. This was before the Civil War and there was a continued increase in acreage in that community, some crops reaching 400 or 500 bushels and a few large farmers in Southampton County raised nearly 1,000 bushels each, but these were exceptionally large crops. The price of peanuts in those days was about 75 cents per measured bushel. They were not weighed nor were they carefully assorted when picked from the vines. After the war, an impetus was given the peanut business and in a few years it was the principal money crop of Isle of Wight, Surrey, Sussex, Southhampton and adjacent counties, also in parts of North Carolina. The popularity of the peanut spread following the Civil War owing primarily to the development of the sale of fresh roasted peanuts.

The peanut crop of the United States occupies about 1,000,000 acres each year, the annual production amounting to approximately 750,000,000 pounds. The farm value of peanuts is perhaps not far from 5 cents per pound from year to year, but aside from its actual cash value, it has many advantages which commend it to the careful consideration of the southern farmer.

In common with other popular food crops, the rise of the peanut in the esteem of the public has been due to its outstanding charac-

teristics. Being a leguminous crop closely related to beans and peas, it possesses the high food value of other members of this family and has qualities which make it possible to use it in many ways not common to other members of this group of plants. Formerly, it was used almost entirely for eating from the shell but in time it came to be used for the making of candy, cakes, and other similar products. Within the past few decades other uses for peanuts have rapidly developed and at the present time large quantities are employed for the making of peanut butter, peanut oil, and as salted goods. The meal resulting from the manufacture of peanut oil has been found to be a most excellent source of protein as an ingredient of dairy and poultry feeds. Peanut hay is a valuable feeding material and when properly cared for adds materially to the farm return.

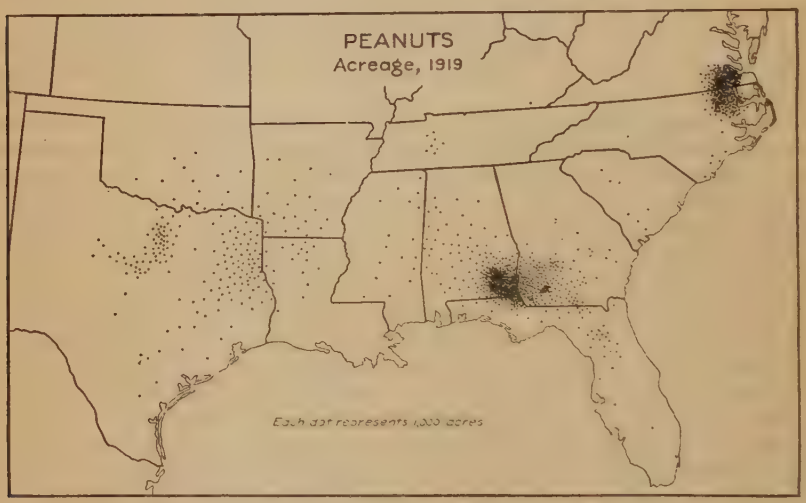


FIG. 172.—The sections of the United States where the peanut industry has reached its greatest development

Distribution of the peanut industry.—In common with the sweet potato the peanut is especially adapted to the South, as it requires a long growing season and light textured soils, both of which are found in the Southern States. As a matter of fact the peanut-growing industry in this country can be increased many times in the South before difficulty will be experienced in finding climatic and soil conditions suitable for the crop. The future growth of the peanut industry in the United States depends upon economic conditions and not upon our ability to grow the crop. The map, Figure 172, shows the sections where the peanut industry has reached its greatest development. Although the industry is especially intensive in some regions such as eastern Virginia, North Carolina, and southern Georgia, it is well distributed over most of the Southern States.

The peanut is suited to established or desirable cropping plans for most of the region in which it is adapted. Although a leguminous crop, it can not be looked upon as a soil improver, when the roots bearing the nodules containing the nitrogen gathered from the air are removed from the soil in harvesting. Certain types of harvesters

sever the plant between the pods and the roots, thereby leaving most of these valuable parts in the soil. When such harvesting is practiced the plant does not exhaust the soil to the same degree as when the entire plant is removed, but the peanut should be treated as any other farm crop which removes large quantities of highly concentrated plant food from the soil, and means taken to restore this material to the soil. Good cropping plans, including the peanut, may readily be worked out and followed. Work carried on at the Pee Dee Experiment Station, at Florence, S. C., over a period of years shows that it is possible to grow peanuts, sweet potatoes, and a forage or hay crop in rotation with constantly increasing yields of these products and an apparent increase in soil fertility. Such rotation gives carbohydrates, proteins, fats, and forage for a balanced livestock ration. Rotations of a similar character can be planned for the entire area to which peanuts are adapted.

Other and equally potent reasons exist for the wide distribution of the peanut. It is an excellent addition to the group of southern crops which have made diversification possible. A few acres of peanuts on a farm is a splendid insurance against total loss of farm income. It ranks high in food value, a pound of shelled peanuts containing as much energy as a pound of meat. From the point of view of animal nutrition, it has many things in its favor, proof of this being found in the fact that there is a strong and growing demand for peanut products for use in the preparation of highly concentrated dairy and poultry feeds.

Soil.—Light soils are best, a sandy loam being ideal. Heavy, dark-colored soils discolor the pods and interfere with the penetration of the "pegs" into the ground. Millions of acres of almost ideal land for peanuts are to be found throughout the South. It must be well drained, moderately fertile, and reasonably free from trash which would interfere with the planting and cultivation of the crop. Peanuts are usually planted on land which has been devoted to some crop which has left little trash, and it is very necessary that the land be reasonably free from weeds, especially crab grass.

Fertilizers.—With proper attention to crop rotation only moderate applications of commercial fertilizer are necessary to obtain good crops of peanuts. In many cases fertilizer residues from preceding plantings of potatoes or other heavily fertilized crops may be sufficient for the peanuts. The important point in the whole matter is that peanuts can be produced without expensive applications of plant food. They are perfectly at home on soils with moderate fertilization, which have been maintained in a reasonable degree of productiveness through the practice of farming systems within the reach of any operator, and which include the intelligent combination of crop rotation and commercial fertilizers.

Peanut seed.—High-grade seed is just as important with the peanut as with corn, wheat, or any other farm crop. Poor seed is usually responsible for failure to obtain good stands with resulting decrease in yield. The cereal crops of the country have been increased many millions of bushels each season through the use of good seed, and the same opportunity exists with the peanut. As is the case with many other crops, the individual grower of peanuts has it in his power to build up good strains of peanut seed which

may be constantly improved from year to year. The same results may be accomplished through cooperative efforts on the part of a few neighbors, large associations or commercial growers of peanut seed who have the proper viewpoint and who are willing to give the matter the painstaking care and attention which the production of strictly high-grade peanut seed demands. Whatever the methods employed, good peanut seed should always be used. The difference between a good and a poor stand may be enough to make a handsome return on the additional cost of the good seed. Moreover, high-quality peanuts which command the best prices can not be grown from scrub stock. If a crop which will return the highest price is to be expected, seed of high yielding qualities must be employed. Figure 173 shows a characteristic field of peanuts grown from good seed.

FIG. 173.—Field of peanuts planted from selected seed and having a good stand. Crop grown in rotation with corn

Cultural care.—The planting, cultivation, and care of the peanut is somewhat different from standard practices followed with the cultivated field crops produced in the sections to which the peanut is adapted. However, no great amount of special equipment is needed, and this should not be a limiting factor in the growing of peanuts. Soil preparation presents no special problems, being the same as for other field crops. Care should always be taken to either use soil free from trash or at least to bury trash so deeply that it will be out of the reach of planting and tillage tools. The seed may be planted either shelled or unshelled. The use of shelled seed allows more careful selection of good plump peas, and when the seed is carefully handled usually gives a more uniform stand. Breaking of the thin skin covering the peas or other rough handling is sure to injure the germinating quality of the seed, lower its vitality, and result in poor stands with lowered yields. Large-podded sorts, such as the Virginias, may be easily shelled by hand,

with less chance of injury than is the case with machine-shelled seed. The small types such as the Spanish are more difficult to shell by hand, and it is practically necessary to use a machine. When mechanical shelling is used, care must always be taken to avoid injuring the seed. In any case the seed must be carefully sorted by hand and all injured, moldy, immature, or undersized peas removed. Several years' work at the Pee Dee Experiment Station at Florence, S. C., shows that peanut seed may be shelled as much as six months before planting time without injury to its vitality or reducing the crop. From this it is evident that peanut seed may be prepared for planting during the winter months when most growers have the time to give the work close attention.

Uses.—The peanut is now grown for two distinct purposes; (1) as a market or money crop with peanut hay as a by-product, or (2) planted either between rows of corn or as a special crop for forage. The crop grown with corn or other similar plantings is often har-

FIG. 174.—Inexpensive implement adapted to the digging of peanuts. A. The curved bar is so arranged that it will cut off the roots just below the peanuts. B. Same implement in operation

vested by hogs. Hogs are also employed in most of the commercial peanut sections for utilizing peanuts left in the ground at harvesting time. A very important industry, the production of specially cured hams, has been built up as a result of this practice. Peanuts grown for forage and harvested by hogs may be looked upon as an important soil-improving crop, as the land is thus supplied with organic matter and the nutriment contained in the peanuts and vines is nearly all returned to the soil. Peanuts grown for the market require special methods of harvesting and curing. Removal from the soil should be done with a type of implement which severs the roots just below the pods, leaving the nitrogen-bearing nodules in the soil. Harvesters built with a sharp knifelike cutter, so attached that it runs a few inches below the surface, accomplishes this in a satisfactory manner (fig. 174). By employing equipment of this character, most of the nitrogen gathered by the plants is left in the soil for the use of later crops.

Perhaps the most important factor in obtaining high-grade peanuts is the care given and the methods followed in handling them

while in the field. Through long experience growers have found that bright, sweet, plump, clean peanuts can be obtained only by lifting the entire plant, with the exception of the lower roots, from the soil with the peanuts adhering, and stacking them around small poles to which two crosspieces have been nailed a few inches above the ground. Curing in windows may succeed now and then in sections where there is little rainfall at harvesting time, but the farmer who follows this method is always taking a great risk of losing his crop. In removing the plants from the soil care is taken to keep them straight as the pods are placed next the pole. This is done for the reason that it protects them from the weather, keeping the pods bright and clean and allowing them to cure slowly as the vines dry, giving a maximum proportion of plump peas. By stacking the peanuts a bright hay with the leaves practically all adhering

FIG. 175.—Method of curing peanuts by stacking the vines around small poles

is obtained, and good peanuts and hay can seldom be secured unless the stacking method is followed (fig. 175). The more general adoption of these methods throughout the entire peanut-growing sections of the country is recommended as a desirable practice wherever peanuts are grown for harvesting other than with livestock.

Handling.—The development of machinery for the picking of the pods from the vines has done much to extend and increase the peanut-growing industry. Hand picking is slow and it is difficult to handle a large crop without the aid of mechanical pickers. Before the development of machinery for removing the pods from the vines, peanut picking frequently lasted all winter. A satisfactory peanut-picking machine must remove the pods from the vines with a minimum amount of breakage of the pods, as broken pods and cracked and damaged peas lower the value of the product (fig. 176). The use of mechanical pickers is necessary in the production of the crop

in a large way. Peanuts are bagged, using sacks about 32 by 36 inches, which hold approximately 4 bushels.

The hay is a valuable by-product as it has a feeding value fully equal to clover or alfalfa. It often represents a considerable part of the farmer's profit, and should be carefully handled so as to conserve its full value. If the peanuts are as dry as they should be when the picking is done, the hay may be baled which makes it more convenient to handle (fig. 177).

Storage for peanuts must be dry, well ventilated, and of such nature that they can be protected from rats, mice, and other animals. Few growers have suitable storage for peanuts, and the crop is usually moved from the farm as soon as picked. However, the farmer would often find it advantageous to hold his crop on the farm. The disposition of the peanut crop by the grower is effected

FIG. 176.—Type of picking machine used for removing peanuts from the vines

by direct sale to buyers, sale on commission, through growers co-operative associations, or otherwise. The marketing of the crop follows established methods discussed elsewhere.

Few southern crops are capable of yielding a wider variety of product, aside from its familiar use for eating out of the shell.

Peanut oil is used in large quantities for the making of margarines, soaps, and other manufacturing purposes, and as a salad oil. The crushing of peanuts is carried on in cottonseed-oil mills, using practically the same equipment as employed for cottonseed. Peanuts can be stored and kept until the cottonseed-crushing season is over and then handled, thereby greatly extending the length of the season over which the mill operates. Peanut oil sells in competition with other food oils and the profitableness of crushing peanuts depends on the market price of peanuts and the price of oils, whose price affects that of peanut oil. Shelled peanuts contain from 40 to 50 per cent of oil, the exact amount depending upon the variety,

their dryness, and maturity. A ton of unshelled peanuts yields from 500 to 700 pounds of oil, about the same quantity of meal, the remainder being shells. During the early days of peanut-oil manufacture there was little demand for the meal, as its feeding value was not appreciated. This was due in a large measure to the general practice of crushing the peanuts in the shell which resulted in the production of a low-grade oil, and a meal which had low feeding value. Meal made from unshelled stock has only about 25 per cent protein, whereas that from shelled, graded, and cleaned stock may have as much as 45 to 50 per cent protein. Moreover, oil made from high-grade shelled stock is far superior to that from unshelled goods.

It is impossible to estimate the quantity of shelled peanuts used in the United States annually for the manufacture of peanut butter. High-grade peanut butter is appetizing and has high food value. Pound for pound it contains more protein than round steak, but costs less. Formerly looked upon as a delicacy for the use of invalids and for light luncheons, it has become a standard food, being used in large quantities by all classes.

The quality of peanut butter can not be above that of the raw product, it being necessary to employ high-grade peanuts and per-

FIG. 177.—Peanut hay being baled as it comes from the peanut-picking machine

form every manufacturing operation with painstaking care (fig. 179). Most of the high-grade peanut butter is a blend of two or more varieties, Spanish and Virginia types being employed. Roasting, blanching, or the removal of the thin inner skins, removal of the germs or hearts, and hand picking are all essential to obtain a high-grade product. Good peanut butter can be made only from stock which is suitable for serving on the luncheon or dinner table. Grinding is accompanied by the addition of a small quantity of salt, and the product is sealed in suitable containers.

Numerous confections are being made from peanuts, and the quantity of peanuts that are now shelled and used for manufacture far exceeds their use in the shell. Millions of pounds of peanuts are consumed on farms, and owing to their adaptation to a large part of the South, their suitability to a place in established cropping systems, their high food value, and the wide diversity of uses, the peanut is to be regarded as one of the most important of our southern crops.

FIG. 178.—Interior of peanut-butter factory, showing method of hand picking the roasted peanuts before grinding into butter

Special Crops Grown as Vegetables

Sweet Corn

Corn is a native of the Western Hemisphere and is of greater economic importance than any other crop of New World origin. Proof of its origin and antiquity is found in many places and comes from numerous sources, as, for example, in Peru, it is recorded that Squier found thick, short ears of maize, a jar of maize (apparently shelled), and other equally convincing evidence in the burial places of the early peoples inhabiting that country. Tschudi describes two kinds of maize which were taken from tombs, apparently dating back to the dynasty of the Incas. It was held in such high esteem by these people that their palaces were decorated with the ears, stalks, and other parts of the corn plant, wrought in gold and silver. In some cases entire fields of maize were represented.

According to Sturtevant's Notes on Edible Plants, the first mention of corn in North America seems to have been in the Icelandic

Sagas. At Hop, supposed by Professor Rafn,[26] to be in the vicinity of Taunton River, Mass., Karlsefne,[26] in 1006, "found there upon the land self-sown fields of wheat where the ground was low, but vines where it rose somewhat." Karlsefne is said to have sent two Scotch people to explore and when they returned "they brought back a bunch of grapes and a new sowen ear of wheat."

Corn was brought back by Columbus when he visited Cuba in 1492, and was described by him as "a kind of grain called maize of which was made a very well-tasted flour." In South America in 1498, maize was brought to Columbus off the coast of Venezuela. During De Soto's invasion in 1540, maize was found everywhere along his route from Florida, Alabama, and to the upper part of the Mississippi. Throughout the early history of the discovery period, there are numerous references to the production of maize by the Indians. Corn was considered sacred by many of the South American tribes "the corn stalks with many ears or with double ears being considered as sacred things but not as deities." The ears were suspended by branches of willow and were worshipped, especially those the grains of which were of various colors. On the coast of Peru says De la Vega the sowing is done by ancient Peruvians "by making holes with thick stakes into which they put the heads of fish together with two or three grains of maize." This, says De la Vega, was in vogue among the Indians in some parts of Mexico and it is described in part by Bancroft for the ancient Aztecs.

The Navajo Indians have the tradition that "all the wise men being one day assembled, a turkey hen came flying from the direction of the morning star and shook from her feathers an ear of blue corn into the midst of the company." It is probable that the traditional blue corn of the Navajo Indians was one of the earliest forms of sweet corn cultivated by the early settlers. Seedman's catalogues of the present day include Black Mexican, a type of sweet corn that has been handed down from the earliest days.

"In 1620, Miles Standish,[27] exploring for the Pilgrims, found the fields in stubble, for it was November, and finally under a heap of sand a basket full of corn, some yellow and some red and others mixed with blue." It is interesting to note that the Pilgrims employed an Indian named Squanto to teach them how to grow corn by placing three fish, similar to herring, underneath each hill. It is significant that seedsmen still catalogue a variety of corn known as Squantum. It is also significant that this Indian, Squanto, was in reality the first agricultural agent employed in the New World, for he demonstrated to the colonists the proper methods of growing corn and other crops ordinarily cultivated by the Indians. It was not, however, until about the beginning of the nineteenth century that sweet or "sugar" corn came into prominence as such.

Sweet corn is not referred to by Jefferson in his Notes on Virginia, 1781; nor by M'Mahon, 1806. Thorburn, in 1817, does not mention it. However, in 1801, Bordley[28] mentions the "sweet corn having a white shriveled grain when ripe as yielding richer juice in the stalks than common corn." In 1832, sweet or sugar corn is mentioned among the garden vegetables by Bridgeman. It is probable that the

[26] See footnote 23.
[27] See footnote 23.
[28] New England Farmer, June 14, 1823.

first corn that can be considered as a true sweet corn was brought to Plymouth by Lieut. Richard Bagnoll, who was with General Sullivan in his expedition against the Six Nations in 1779. This was called "papoon" corn, and was the first of the species seen in Plymouth. It soon became more and more distributed and was extensively cultivated for culinary purposes. In 1851, Buist in his "Family Kitchen Garden" mentions two varieties. In 1866, Burr describes 12 varieties, and Thorburn, in 1881, listed 16 varieties.

In 1854 Schneck, in his "Gardener's Text Book," mentions the Extra Early, the Eight-Rowed Sweet, and Stowell's Sugar, "which have been brought into notice within a few months." In 1858 Klippart, in the Report of the State Board of Agriculture of Ohio, mentions in addition the Mammoth Sugar, "the yellow, blue, and red sugars," and says "these are all mere sports from the New

FIG. 179.—Map of the United States showing distribution of sweet-corn acreage for market

England and are not desirable." From it will be observed that the present-day varieties of sweet corn had their introduction mostly after 1850, and that the development of new varieties was rather rapid during the period between 1850 and 1880, at the end of which period approximately 30 varieties were listed. The development of special strains and varieties of sweet corn for specific purposes has gone on constantly since 1880, but a number of the varieties that were in general use at that time are still planted extensively. The recent popularity of yellow sweet corn of the Golden Bantam type has added a distinct chapter to the history of special types of sweet corn in America.

The map, Figure 179, shows the distribution of acreage devoted to sweet corn for the market in 1919.

American seedsmen catalogued sweet corn under 699 variety or synonymous names in 1921, but it is safe to assume that by the law of averages as applied to seed-trade catalogues about 50 variety names will cover the distinct varieties of sweet corn now grown in

America. Of these not more than 10 are of special importance and 5 will include 75 or 80 per cent of the commercial production. Golden Bantam, Howling Mob, Whipple's Yellow, Country Gentleman, Early Evergreen, Late Evergreen, Mammoth White Cory, Early Minnesota, Crosby's Early, and Mammoth Sugar constitute the list of most important varieties. Special strains of the leading varieties have been developed for certain markets and for canning, but it is significant that some of the older varieties are still highly prized by discriminating growers and consumers. Figure 180 shows the method of packing sweet corn in hampers for marketing which is employed in New Jersey.

FIG. 180.—Sweet corn in New Jersey being packed in hampers for marketing

Tomatoes

The tomato is a native of tropical America and according to Bancroft was eaten by the wild tribes of Mexico who called it tomati. Humboldt says that it was called tomati and was sown among maize by the ancient Mexicans. The tomato is mentioned by Acosta in 1590 as among the products of Mexico. The European names "mala Peruviana" and "pomi del Peru" would indicate that it came to Europe from Peru. According to De Candolle the tomato would appear to be of Peruvian origin. The tomato was introduced into Europe during the early days of American discovery and was given the French name of Pommes d' Amours or "love apple." The date of its appearance in England is given as 1596, and Gerarde says in his second edition as quoted by Sturtevant "that these 'love apples' are eaten abroad prepared and boiled with pepper, salt, and oil, and also as a sauce." In 1656 Parkinson mentions the tomato as being cultivated in England for ornament and curiosity only, and Miller in 1752 says that they were much used in soups in his time. Sturtevant states that "in 1812 they were an article of field

culture in Italy, especially in Sicily whence they were sent to Naples and Rome, being extensively used in Italian cookery." Tomatoes are mentioned as growing in Virginia by Jefferson in 1781. In 1802, they were introduced in Salem, Mass., by an Italian painter, but he found it difficult to persuade the people even to taste the fruit. T. S. Gold, secretary of the Connecticut Board of Agriculture, wrote: "We raised our first tomatoes about 1832 as a curiosity, made no use of them though we had heard that the French ate them. They were called 'love apples.'" Prior to about 1834 the tomato was almost wholly unknown in this country as an esculent vegetable and in the History of the Massachusetts Horticultural Society, it is said that in 1844 this vegetable was then acquiring the popularity which makes it so indispensable.

FIG. 181.—Method of growing early tomatoes by pruning and training to stakes practiced in various parts of the South

It is a significant fact that the tomato, though of American origin, was not known to North America or was not cultivated by the North American Indians, and that it was used in European countries possibly a hundred years before it found use in America. There are abundant evidences that the tomato or "love apple," as it was called, was considered poisonous by the majority of the American people prior to 1835. Elizabeth Clark, who was born in Trenton, N. J., in 1833, related during her lifetime how when as a child she gathered and ate the "love apples," but when caught in the act was rushed to the doctor by her parents with the fear that she had been poisoned and would probably not survive. Shortly after 1840, however, the use of tomatoes became quite general. The editor of the Maine Farmer in 1835 states "tomatoes are cultivated in gardens in Maine and are a useful article of diet and should be found on every man's table."

The real development of the tomato as it is found in the gardens of to-day did not begin actively until about 1870. A. W. Livingston, of Ohio, brought out the variety known as Trophy, this being followed by such varieties as Acme, Beauty, and others of that period. The development of the canning industry about this time also tended to popularize the use of tomatoes and created a demand for varieties to meet special requirements.

During recent years the development of the early-tomato industry of the South (fig. 181) and the tomato-forcing industry of the North has extended the season for fresh tomatoes to include practically the entire year. The first carloads of tomatoes of the winter season now come into the United States from points in western Mexico. These are followed by the early crop from southern Florida, and, as the season advances the shipping of fresh tomatoes mainly in the green or tinted stage, progresses northward through Florida, southern Georgia, the Crystal Springs, Miss., section, eastern Texas, the

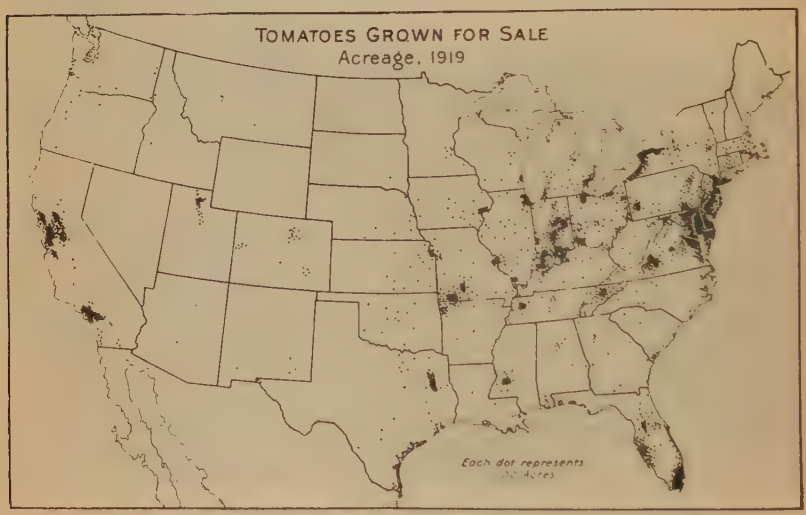


FIG. 182.—Distribution of the acreage of tomatoes grown for the market in 1919

Humboldt, Tenn., section, and thence northward until the early frost line is encountered. Hothouse tomatoes, which are now grown in large quantities in the Northern and Eastern States, fill in the gaps in southern production throughout the winter and spring season. Fresh tomatoes are shipped in car lots from more than 25 States, but the bulk of the early stock comes from 8 States. The shipments of tomatoes in 1925 amounted to approximately 27,898 cars. This, however, did not include the great quantity hauled to local markets by wagons and trucks. The map, Figure 182, shows the distribution of the acreage of tomatoes grown for the market in 1919.

Eggplant

Eggplant is closely related to the tomato, but is of Old World origin. Sturtevant in his Notes on Edible Plants makes numerous references to its being grown in the fifteenth and sixteenth

centuries, with one reference as far back as A. D. 595. The white and yellow sorts have long been grown for ornament, but it is the purple variety which is most commonly grown for the market. It is not known just when the eggplant was introduced into America, but its introduction was evidently during the early days of settlement. Several varieties are now grown in American gardens, but the greater part of the commercial or market crop is of the dark purple Black Beauty type. Eggplant is grown on a considerable scale throughout the southern trucking regions for early spring marketing, also very extensively in market gardens of the Northeast and warmer parts of the Central West. The eggplant requires plenty of heat and moisture and a highly fertilized soil with good cultivation. In past years when plenty of manure could be procured, it was the custom of the Norfolk growers to apply 40 tons of manure to an acre where eggplant was to be grown. At present it is no uncommon practice with these growers to apply 2 tons of commercial fertilizer to the acre. The yield of eggplant is large under favorable conditions.

Eggplant is grown for the market throughout the warmer parts of the country, but the carload shipments are confined to seven States, Florida, South Carolina, and the Norfolk section of Virginia furnishing the bulk of the shipments.

Peppers

Sweet peppers as grown in home gardens and for the markets are of American origin, the parent type of the present sorts having been cultivated by the natives of Barbados and in Peru, where the fruits were eaten green and before they assumed their red or ripe color. According to Sturtevant, peppers were eaten in large quantities by the ancient inhabitants of tropical America. Peppers were taken to Spain by Columbus in 1493. The pepper is mentioned in England in 1548 and the plant was carried to India by the Portuguese.

The growing of peppers for the early market has become an important industry throughout the southern trucking regions. As a rule, the plants are started in hotbeds, transplanted to coldframes and later to the fields when the weather has become sufficiently warm to make it safe to do so. Within recent years the demand for the large sweet peppers of such varieties as Chinese Giant and Ruby King, has increased wonderfully and during the season of 1925 approximately 2,326 cars were shipped to the larger markets in addition to the thousands of bushels that were hauled direct to the markets. During recent years there has developed an important industry in growing and canning of pimiento peppers in certain parts of the South where the work was originally started by the home demonstration agents.

Special types of peppers are grown in many sections, especially near the large eastern markets. In New Jersey, for example, great quantities of a mild hot pepper are grown for the foreign trade in the New York marketing area (fig. 183). Quantities of Chili or hot peppers are grown in the Southwest for use in the making of hot sauces. In the vicinity of New Iberia, La., large quantities of a small hot pepper known as Tobasco pepper are grown and are all

used at New Iberia for the manufacture of Tobasco sauce which is in demand for use on meats and sea foods, especially oysters.

Attempts to grow the true Paprika pepper in this country have met with failure. This pepper is grown largely in Bohemia and the pulverized dried pepper, known as Paprika, is imported in considerable quantities.

FIG. 183.—Special type of pepper grown in New Jersey for the eastern markets. These peppers are shipped in great quantities, mostly in barrels containing about 3 bushels

Vine Crops

Vine crops, classed as vegetables, include muskmelons, watermelons, cucumbers, pumpkins, squashes, and certain of the gourds which are used as food to some extent. Historians credit the Old World with the muskmelon, watermelon, and cucumber, also some of the pumpkins, but the squashes and certain species of pumpkins and gourds are considered of American origin. In no instance do either the names or descriptions that would apply to our various species of squashes and pumpkins, appear in any of the early European writings. American horticultural writers lay particular stress upon the squashes and pumpkins, especially those grown by the Indians. The term "melon" was used by the early travelers and writers to signify watermelons and gourds, and has even been indiscriminately applied to pumpkins and squashes, so that it is difficult to trace the origin and history of the vine crops, especially those of American origin.

Distribution of the vine crops was rapid, due to the ease with which the seeds could be carried from one point to another. In addition, the seeds of pumpkins, squashes, and watermelons were considered as having medicinal qualities and were also used as food, thus increasing their distribution to all parts of the country. This was notably true among the American Indians who were natural traders and

lived largely by barter with other nations with whom they were at peace. This fact will readily explain the finding of melons and other species of the vine crops which were of European origin growing in all parts of the southern United States within a brief period of years after their introduction. There are indications that Columbus on his second voyage brought with him seeds of many Old World crops and these were planted or traded to the natives for seeds of New World species. Explorers who followed Columbus undoubtedly did the same thing until there was a very general distribution or interchange of species between the two continents.

Muskmelons

Muskmelons are native of the tropical regions of the Old World, but whether the ancients knew the melon is a matter of doubt. Pliny, writing in the first century, says: "A new form of cucumber

FIG. 184.—Distribution of muskmelon acreage in 1919

has lately appeared in Campania called melopepo, which grows on the ground in a round form," and he adds: "In addition to their color and odor, that when ripe, though not suspended, the fruit separates from the stem at maturity." According to De Candolle, "the culture of the melon is not very ancient and the plant has never been found wild in the Mediterranean region, in Africa, in India or in the Indian Archipelago."

Columbus is recorded by Doctor Sturtevant as finding melons at Isabella Island on his return from his second voyage, and on this basis the first grown in the New World are to be dated 1494. Once established in this country, melons spread rapidly as in 1535 Jacques Cartier mentions the Indians at Hochelega (now Montreal) as having muskmelons. In 1540, Lopez de Gomara, in the report of the expedition to New Mexico makes several references to melons. In 1583, Antonis de Espejo found melons cultivated by the Choctow Indians. Melons are mentioned by Vinegas as growing on the

Colorado River in 1758. In 1565, melons are reported by Benzoni as abounding in Hayti but, melons appear not to have been planted in the Bermudas in 1609.

Muskmelons are said to have been grown in Virginia in 1609 and are mentioned by Hudson as found on the Hudson River during the same year. Muskmelons are mentioned by Master Graves in his letter of 1629 as "abounding in New England," and again by William Woods in 1629 to 1633. In 1673, the melon is said to have been cultivated by the Indians of Illinois, and Father Marquette pronounced them excellent, especially those with red seed. In 1683, some melon seeds were sown by the Spaniards on the Island of California. The Indians about Philadelphia grew melons preceding 1748, according to Calm.

FIG. 185.—Typical field of muskmelons grown under irrigation in the Imperial Valley of California. Note the irrigation furrows between the rows of muskmelons

Muskmelons are now well distributed throughout the temperate and subtropical regions of the world and are produced for the market in no less than 33 or 34 States of the United States. About 23 States are producing and shipping muskmelons on a car-lot basis, the more important shipping sections being in California, Colorado, Arizona, Arkansas, Texas, Georgia, North Carolina, Virginia, Indiana, Michigan, Maryland, Delaware, and New Jersey. Altogether about 82,000 acres are planted each year to muskmelons in the United States, exclusive of home gardens and the production is approximately 11,000,000 standard crates or about equal to 32,000 standard cars. The map shown in Figure 184 indicates the distribution of the muskmelon acreage in the United States according to the census figures in 1919.

Two factors have been of greatest importance in the development of the melon industry in the United States: (1) The opening up of vast tracts of sandy or alluvial soils under irrigation in California

(fig. 185), Colorado, Arizona, and elsewhere in the West, and (2), the development of transcontinental refrigeration transit. Coupled with these factors, there has been waged an extensive advertising campaign to popularize the use of muskmelons in the large eastern cities. Figure 186 shows a typical muskmelon field in the Eastern States.

Marked progress has been made during recent years in the improvement of varieties and strains of muskmelons to meet special shipping and marketing requirements, but the condition still exists to some degree as described by Herera, the Spanish writer, who, in 1513, wrote: "If the melon is good, it is the best fruit that exists, and none other is preferable to it; if it is bad, it is a bad thing." The fault, however, lies largely with the growers and is due either to a preventable diseased condition of the vines or to the picking of the melons for shipment before they are sufficiently mature.

FIG. 186.—Typical field of muskmelons as grown in the eastern United States

The addition of the better-keeping melons, such as Honeydew, Casaba, and the Persian or Odessa types, to our list of varieties has greatly extended the marketing season for muskmelons in this country. These varieties are for the most part natives of, or at least have been introduced into this country from, southern Asia, and are found at their best in the low, hot river valley and delta regions of that country. They were first grown in the United States under climatic and soil conditions similar to those of Asia, but their culture has gradually spread to include all of the warmer southern and irrigated southwestern sections of the United States. Formerly the long-keeping melons of the Casaba type were on our markets during the late fall and early winter only, but during recent years their period has been extended and they now appear on our markets about midsummer or even earlier and continue until midwinter, the latest offerings being grown in Mexico. Although these melons

keep reasonably well, their period of storage is necessarily limited to less than 100 days, except under the most favorable circumstances. The flavor of the winter or keeping melons is so different from that of the regular muskmelons as to render them unappreciated by a considerable part of the American population, and the demand for this type of melon is, therefore, more restricted than that of the regular muskmelon in its regular season. Some of the keeping melons, like the Santa Claus or Christmas melon or the Khiva winter melon, grow to enormous size; the latter, as grown in the Salt Lake country under irrigation, has attained the length of 24 inches and weighing 36 to 40 pounds. The flesh of these melons is almost pure white and extremely thick, and, when properly ripened, is juicy and edible nearly to the rind of the melon. As this type of melon becomes more popular and greater attention is given both to its culture and storage, it will undoubtedly become a more important factor in our melon industry.

Watermelons

Watermelons were cultivated by the ancient Egyptians and are represented in their paintings. The actual mention of the watermelon under the Hebrew name "Abbatitchim" is found in connection with the history of the Hebrew exodus from Egypt. Figures of melons are found carved on the monuments of ancient times in Egypt and the watermelon still forms an important food and drink of the Egyptians for several months in the year. Originally, it was thought that the watermelon came from southern Asia because of its general cultivation in that region. However, it is not found growing wild in southern Asia which would rather disprove the theory of Asiatic origin. It is, however, found growing in the wild state in tropical Africa on both sides of the Equator and Livingston in his travels saw districts literally covered with it and the natives and various wild animals eagerly devoured the wild fruits. In the wild state the watermelon frequently has a bitter flavor which can not be detected from the appearance of the fruit. The natives cut open the fruits and first taste the juice to see if it is good or bad. According to De Candolle the proof of the antiquity of the watermelon in the north of Africa is found in the various names under which it is known, these names being in the Arabic and other ancient languages. Its cultivation evidently spread into Asia as there is a Sanskrit name which would bear out this belief. The watermelon was not, however, introduced into China until the tenth century of the Christian era, where it is called "si-kua," which means melon of the west.

Watermelons are mentioned by Master Graves as abounding in Massachusetts in 1629, and before 1664, according to Hilton, watermelons were cultivated by the Florida Indians. In 1799, watermelons were raised by the tribes on the Colorado River. It is easy to discern how both the muskmelon and the watermelon could spread so quickly to all parts of the American continent owing to the ease by which the seeds can be carried and planted. It is notable also that the American Indians have from the earliest records shown themselves to be especially fond of watermelons.

Watermelons are grown for the market over a wide range of territory, especially in the warmer sections of the United States. According to statistics compiled by the Bureau of Agricultural Economics and covering the five-year period from 1920 to 1924 inclusive, there was an average yearly movement of approximately 50,000 carloads, exclusive of those marketed locally or shipped in less than car lots. The average area planted to watermelons was approximately 155,000 acres, or a little over 3 acres per car. Georgia, Florida, Texas, South Carolina, Alabama, and Missouri are the most important watermelon-shipping States. Figure 187 shows the distribution of the watermelon industry in the United States according to the census figures of 1919.

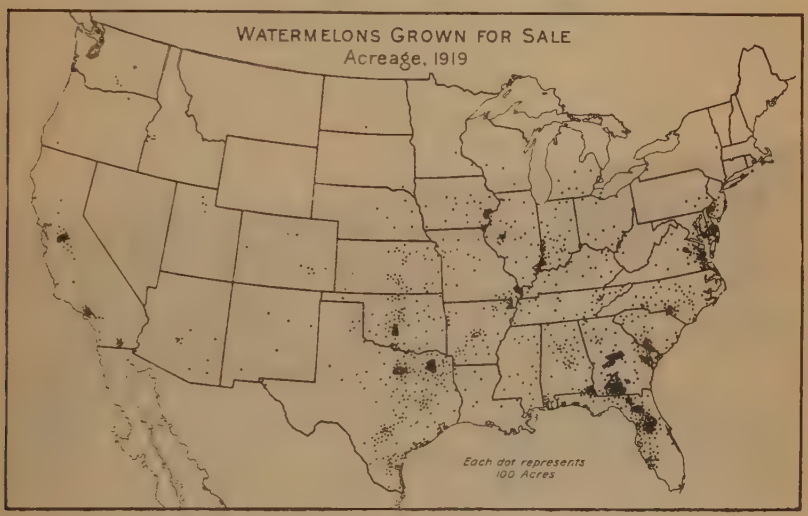


FIG. 187.—Acreage of watermelons grown for sale according to the census of 1919

Watermelon shipments from southern Florida and Texas begin in April, and the season gradually moves northward until the end of the summer, or about October 1, in the more Northern States, The ideal market melon is one weighing 28 to 32 pounds, which loads 800 to 1,000 to a car, although melons as small as 18 pounds and loading 1,500 to 1,600 to a car, are sometimes shipped (fig. 188). Watermelons are grown extensively on new land that is being cleared and put in condition for other crops or are grown on old land in the regular farm crop rotation with cotton, corn, cowpeas, oats, and other crops.

Although watermelons can not be considered a staple vegetable food, but more or less of a luxury, they are in great demand and the commercial watermelon industry is developing rapidly. Attracted by the success of the Georgia melon growers, the farmers of the Carolinas and of other States along the coast as far north as New Jersey have given the production of melons special attention, and though the type of melon produced has varied with local conditions, this expansion of the industry has greatly increased the popularity of the watermelon as a commercial crop. Varieties of watermelons adapted for long distance shipment have been devel-

oped and during recent years greater attention has been given to combining better flavor and edible qualities with good shipping qualities. At present the varieties grown most universally in Florida, Georgia, and the Carolinas, are Florida Favorite, Tom Watson, Irish Grey, Georgia Rattlesnake, and Thurmond Grey.

Where the melons are grown for near-by markets, the variety known as Kleckley Sweets is extremely popular on account of its thin rind and splendid flavor. The Kleckley Sweets, however, is not adapted for long-distance shipment. The Chesapeake Bay and Potomac River sections of Maryland and Virginia have long been noted for the production of splendid quality watermelons which have been largely transported to the market by boats.

FIG. 188.—Loading early watermelons in Florida. From 1,000 to 1,600 melons are loaded in a car

Recently, there has been introduced into California, Colorado, and other of the Western States, a small round watermelon known as the Christmas melon, which, when matured late in the season can be kept well into the winter. This melon was probably introduced from Russia by a group of Russians located at Rocky Ford, Colo. When well grown these melons are about 10 inches in diameter, have an extremely thin rind and fairly solid flesh. Owing to the very thin rind they do not withstand shipment and must be carefully packed in crates with excelsior to protect them. A rather unique method of storing these winter watermelons as practiced by the Russians, who are said to have introduced them into this country, is to submerge the melons in barrels of weak brine and keep in a cool place, but where they will not be subjected to freezing. In this manner the melons are said to keep in perfect condition until midwinter and to retain an excellent flavor. Although, as already stated, watermelons do not possess a high food value, their refreshing qualities make them especially desirable for cultivation in the greater part of the United States.

Cucumbers

Historical references extending fully 3,000 years B. C. allude to the antiquity of the cucumber and beyond doubt it is of Old World origin. De Candolle, after reviewing the references made by the various writers, concludes that it is a native of India. However, he states that it has never been found growing wild in that country. Doctor Hooker is quoted in Sturtevant's work on edible plants as being of the opinion that the cucumber grows wild in the Himalayas. The cucumber is said to have been brought into China from the west between 140 and 86 B. C. Cucumbers were known to the ancient Greeks and Romans, and Pliny even mentions their forced culture.

Cucumbers were grown by Columbus at Hayti in 1494. In 1535 Jacques Cartier mentions cucumbers as being cultivated by the

FIG. 189.—Field of early cucumbers near Charleston, S. C.

Indians in the section which is now Montreal. In 1539 De Sota found in Florida cucumbers, as he described them, better than those of Spain, and in 1562 Ribault mentions that they were being cultivated by the Florida Indians. In 1584 and again in 1609, Capt. John Smith reported cucumbers as being cultivated in Virginia. In Massachusetts they are mentioned in 1629 by Rev. Francis Higginson. Cucumbers were seen in Brazil by Nieuhoff in 1647, and by Father Angelo in 1666. It is evident, therefore, that the cucumber was brought into America during the time of the early settlers, but that it was used in the Old World countries during the earliest historical times.

Early spring production of cucumbers for the northern markets has now reached large proportions in certain of our Southern States (fig. 189). The first plantings are made in the southern and central parts of Florida in January, and as the season progresses, the plantings are made farther northward, including northern Florida,

southern Georgia, South Carolina, the tidewater section of Virginia and Maryland, and so on up the coast to Boston, Mass. According to the Division of Crop and Livestock Estimates of the Bureau of Agricultural Economics, there were approximately 36,640 acres planted for car-lot shipment in 1925 and during the year 8,464 cars were shipped to the markets. This is in addition to the cucumbers grown in the greenhouses and the small patches in market gardens and marketed locally, also those that are grown in home gardens for home consumption (fig. 190).

Production of cucumbers for the market in the United States has been largely confined to one variety known as the White Spine, although there are several more or less clearly-defined strains of this variety being used. Cucumbers as grown in the Southern States for the northern markets are an extremely precarious crop, owing (1) to their susceptibility to diseases and (2) to the uncertainty of

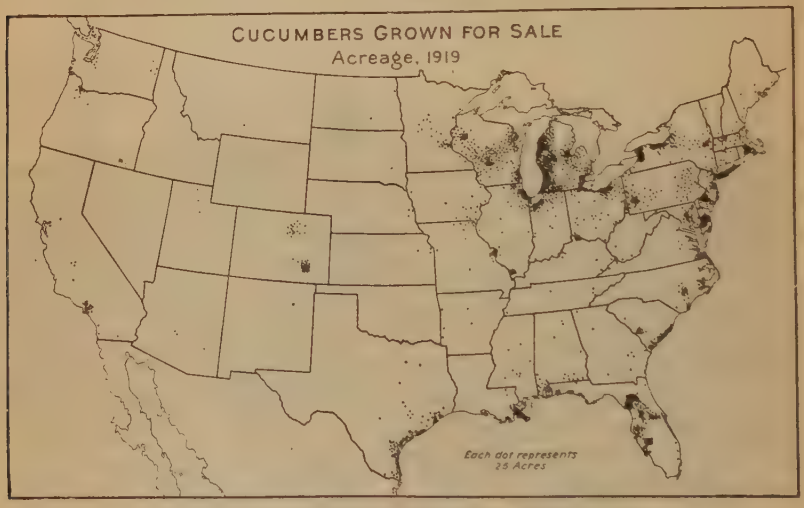


FIG. 190.—Distribution of cucumber acreage in 1919

the markets. The leaf diseases of the cucumber can ordinarily be controlled by spraying, but certain soil-carrying diseases can be controlled only by crop rotation and the avoidance of planting cucumbers on land that has been in any vine crop for a number of years preceding.

Marketing conditions are uncertain from the standpoint of overproduction or limited purchasing of the consuming public. As cucumbers are more or less of a luxury, comparatively few are sold at times when the industrial classes are idle. The southern early crop of cucumbers (fig. 191) comes in competition with those grown in northern greenhouses and those produced in hotbeds or coldframes in the Norfolk, Va. section and other regions having a mild climate suitable for growing the crop in this manner (fig. 192). A very large acreage of cucumbers is planted annually, mostly in the Northern States for pickles and special varieties are used for this purpose.

One rather significant point about the whole cucumber industry is that well grown, fresh, washed, and graded cucumbers that are

packed in neat attractive hampers or baskets often find ready sale on the markets even at a time when ordinary field-run stock is not paying for handling. The season of 1924 was especially disastrous

FIG. 191.—Packing early cucumbers in hampers in South Carolina

FIG. 192.—Cucumbers are grown in frames in the Norfolk, Va. section and after the weather has become warm the sash and frames are removed. The overhead pipes are for irrigation

for the early cucumber growers of the South Atlanitc coast and the South generally, but during this time the growers who were producing fancy cucumbers in sash-covered frames in the Norfolk region

were making money, the main difference being in the quality and handling of the product.

The gherkin is a small species of cucumber about the size of an egg, or a little larger, covered with short soft prickles, which is eaten while young and tender either cooked or pickled. As the gherkin is very productive only one or two plants are necessary to supply the ordinary family. The market for this form of cucumber is extremely limited. This species of cucumber grows well in Jamaica and other islands of the West Indies. It has also been found growing wild in Brazil and is considered to be of American origin, probably a native of Jamaica. Its adaptability in the United States is mainly for growing in home gardens, truck gardens, and for commercial handling on a small scale.

Pumpkins and Squashes

Early historical writers and botanists have failed to establish beyond a doubt as to whether our common squashes and pumpkins are native of the Old World or America. Certain of the gourds are frequently mentioned by early writers but mainly in connection with their use as vessels for containing water, wine, and other liquid. De Candolle in his investigations finds that the principal varieties of *Cucurbita maxima* are the great yellow gourds which grow to an enormous size; these include the Spanish gourd, Turban gourd, and others. No mention is made, however, of this species being found growing wild in Abyssinia, Egypt, or other African countries. Although the pumpkins are cultivated in southern Asia as in other parts of the Tropics, the plant has not been found growing wild. No similar species indicated by the ancient Chinese authors have modern names of gourds; pumpkins now grown in China are of foreign and southern origin. There is no less uncertainty with respect to pumpkins and melons cultivated by the Greeks and Romans. Certain species of the familiar Cucurbitaceæ are found growing wild in Africa, but on the other hand out of 10 known species, 6 are certainly wild in America. No record is found in the works on Brazil or the West Indies which refer to the ancient cultivation or of wild growth of the Cucurbitaceæ. We find that a century after the discovery of Virginia and 20 to 40 years after its colonization the colonists made use of some fruits of the Cucurbitaceæ. There is other indication, however, that *Cucurbita maxima* was introduced into America by Europeans and that *Cucurbita pepo*, which is the common pumpkin, was of American origin. Several species of the genius Cucurbita grow wild in Mexico and in the southwestern part of the United States. Botanical indications are in favor of Mexican or Texas origin of the common pumpkin.

Pumpkins and squashes, regardless of their origin, have been grown in America since the early days and whether the seeds were first obtained by the Colonists from the Indians or the opposite is a question that can not from present historical references be ascertained. Although the pumpkin has attained considerable commercial value and widespread home use in the United States, it has not reached the proportions of an industry such as has the watermelon, muskmelon, and cucumber. It is true that certain of the squashes, especially the Hubbard and marrow types, are grown in considerable

quantities in certain sections and are shipped to the leading markets in carload lots. In fact, the growing of these squashes constitutes quite an industry in Wisconsin, Michigan, and New York, and in certain of the New England States.

The so-called summer squashes are now grown extensively in the South for shipment to the northern markets. Recently there have been brought into prominence two or three varieties of the smaller type of squashes, notably the one referred to as Kitchenette and the other as Table Queen, and these are being used extensively for baking and serving in the same manner as sweet potatoes. The quality or flavor of these small squashes is perhaps in no way superior to the Hubbard or marrow squash, except that they are of a more convenient size for serving in halves or quarters as individual portions. The common types of pumpkin, such as are grown in cornfields, have considerable value from a stock-feeding standpoint, thus making the group of pumpkins and squashes one of considerable economic importance among our American food and feed crops.

Canning Crops

From a small beginning about a half century ago the growing of vegetable crops for canning has developed until in 1924, according to data gathered and compiled by the Bureau of Agricultural Economics, tomatoes, sweet corn, peas, asparagus, snap beans, spinach, cabbage for sauerkraut, and cucumbers for pickles grown for canning or manufacture occupied about 1,100,000 acres and produced raw products having a farm value of about $66,000,000. This does not include any portion of these vegetables grown for marketing in the fresh state.

Modern canning methods make it possible to grow the crops in sections where natural conditions are most favorable, as the canned product can be transported anywhere irrespective of temperature or other similar factors, as properly packed canned goods will keep under conditions fatal to fresh goods. At the outset many canning enterprises began in sections where soil and other conditions were not especially favorable, and there has been a gradual shifting of the industry to sections where maximum crops of the highest grade can be obtained. Although there is some overlapping, our present supplies of canned peas, corn, tomatoes, asparagus, snap beans, and other vegetables nearly all come from regions which are well defined and bounded by definite lines of demarcation. Wisconsin, for example, produces about half the peas canned in the United States. Illinois, Iowa, Maryland, New York, Ohio, Maine, and other States contribute to the sweet corn supply, but this crop is more cosmopolitan in its requirements and produced with equal ease over a larger part of the country. Practically all the canned asparagus is produced in one small region in California.

Vegetable canning crop production is a development of the last few decades. It had no great commercial importance previous to 1890, and its greatest growth has taken place within the last 20 years.

Canned vegetable foods are of prime importance to the housewife who has the responsibility of planning a daily menu which will supply a properly balanced ration. Tomatoes, peas, sweet corn, asparagus, beans, and other vegetables are available at all times as canned

foods and can be kept on the pantry shelf for long periods. The food value of the canned vegetable is high; it is wholesome and appetizing, and has many of the qualities of the fresh product.

From the canning-crop growers' point of view these crops are of prime importance. They give him over 1,000,000 acres of crops, many of these being well adapted to established or desirable cropping systems. The canning factory in his neighborhood gives him a ready and dependable cash market for his canning crops. It is a significant fact that canning-crop localities are usually prosperous ones. It is not surprising that canned vegetables are popular with the consumer and that the growing of canning crops has developed into its present importance.

Tomatoes for Canning

The development of our extensive industry in the canning and the preparation of various products from tomatoes is a development of the last half century. It occupies a leading place among the vegetable-canning crops covering large areas and producing several hundred thousand tons of products each year. Fig 193 shows the growth of the tomato-canning industry from the time that statistics became available. It is interesting to note the steady and increasing use of this vegetable in the form of canned tomatoes and the various products made from this wholesome and popular vegetable.

The tomato is a crop requiring a moderately warm climate and a long growing season for its best development. In the Northern States where the frost-free season is too short for maturing the crop out of doors it can be grown by starting the plants indoors, thus prolonging the season several weeks. By following this practice, it is possible to grow tomatoes in a commercial way in regions where the industry could not otherwise flourish. In climates where its growth is not interrupted by frost, the tomato is a perennial plant, but in the portions of the United States where the tomato has attained its great importance, it is treated as an annual.

It is not particularly sensitive to the types of soil on which it is grown, but it must have a moderately warm season, ample supplies of moisture and land of reasonable fertility. These and other factors have influenced the development of the industry in certain portions of the United States. The geographical distribution of the industry is indicated in Figure 194, each dot representing 100 acres of tomatoes grown for canning or manufacturing of tomato products. Although many of these factories may be operating under serious economic disadvantages, the map shows that tomatoes for canning and manufacturing are being grown and packed over a considerable portion of the United States. Although the high temperatures and hot sun of the lower South are not well suited to the growing of tomatoes for canning, and the northern limit of their growth is established by the short-growing season of the northern portion of the United States, it does not follow that the present distribution of the industry is in all cases sound. As a matter of fact, it has undergone marked readjustments, shifting from less favored sections to other regions where maximum yields of high quality tomatoes can be obtained at lower costs. It has moved from regions adjacent to large centers of populations where both land and labor costs are

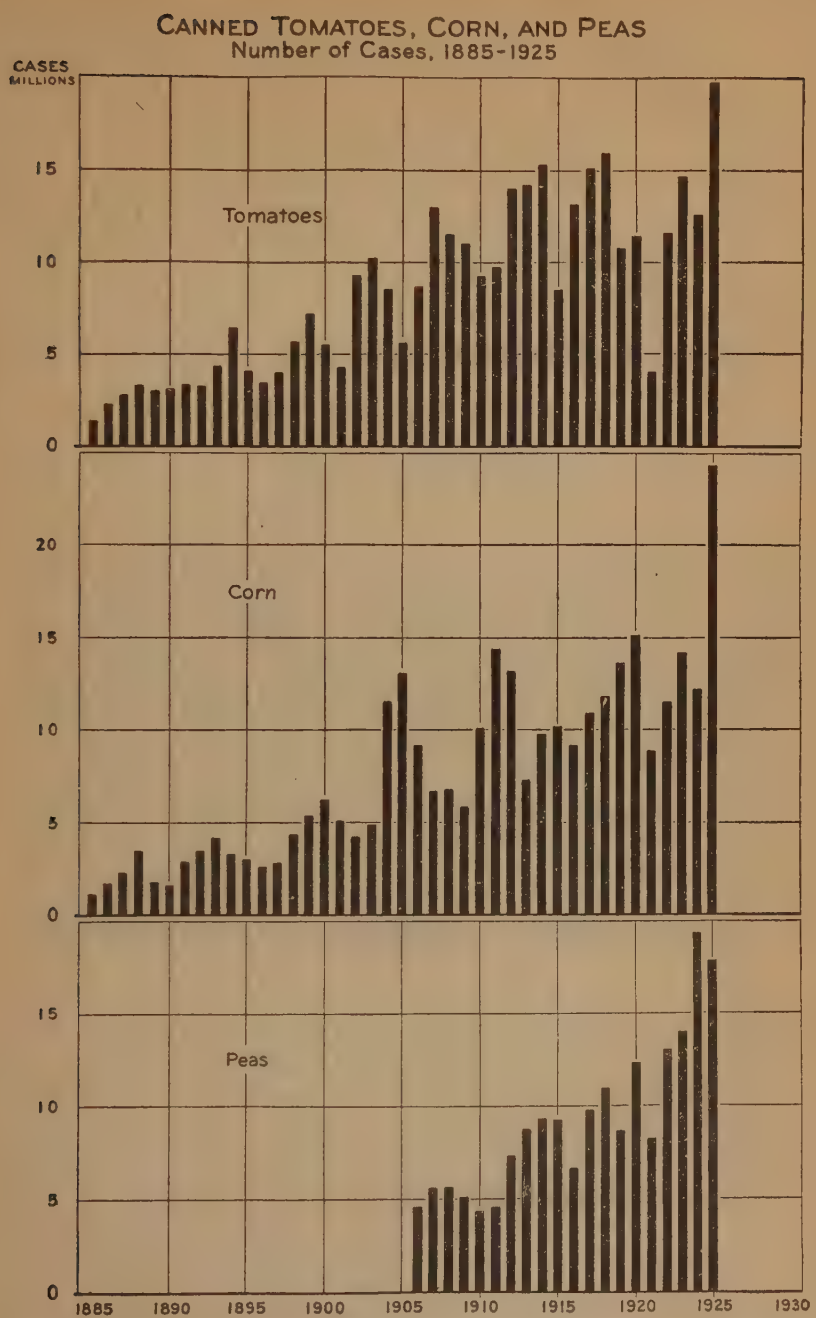


FIG. 193.—Growth of the canning of tomatoes, corn, and peas during the period 1885 to 1925

liable to be high, to sections where both cheap land and labor can be procured. It is far cheaper to ship the canned or manufactured product to consuming markets than it is to prepare the foods where raw products, labor, and other items of expense are abnormally high. Tomatoes can be canned with comparatively simple equipment and this is partly responsible for the success of many small canneries.

The growing of tomatoes for canning and manufacturing has not been uniformly profitable to growers and canners. The average yield is surprisingly low, being 4.36 tons per acre for the years 1923 to 1925 inclusive. From the growers' viewpoint, the procuring of high yields is necessary to the realization of satisfactory returns from the crop. The cost of preparing the land and other cultural practices are not materially higher when of such a nature that good crops are obtained. It is obvious that growers who obtain the best yields are most certain to make money in growing canning tomatoes.

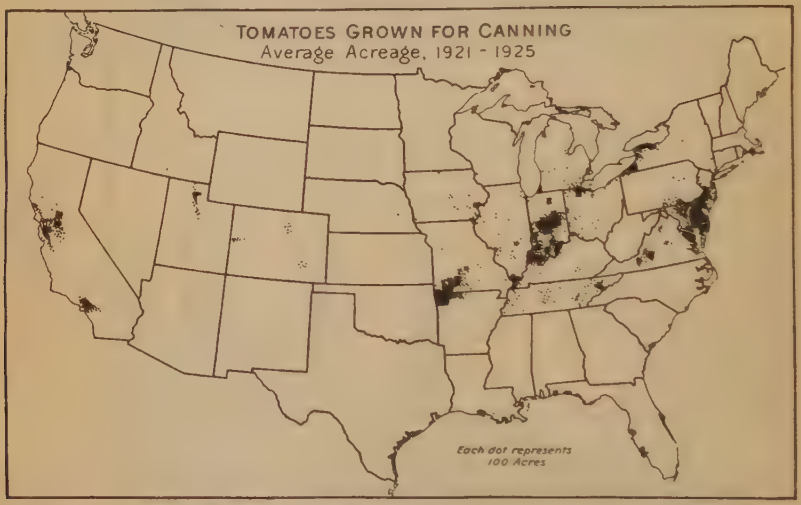


FIG. 194.—Average acreage of tomatoes grown for canning during the period 1921 to 1925

The practice of methods which increase crop yields are necessary to successful tomato growing. A few of these are of outstanding importance and will be discussed in the following paragraphs.

Crop rotation.—A crop rotation that maintains the soil in good physical condition and well supplied with organic matter is particularly desirable on farms where tomatoes are grown year after year. Potatoes, peppers, and eggplants and other related plants should not be included in the rotation as these are liable to spread the diseases affecting the tomato. A rotation that includes at least one crop or combination crop of clover, cowpeas, soy beans, or other leguminous green-manuring crop is extremely desirable. Although the tomato is not difficult to grow, it is a great mistake to relegate it to any but the best land on the farm. An acre of good land will produce more tomatoes than 2 acres of poor soil. The practice of rational crop rotations involving the use of crops and combinations of crops which are adapted to the locality, is one of the necessary

steps in insuring an abundant acreage of land suitable for the successful growing of canning-crop tomatoes as well as other farm crops. Many growers not content with having their soil in good physical condition and well supplied with organic matter, add materially to its resources by sowing cowpeas, soy beans or other similar plants between the rows of tomatoes at the last cultivation, the resulting growth being plowed or disked into the soil after the crop season is over. Successful canning-crop production can not well be carried on without crop rotation.

How canners obtain tomatoes.—The production and canning of tomatoes requires a close working arrangement between growers and canners. A large portion of the crop used for canning and manufacturing purposes is grown under contract between the canner and the grower, although some are grown by canners who maintain farm departments, producing the crop on land either leased or

FIG. 195.—Large areas are required to produce the heavy tonnage of tomatoes needed for canning and manufacturing

owned by them. Buying on the open market is practiced to a certain extent, especially in some sections where surplus material is purchased and canned or used for the preparation of other tomato products. Few canners depend on buying their entire supply on the open market, preferring to contract for at least 90 per cent of their requirements. In the past, misunderstandings have often existed between growers and canners but both should realize that their interests are in common. Although the farmer may have no direct financial interest in the tomato cannery, it gives him a market for his crop, and there should be sufficiently close relations between the growers and the canners to permit the employment of every agency to increase the yields and make the industry a profitable one for both. Figure 195 shows a field of tomatoes grown for the cannery.

Seeds and plants.—Low yields of canning tomatoes are often due to the use of poor seed of unadapted varieties. Next to poor soil

the greatest menace to the tomato-canning crop is poor seed, this sometimes being promiscuous cannery-run seed, which is saved from catsup and tomato-pulp manufacture. Cannery-run seed is often a mixture of varieties, frequently carries diseases affecting the fruits as well as the young plants, and is never saved from selected plants.

Satisfactory tomato seed suited to the grower's conditions can be purchased from dealers who have made a specialty of its production, or it may also be provided by individual growers or associations of growers saving their own seed. If the individual grower desires to work alone, he can select a few plants of the type he desires and save seed from these. Two ounces of high-grade tomato seed should start plants to set an acre, and it is not a difficult matter to save enough seed for the establishment of a considerable acreage. If it is advisable for an association of growers to combine and produce seed for the use of all, the work can readily be done by one grower who has especially favorable conditions for the work. Where fields are set aside for seed purposes, individual plants of the desired type should be marked and the product of these plants taken for seed, the remainder of the crop being used for commercial purposes. The importance of good seed to the grower of canning-crop tomatoes can not be overestimated. It is one of the first and most important forms of crop insurance.

With good seed of high germination and strong vitality to start with, the procuring of well-developed plants—another and very essential part of tomato growing—is largely a matter of the use of the right equipment and the practice of care on the part of the plant grower. Strong, stocky plants can be obtained without special difficulty, provided the necessary precautions be taken. The methods to be employed in procuring these plants must be determined, to a large degree, by the geographical location of the grower, by the equipment available, by the time in the season the plants are needed, and by the desired size of the plants themselves. The growing season can be lengthened several weeks by growing the plants indoors, as it is possible with proper facilities to have them well advanced when set in the field.

Several well-defined plans and methods are widely followed for procuring plants for the establishment of the canning crop. Within recent years much attention has been given to the growing of plants in seed beds in the South during early spring, and the shipment of these plants to northern growing regions for field use. Millions of plants are produced and used in this way each year, but growers generally are inclined to regard the use of southern-grown plants as in the experimental stage.

Early plants can be grown in the North through the use of protective devices such as greenhouses, hotbeds, and coldframes. Four thousand to six thousand tomato plants are necessary for each acre and the handling of these requires a large amount of equipment. Though the seedlings are usually started in flats or in beds where they require little room, they must be transplanted and given more space. When set about 2 inches apart in each direction, at least a dozen standard hotbed sash are required to cover enough plants to set an acre. Growers having several acres of tomatoes find it expensive to provide protected space for plant growing. In warmer

locations cheaper facilities, such as cloth-covered frames are used, simplifying the problem, but it still presents difficulties. The use of southern outdoor-grown plants is due in a large degree to the difficulties experienced in growing early plants in large quantities in northern locations.

In some of the commercial canning sections the production of tomato plants in an open seed bed is a common practice. The seed bed established on a specially prepared area with a southern exposure, and protected by trees or other windbreaks from north winds is preferred. The seed is drilled in rows and no transplanting is practiced. Plants can not be obtained as early by this method as when the greenhouse, hotbed, or other protective device is used, but in certain important canning regions plants can usually be obtained from open beds as early as they are wanted. When the work is properly done very good plants may be grown in this manner. In some sections excellent results are being obtained by farmers' associations, usually under the leadership of the county agent, in growing their supplies of tomato plants in this way. One man is capable of growing the plants for a large acreage and the cost is not great. Whatever method is used the aim should be to procure stocky, disease-free plants, which can be moved to the field without materially checking their growth.

Although it is necessary that weeds be controlled, deep cultivation should be avoided. Frequent, very shallow stirring of the soil is desirable, but this should be done with tools which will not injure the rather shallow root system of the tomato and discontinued when the vines cover the ground. Cultivation should not be carried on when the vines are wet, as this tends to spread the spores of leaf blight fungus.

Picking and handling tomatoes.—One of the greatest difficulties in the production of high-quality canned tomatoes lies in getting the tomatoes to the cannery in first-class condition. Tomatoes should be picked when in prime condition for the purpose for which they are to be used. For canning they should be ripe but not overripe. The grower must pick his tomatoes often and deliver them to the cannery promptly. There is a tendency to pick at too infrequent intervals, with the result that many overripe and partly decayed fruits are included, causing the grower to be penalized for a thing he could easily avoid.

Successful canning-tomato growing depends on the practice of good farming methods, the use of good seed and good plants, careful planting, clean cultivation, and the many other factors governing successful crop production. Recently established tentative grades for canning-crop tomatoes should prove a distinct help in placing the crop in the canners' hands in the best possible condition.

Sweet Corn for Canning

The canning of sweet corn began in a small way in Maine about 1850, the development there being followed very shortly by a similar enterprise in Maryland. From these small beginnings the industry has spread to many States and increased in importance until from 200,000 to 300,000 acres are required to grow sufficient corn to supply the demand for the canned product.

The growing of sweet corn for canning is carried on in a number of the Northern States including Iowa, Illinois, Maryland, Ohio, New York, Indiana, Maine, Minnesota, Wisconsin, Michigan, Nebraska, Pennsylvania, and elsewhere. The distribution of the industry is shown in Figure 196. The congenial climatic and soil

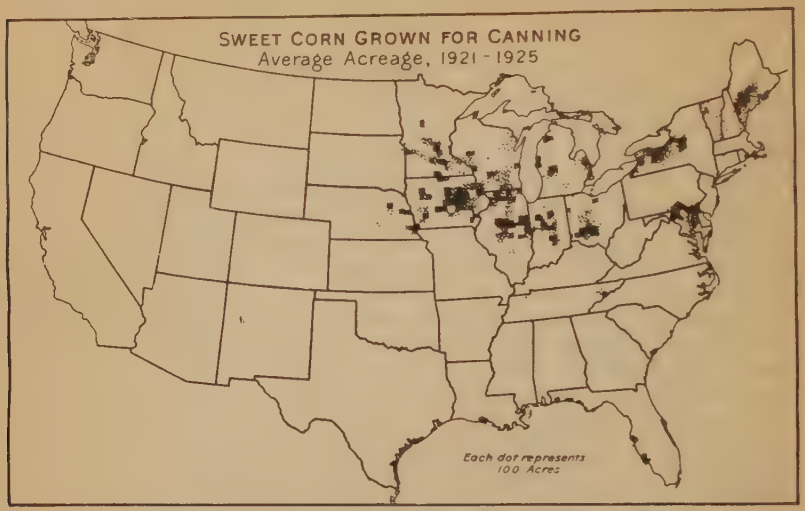


FIG. 196.—Average acreage of sweet-corn production for canning during the period from 1921 to 1925

conditions found throughout these States are largely responsible for the crop having attained its present importance in these areas. Sweet corn is a tender plant, easily injured by frost, and one which will not withstand excessive heat. This limits its production to those sections where there is a frost-free season of from 85 to 120 days and at the same time an average temperature that is not too great.

To can corn economically and in accordance with modern sanitary standards requires a considerable investment in factory and equipment. The canning season is short, and in many cases the factory is idle during the remainder of the year. These conditions usually necessitate the handling of a rather large pack and a correspondingly large acreage. Corn grown as a canning crop has a rather low relative acre-value and can not be economically produced where land is scarce and high priced. Corn is an attractive crop to the farmer because it is harvested while green and is not as exhausting on the soil as field corn. It also yields considerable quantities of green fodder which can be used for silage or dry feed or turned into the soil as green manure.

In general, sweet corn is adapted to the same range of soil conditions as are suitable for field corn. It is more sensitive to climate and somewhat more exacting in its soil requirements, a medium loam well supplied with organic matter usually giving best results. Where heavy clays are used, their physical character should be improved by turning under large quantities of organic matter in the form of stable manure or green-manuring and soil-improving crops. Irre-

spective of the type of soil selected, good drainage is absolutely essential to the production of a large crop. Drainage is in fact more important for sweet corn than for field corn, and land which is sufficiently drained for field corn will in many cases not give good crops of sweet corn.

A farming system that will keep the soil in a high state of fertility through the use of crop rotations, commercial fertilizers, stable manure, lime, and similar agencies is to be looked upon as essential to the production of good crops of sweet corn. Rotations best adapted to each farm can be determined only after studying all conditions. Improved yields of canning-crop sweet corn may be obtained by giving attention to several limiting factors, one of the chief of these being the practice of crop rotations to bring the land to a higher state of fertility.

In most of the sweet-corn-canning districts contracts are entered into between canners and growers whereby the cannery is assured a definite acreage of raw product. The labor of harvesting sweet corn for the cannery is not great and it is possible for individual farmers to grow a considerable acreage. Practically all of the sweet corn packed is contracted for several months in advance with individual growers. Contracts are sometimes made on a sliding scale, the price depending on quality, but more often on the basis of a fixed price for a given variety and practically always contain a clause governing the time of harvesting and delivery to the cannery. In many cases the dates of planting are controlled by the cannery. In this manner the factory can assure itself a constant and uninterrupted supply.

Some canners maintain a farm department and produce at least a portion of their own supply of corn. This plan has many advantages, such as giving the cannery better control of growing methods, but adds to their responsibilities. As a rule canners adopt this method only when they feel it necessary to safeguard their supply of corn for canning.

Good seed is of prime importance to the grower of sweet corn for the cannery. A bushel of good seed is sufficient to plant about 6 acres and the difference in cost of seed of unknown quality and that of proved performance is too trifling to justify the grower in taking chances on crop failure from the use of poor seed. The production of sweet-corn seed is more difficult for the individual grower than that of some other vegetable crops as corn mixes readily over long distances. In sections where large acreages of only one variety are grown, it should not be difficult to obtain stock free from danger of mixture. The main dependence of the grower of canning-crop sweet corn for his seed supplies is on the commercial seedsmen who specialize on the work. Irrespective of the source of the seed, it should be carefully tested in advance of the planting season. This work can be readily performed by the use of the rag doll seed tester. The best practice is to test each ear individually so that those having low vitality can be rejected. The importance of good seed with a high germination can not be overemphasized, as the securing of a good stand and the ultimate crop depends largely upon this factor.

The harvesting and handling of sweet corn for canning is usually supervised very closely by the canner buying the crop. The corn is in prime condition for canning for a very brief period and it must

be handled quickly. The canner usually arranges a succession of plantings and varieties, so that he will have material to keep his plant in operation for as long a period as possible. The corn is in prime condition for canning when it is in the best stage for roasting ears and should be handled before it passes this stage. The usual method of harvesting is to go through the field snapping the ears and throwing them on the wagon fitted with a suitable frame. In some cases the farmer receives the husks and cobs for feeding, whereas in other cases these are placed in silos at the cannery and used by the canner for winter-feeding operations. The fodder which always contains a considerable quantity of corn makes excellent silage, and the majority of canning-crop growers use it for this purpose.

Yields of canning-crop sweet corn vary widely. According to data gathered and compiled by the Bureau of Agricultural Economics, the average yield for the three-year period 1923 to 1925 was slightly over 2 tons per acre, but in 1924 it was only 1.7 tons per acre. The value per acre for this same year was only $24. In 1925 the value of the crop rose to over $37 per acre. Owing to the unfavorable conditions prevailing during the crop season of 1924, both yields and acreage value for this period are abnormally low. Yields of 5 to 7 tons per acre are often obtained by the better growers. The farmer who makes most money out of the growing of sweet corn for canning invariably obtains yields much above the average. The net returns obtained depend on the yield, the cost of production, and on the price received. With canning-crop sweet corn it is especially necessary that every practicable economy be employed for increasing crop yields. It is a crop which can not be neglected or relegated to the poorer portions of the farm.

Peas for Canning

Green peas are one of the three most important canned-vegetable commodities of this country, being exceeded in tonnage only by tomatoes and sweet corn. In common with the other important vegetable-canning crops, its history as such is not old, as the industry started about the middle of the last century around Baltimore, Md., and its growth has been gradual until it is now a very important enterprise in several of the Northern States. According to figures gathered and compiled by the Bureau of Agricultural Economics, the acreage of peas grown for canning in 1925 amounted to over 230,000 acres, with a production of about 214,000 tons, having a farm value of $12,652,000. Of this great crop 111,700 tons were grown in Wisconsin, 34,200 tons in New York, 17,200 tons in Utah, 7,600 tons in Maryland, with the remainder coming from Illinois, Michigan, Indiana, Ohio, California, and other States. Figure 197 shows the distribution of the canning-crop pea industry. The growth of the industry is also shown by Figure 193. In cases where acreage figures were not available they have been calculated by allowing 70 cases per acre.

The production of canning peas was at one time restricted to the Middle Atlantic States, but the industry soon spread to other sections where even better conditions were to be found. It is essentially a

cool-weather crop—in fact, the young plants will endure some frost without serious damage. The crop is grown most successfully in those regions where spring is a little slow in changing from cool to warm weather. The period of harvest is too brief, and the other hazards of the crop are too great for its successful production in parts of the country where conditions are unfavorable.

The growing of peas for canning and the packing of the product is a specialized industry. For economic reasons many canning factories handle other crops, thereby lengthening the season over which the plant can be kept in operation. However, sections which are ideal for the growing of one canning crop are usually not so well suited to the others. As a result most large pea canneries specialize on this crop and handle smaller quantities of other canning crops which can be grown in their locality.

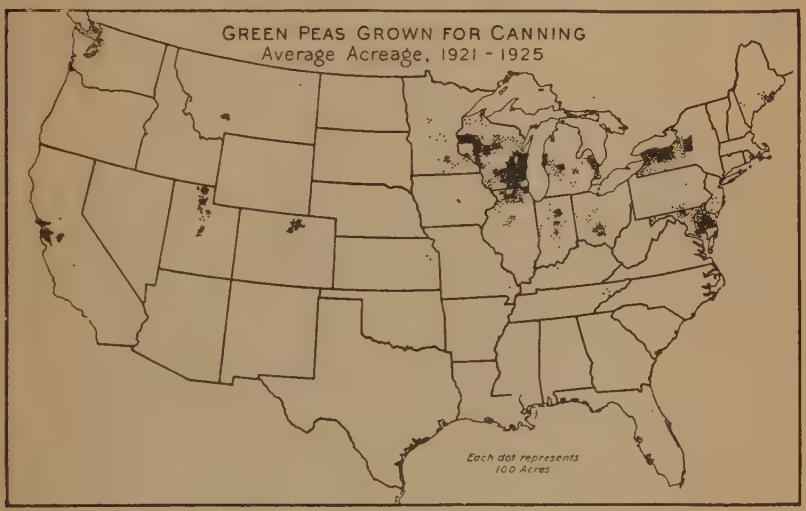


FIG. 197.—Average acreage of green peas grown for canning from 1921 to 1925, inclusive

The pea crop is usaully grown under contract, the canning company specifying the varieties and acreage to be planted by each grower. In a few instances the canners themselves own or lease land upon which they grow a portion of the requirements of their factory. Whatever method is employed in providing a supply of peas, the canners usually assume general direction of the crop, including the selection of the land and in many cases supply the seed to the growers at about one-half actual cost. A strong field force is an important part of the canners' organization, as the peas must be harvested at the proper stage of maturity and delivered to the cannery with promptness and dispatch. The production and canning of peas must be carried on with the utmost care for in no other way can a high-grade product be obtained.

Canning-crop peas succeed on a wide variety of soils provided they are well drained but not so porous that they lose moisture rapidly. Clay loams, well supplied with humus and lime, are well adapted to the crop. More depends on the drainage, fertility, and

general condition of the soil than upon slight variations in type, such as from heavy loams to light loams. Extremes of any character are to be avoided. The land must be clean, and well supplied with organic matter. In brief, as indicated by this discussion, land for canning-crop peas must be the very best land on farms where crop rotations, including the use of a group of unrelated crops, have been employed for maintaining soil balance and aiding in the control of insects and diseases which are liable to attack the pea crop.

Thorough soil preparation is absolutely necessary for peas, as a fertile deeply prepared, mellow seed bed is one of the chief essentials in successful pea culture. Being grown without cultivation the operations before planting will influence, in part, the water content of the soil for the crop season. The preliminary preparation will also largely control the development of the root system and influence the extent of weed infestation.

Being a leguminous plant, and possessing the ability of other members of this group to gather nitrogen from the air through the agency of the nodule-forming bacteria the plant does best when grown on inoculated soil. Areas, especially those which have been devoted to the growing of peas and related crops, already have sufficient inoculation, but when there is need for the treatment crop yields are materially increased by inoculation.

The character of the seed used in establishing the canning crop of peas is of prime importance. Great losses have occurred through the employment of unadapted varieties or through the use of mixtures of good and poor sorts. Canning peas are of two general types, the smooth early type, the Alaska being a widely used representative of this group, and the wrinkled or so-called sweet varieties, including such sorts as Horsford Market Garden, Admiral, and others. According to available information about 55 per cent of the canning crop of peas consists of the Alaska type, while the wrinkled sorts constitute the remainder of the pack. Especial trouble has been experienced through the use of spurious Alaska peas, which, having very long, heavy vines do not ripen uniformly and rarely give more than a small crop of usable peas at one time. If mixed with purple-flowered varieties some peas will darken on processing and the canned peas will not be salable. Various remedies having to do with seed supply are employed for these troubles. Some canners have adopted the plan of producing their own supply of seed from stock of proved performance and under controlled conditions. Most canners do not, however, wish to become seed growers as they have problems enough without adding this. Perhaps the most widely followed plan is to purchase seed from commercial growers who grow their seed under rigid inspection and who exercise precautions to keep their stocks true to name and free from mixture. Whatever the source of the seed the canner can not afford to take chances.

The production of peas on the scale required in modern canning has brought about the adoption of cultural practices of a distinctive character. In most sections the peas are drilled in the same manner as wheat, rye, and other grains, but covered about 4 inches. In a few locations they are drilled in rows and cultivated. With broadcast seeding no cultivation is attempted or, as a matter of fact, possible. The crop soon covers the ground with a dense

mass of vegetation which usually controls weeds. However, if the land is badly infested with weeds, if it has not been properly prepared, or if conditions for the peas are not otherwise satisfactory, weeds and grass may gain the upper hand with serious damage to the crop. The need for thoroughness in all cultural practices is evident.

In the early days peas were gathered and shelled by hand. Market demands soon made this method too slow and costly. Harvesting by cutting with an ordinary mowing machine fitted with special lifting guards and a bunching device soon came into vogue. Following the mower the peas are loaded, vines and all, upon wagons (fig. 198) and are hauled to the viner. The introduction and improvement of the viner, or machine for shelling the peas and separating

FIG. 198.—Canning-crop peas are harvested and handled in much the same way as other field crops

them from the vines, was the most important factor in the development of the pea canning industry on a large commercial basis. With the aid of these machines it is possible to handle the crop as quickly and expeditiously as is the practice with the grains. The peas can be hauled from the field and fed into the viner with a pitchfork. Figure 199 shows peas being unloaded from wagons into a battery of viners which serve a large Wisconsin packing plant. Silage is made from the vines and is a valuable by-product for feeding purposes. In some cases it is returned to the farmers who supply the peas to the cannery, usually on a pro rata basis at nominal cost, but in other cases it is fed to livestock by the canning company. The use of local vining stations makes it possible to feed the pea silage near the place where it was grown, thereby saving long-hauling costs. These vining stations may be several miles from the cannery as truck, trolley, or other transportation makes it possible to trans-

port the shelled peas only to the cannery, thereby greatly extending the area from which the plant can draw its raw product.

In 1925, the canning-pea crop had an average farm value of over $50 per acre. It requires from 4 to 5 bushels of seed to plant an acre of peas. Yields of 2 tons or more of shelled peas per acre are obtained under favorable conditions. The use of good land, high-quality seed, and the practice of careful cultural methods are all necessary to obtain these increased yields.

FIG. 199.—Viners fed from the wagons with pitchforks separate the peas from the vines. Labor-saving devices, making possible the handling of large acreages of canning-crop peas, are largely responsible for the great extent of the pea-canning industry

Miscellaneous Canning Crops

Although tomatoes, peas, and sweet corn represent a large portion of the annual value of the vegetable-canning crops, certain others, including asparagus, cucumbers for pickling, cabbage for sauerkraut, snap beans, Lima beans, beets, and spinach have a high annual value and are of great economic importance to both the producer and consumer.

Cucumbers for Pickling

That the public is fond of cucumber pickles is shown by the fact that almost 100,000 acres are devoted to the crop each season, with the average annual production for the period of 1921–1925 amounting to almost 4,000,000 bushels. The average crop for this period allowed 1 bushel to each 30 persons in the United States. On the basis of first-grade pickles this would mean the enormous number of about 2,810,950,000 pickles. A considerable part of the pickles, however, are of larger size than standards and the actual number is much less.

Cucumbers for pickling are usually planted for that specific purpose and are handled in a somewhat different manner than is the case with the market crop. Some attention has been devoted to the possibilities of marketing the early portion of the crop while prices are high and using the latter parts for pickling. This plan has little to recommend it, as varieties suitable for market are not good pickling sorts. Vines which have been allowed to produce market size cucumbers

seldom give worth-while yields of high-grade pickles, and other difficulties stand in the way. The pickling industry has developed in several portions of the country but like all other highly specialized crops it has attained its greatest importance in sections where climatic, soil, labor, and other conditions are particularly favorable. A few States produce a large part of the crop. Although some changes in proportionate acreage occur from season to season, the most important States are Michigan, Wisconsin, Indiana, Iowa, Colorado, Minnesota, California, New York, Illinois, Ohio, Missouri, and Washington. Pickling cucumbers appear to be especially adapted to sections having good soil and where the summer temperature and climate are moderate, with an abundant and well-distributed rainfall. The growing season must be sufficiently long but on the other hand the long summers of the South are not especially favorable for the growing of pickles. Insects and diseases have much to do with

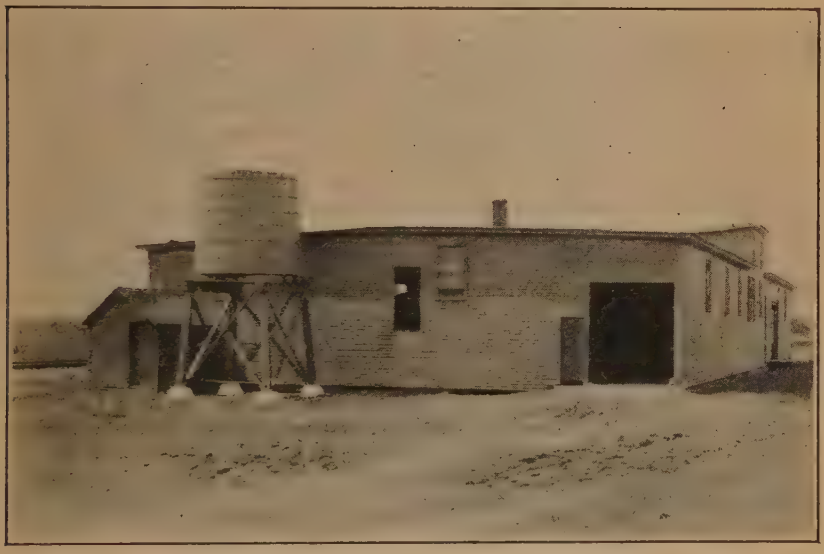


FIG. 200—Cucumber pickle salting station

the distribution of the pickle industry. This phase of the subject will be discussed elsewhere.

The growing of pickle cucumbers can be successfully prosecuted only when given the most painstaking care. In the first place, the acreage must be located within easy access to a salting station. As a rule, the crop is grown under contract between farmer and pickle manufacturer, the acreage being located within a few miles of a salting station where the cucumbers are received and salted for later shipment to the factory. Figure 200 shows a characteristics cucumber pickle salting station with water tank, pump house, inside unloading platform, and housing a number of salting vats or tanks. That the industry is profitable to the good grower is shown by the fact that some salting stations have been in operation in the same location for as much as 40 years, individual growers having had acreage for 20 years or more. Like all other intensive crop indus-

tries, it is not popular with the man who dislikes work which demands close attention, for cucumbers can not be neglected.

In common with other intensive crops cucumbers demand good soil. A rich sandy loam with a clay subsoil is recommended, but other kinds of soil are used with good results. It is particularly desirable that the land be well supplied with organic matter either in the form of manure, or the decaying remains of previous crops of grass, clover, alfalfa, or others. Rotation is as desirable for cucumbers as for other crops and it is especially desirable that this crop follow some unrelated one, as many of the insect enemies and diseases affecting cucumbers may hibernate in the field or remain in the soil from one year to another.

Good seed of an adapted variety is one of the first and most important factors to be considered. Some of the pickle manufacturers supply their growers with seed for planting. Whatever the source it should be of unquestioned purity and of the type demanded by the buyer. Seed treatment for the control of seed-borne diseases is required by the best growers. This work can be done most advantageously by the agency supplying the seed, as it can be treated in large lots at relatively small expense. In the past thick planting has been the practice, but this makes a heavy mat of vines which cover the ground and makes it very difficult to pick the crop. Thick planting, with resulting difficulties in harvesting, is responsible for much of the trouble experienced in obtaining satisfactory results with the cucumber-pickle crop. Old methods called for hills from 3 by 6 feet to 6 by 6 feet apart with three or four plants to each hill. Many growers now plant in 7-foot rows, the hills being 3½ feet apart, and thin to one plant in a hill. By following this method the ground is not fully covered which makes it possible to cultivate and harvest without difficulty and at the same time good yields are obtained. These single plants make a large growth, frequently attaining a diameter of an inch or more, and having from 12 to 20 lateral branches, all of which may bear cucumbers. The highest-grade cucumbers are from 1 to 3½ inches long, and as a rule are sold by weight, these sizes bringing the highest price. The plants will bear over a longer period if no cucumbers are allowed to mature, and it is to the advantage of both grower and buyer to harvest frequently.

Harvesting must be by hand which is not difficult when thin planting is practiced. The cucumber-pickle crop brings good returns per acre. It is a cash crop, and it would be difficult to find one better suited to the farmer who wishes to supplement his regular farm work with a few acres of cucumbers, thereby obtaining a substantial increase in his income. There are few better methods whereby an energetic boy or girl can earn ready money. Many who are located near a salting station and who can procure land which is suitable make enough from an acre or two of cucumbers to defray school expenses for the year.

There would seem to be little danger that the growing of cucumbers for pickles will be overdone. It requires much hand work in harvesting, and is not adapted to large-scale production. The work requires close attention, especially during harvesting time, and does not appeal to those who wish to be free to come and go at their

pleasure. The farmer or other person with the right land who is within reach of a salting station and who can make satisfactory arrangements for the sale of his crop is likely to find it a very attractive undertaking.

Asparagus

The production of asparagus for canning is a very much localized industry, as the entire commercial production comes from two States—California and New York. According to available information 26,400 acres of the 26,530 acres of the canning crop in 1925, was located in California. The production that year amounted to 47,600 tons, with a farm value of $3,795,000.

Production methods followed in growing canning-crop asparagus are similar to those employed for the table crop. White asparagus is used for canning, this being obtained by ridging the rows early in the season and cutting the spears several inches below the surface. Nearly all vegetable-canning crops must be handled with all possible speed, but this is especially necessary with asparagus. Canning companies formulate their plans so that the asparagus can be transported to the factory and canned within a few hours of the time it is cut.

Snap Beans

Snap beans for canning are produced in commercial quantities in a number of States. According to data gathered and compiled by

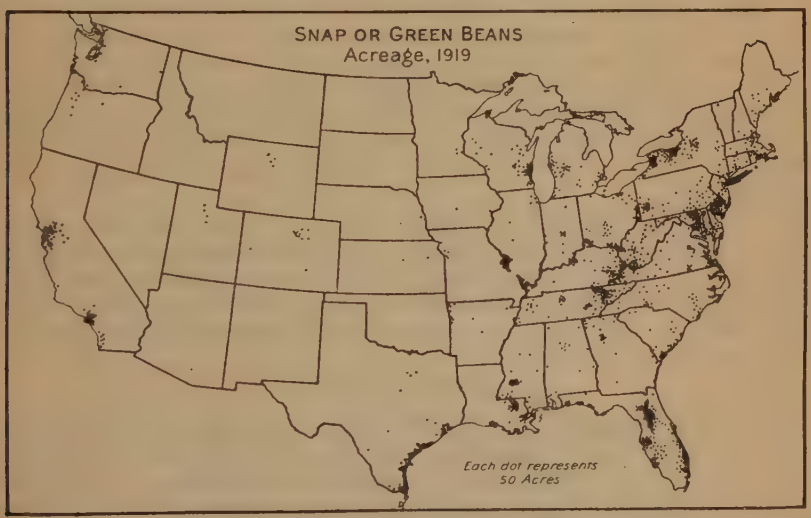


FIG. 201.—Acreage planted to snap or green beans in 1919 according to the census figures

the Bureau of Agricultural Economics, the acreage in 1925 amounted to 30,980 acres with a production of 66,000 tons. The yield was 2.1 tons per acre, having been 2.3 tons in 1921, 2.4 tons in 1922, 2.1 tons in 1923, and 1.9 tons in 1924. The most of the snap-bean canning crop comes from a few States. New York led in 1925, with 6,370 acres, while Wisconsin had 3,610 acres, Michigan 3,000 acres, Maryland 2,950 acres, Colorado 1,650 acres, with Louisiana, Maine, Cali-

fornia, Oregon, Pennsylvania, Tennessee, Utah, Washington, and other States producing the remainder of the crop. The distribution of the green-bean-growing industry is shown in Figure 201. This map is based on acreage, each dot indicating 100 acres, and including both canning and market-crop green beans. The location of the canning crop is indicated in the acreage figures given in the text of this paragraph.

Canned snap beans are rapidly gaining in popularity with the consumer, but they are a rather difficult crop for the grower to handle as the harvesting must be done by hand.

Cabbage for Sauerkraut

The production of cabbage for sauerkraut making has assumed large proportions during recent years. Like the canning industry, sauerkraut production is centralized at points which are adapted to the production of the particular type of cabbage required for making sauerkraut, namely, a solid head which suffers a minimum of loss in outside trimming and which has a small tender core. The development of sauerkraut canning in tin cans makes this delicious and healthy commodity available for use under practically all conditions.

Formerly sauerkraut was shipped mainly in barrels or kegs and was subject to a certain amount of spoilage loss. Under the present method of canning in No. 3 cans, it is an easy matter for the housekeeper to keep two or three cans on her pantry shelves for use at any time. Considerable quantities of sauerkraut are still sold in bulk by grocers, especially in sections where the population relies upon sauerkraut as a regular part of its diet. The commercial sauerkraut crop is practically all grown during the latter part of the season, and the manufacture of the product is carried on during late fall. New York, Ohio, Wisconsin, and Michigan are leading producing States, but additional supplies come from many other sections.

Spinach, beets, green Lima beans, cauliflower, pickling onions, and many other vegetables enter largely into the canned, preserved and pickling products of the United States, some of these constituting considerable industries in themselves and should be included in any comprehensive survey of the vegetable products grown for canning and preserving.

Perennial crops

Asparagus, rhubarb, and horse-radish are the most important perennial crops of our American gardens, and all three were brought into this country during early days of colonization. Later, the Japanese vegetable known as Udo was introduced and is grown to a limited extent as a perennial crop in the United States. Asparagus heads the list of perennial vegetables in commercial importance and the demand for this special early spring vegetable is rapidly increasing.

Asparagus

According to the Treasury of Botany and Sturtevant's notes asparagus is a native of Europe and is found growing wild in parts of Great Brtain near the sea, and in the southern parts of Russia and Poland the waste steppes are covered with it, and it is eaten

by horses and cattle as grass. Pliny also mentions a sort that grew in his time near Revenna of which three heads would weigh a pound. This would indicate that the Romans had varieties or strains of asparagus that were fully equal to anything now grown in this country. The Romans of the time of Cato, about 200 B. C., knew it well and Cato's directions for culture would answer fairly well for the gardeners of to-day. Pliny, writing in the first century mentions asparagus, praising it highly, especially the wild forms, and recommends transplanting it to the wild places that are unfitted for other forms of agriculture.

It is not definitely known when asparagus was brought into this country but probably during the early days of English settlement. In the Middelbury (Vt.) Register of June 29, 1917, there appeared the following statement:

> There is an asparagus bed on the Elias Lyman farm at the "Point," town of Hartford, which was started 101 years ago, and continues to this day to yield an annual and generous crop. The bed has never been replanted with new roots, but because of an intelligent making of the original bed, its favorable location and its never neglected cultivation, it has maintained its existence and has given its owners in this present season and the first year of its second century a supply free from defects and in every way of the best quality. This bed from the first has ever been free from asparagus rust that has now become so frequent in all sections of New England.

It was not, however, until after 1850 or 1860 that asparagus was planted extensively by commercial growers in this country. During recent years the expansion of the commercial asparagus industry has been rapid and widely distributed. According to figures compiled by the Bureau of Agricultural Economics, the commercial and canning acreage of asparagus in the United States during 1925 was approximately 56,000. The acreage of asparagus both for table and canning is increasing rapidly, the most important increases being mainly in California, New Jersey, and South Carolina. Asparagus is one of the first of our early-spring vegetables, and has increased greatly in popularity during the last few years. The present increase in acreage of asparagus is justified by the demand for both the fresh article during the spring months and to meet the requirements of the asparagus-canning industry. Asparagus is especially adapted to growing on low, alluvial, and loamy but well drained seacoast soils; it withstands and in fact seems to benefit by the presence of a small percentage of salt in the soil and responds readily to heavy fertilization. The recent development of rust-resistant varieties of asparagus has practically revolutionized the industry through increased yields and improved quality.

Asparagus rust, which is caused by a parasitic fungus (*Puccinia asparagi*), is a native of the Old World and was first found in America in 1896 near New York City. Within 10 years the rust had spread to all the asparagus-growing regions of the United States and caused serious losses everywhere. Control measures such as dusting and spraying were for the most part ineffective, but it was soon discovered that certain new strains, developed in Europe under rust conditions, resisted rust attacks better than our old strains, which had lost any immunity that they might once have possessed. In 1906 the Massachusetts Asparagus Growers' Association secured the cooperation of the United States Department of Agriculture and the Massachusetts Agricultural Experiment Sta-

tion in a breeding project, and J. B. Norton of the Bureau of Plant Industry was assigned to the work. Varieties from all over the world were collected at Concord, Mass., and subjected to rust-epidemic conditions. Not one plant was found to be completely immune to rust, but in 1908 selections were made of the most resistant ones and seed produced in 1909. From the lots of seedlings grown in 1910, one male plant, A 7–83, of unknown American origin, and a female plant, B 32–39, from Reading Giant, procured from Sutton & Sons of Reading, England, were crossed and gave the best progeny of the hundreds of combinations. From this combination came the first resistant strain, which was named Martha Washington.

The male plant, Washington, and the female plant, Martha, with other female plants, were removed to the Arlington Experimental Farm, near Washington, D. C., the crowns being separated into several divisions and planted in an isolated bed for breeding purposes. Several new female plants were added from time to time as they showed their value as producers of good seedlings. Notable among these was a giant female taken as a seedling from a bed of Reading Giant grown by C. W. Prescott at Concord, Mass., in 1910. This plant was named Mary, and in combination with the male plant, Washington, has given the newest-named strain—Mary Washington.

As asparagus is one of the very first green vegetables to appear in the spring, it is desirable for planting in home gardens and in market gardens serving roadside markets and local town or village trade. On the basis of average yields, an acre of asparagus will produce about 3,500 pounds, or 1,750 bunches of 2 pounds each. On the same ratio of production, 100 plants in the home garden would yield about 85 pounds during a cutting season of six to nine weeks or an average of nearly 2 pounds per day. It is reasonable to expect a planting in the home garden, through superior fertilization and care, to yield at a higher rate than would be obtained under field culture, especially after four or five years from planting. Much depends, however, upon the care exercised in the original making of the bed and the selection of well-grown plants for setting. On account of their rust-resistant tendencies, the Washington varieties are recommended for planting throughout the East, both in the home garden and in field culture. In California varieties adapted to canning are largely used.

Rhubarb

The various species of rhubarb are found distributed fairly well over the Old World with one species accredited to the Himalayas. The parent species of most of our rhubarb (*Rheum rhaponticum* Linn.) is accredited to southern Siberia and the region of the Volga. This species, which is the commonest of rhubarbs, was introduced into Europe about 1608. In 1806 M'Mahon mentions rhubarb in American gardens and says the "footstalks are very frequently used and are much esteemed for tarts and pies." J. Lowell in the Massachusetts Agricultural Repository, 1822, says "thirty years ago we were strangers to rhubarb, now in general use and constantly in our markets, and we are indebted for its introduction to an amateur in the State of Maine." T. S. Gold, of Connecticut, wrote "that his

father purchased a small package of pieplant seeds in 1820 and raised the first plants then known in this vicinity." The seed was sold by Thorburn in 1828.

Rhubarb is adapted for cultivation throughout the northern portion of the United States having natural rainfall and where the temperature goes sufficiently low in winter to freeze the ground to a depth of 4 inches or more. Throughout this territory rhubarb is found in home gardens and in certain sections near the larger eastern cities, has attained considerable importance as a commercial crop. Rhubarb has not become an important shipping crop as has asparagus. Plantings of 3 to 5 acres in market gardens are common, and in a few cases plantings of 20 to 30 acres are to be found. Rhubarb can very often be grown on hillsides and on rough land which is unsuited to the production of the more intensive garden crops. It is one of the earliest of our spring vegetables and owing to its splendid acid qualities, is in great demand for the making of pies, tarts, and for sauce. Rhubarb is of little value as a canned vegetable by itself, but makes an excellent sauce or dessert when canned in combination with strawberries or raspberries. Where it is canned straight for winter use in making pies, it is generally placed in No. 10 enamel tin cans with plain water as a filler.

For the last 30 or 40 years, there has developed quite an important rhubarb-forcing industry during the winter months, mainly in specially constructed houses. Two methods have been followed in the forcing of rhubarb. By the first, and most important method, the roots are plowed from the soil during the late fall and allowed to lie exposed to the weather and become frozen with the earth attached to them. The chunks of frozen earth surrounding the hills of rhubarb are then removed to cellars and placed on a concrete floor or on staging, and the space between the lumps of frozen earth filled in with loose soil. The temperature is carried at 45° to 65° F. and water is applied as needed, usually about once a week, care being taken, however, to guard against overwatering. The cellar in which the rhubarb is being forced should be kept practically dark in order to produce a uniform color, blanched product with leaf blades about the size of a man's hand. The second method of forcing rhubarb is by means of special houses with heavily insulated walls and moderate stove heat. The frozen chunks of rhubarb roots are handled in these houses in the same manner as in cellars. Small quantities of rhubarb can be forced where grown under a portable coldframe banked with manure, or by lifting the frozen hills and placing them in an ordinary cellar. The leaf stems of forced rhubarb are usually much more slender than those grown in a natural way. Rhubarb in the home garden can also be forced by placing boxes or bottomless barrels over the hills, banking around them with horse manure to provide heat and covering with glass.

Rhubarb requires a rich soil and should be fertilized during the summer in order to enable the plants to store up reserve food in their roots from which the strong crop of edible leaf stems are produced. Rhubarb production is essentially a local proposition and is dependent mainly upon near-by markets. However, with the increased demand for vegetables, rhubarb production has great possibilities as a commercial industry.

Horse-Radish

According to Sturtevant's "Notes on Edible Plants," horse-radish came into eastern Europe from the Caspian through Russia and Poland. Both the leaves and the roots were eaten in Germany during the Middle Ages, but their use in England was not common until a much later period. Horse-radish was included by M'Mahon in 1806 in his list of garden esculents. Although horse-radish has been in general cultivation for market purposes in the United States for the last century, its production is not on a large scale and commercial growing is limited to a few well-defined areas. Another species of horse-radish is grown along mountain streams in Japan, but this species has never become important in the United States.

The production of horse-radish for the market requires a large amount of labor and special soil conditions, therefore, it is not adapted to a wide range of commercial growing. Two methods of production are followed, the older method being to plant crowns or small roots vertically in the soil and allow these to remain two or three years and sometimes longer in order to produce marketable roots. The improved method, and the one now followed by the majority of the commercial growers, is to select seed roots which are about the size of a lead pencil and 5 or 6 inches in length during the fall while the marketable crop is being harvested. These seed pieces are either buried, mixed with soil in a pit, or are carried over in barrels of sand in a cool cellar. In the spring just as soon as the ground can be worked the seed pieces are planted in shallow furrows, placing them almost horizontal and covering slightly with earth. Later the soil is removed from all but the lower portion of the root and the rootlets and buds that have formed toward the upper portion removed and only one leaf crown allowed to remain at the top of the seed root. The soil is then replaced and this process repeated two or three times during the growing season, the object being to develop a large, straight, and smooth root that is free from branches and practically uniform in thickness throughout its length.

Horse-radish requires a rich, reasonably moist soil, and plenty of plant food in order to make a rapid growth. It is adapted to growing in home gardens throughout the northern sections. Its use is entirely as a condiment, especially with cold meats and with fish and oysters, to which it adds zest and a pleasing flavor. The usual method of preparing horse-radish for use is by first peeling the roots, then grating them and mixing with vinegar. Horse-radish is usually marketed in barrels or by the ton, the price varying according to the supply and demand. Twenty barrels will weigh a ton and the price as a rule varies from 7 to 15 cents a pound.

Farm Gardens

This discussion of vegetables would be incomplete without at least a brief reference to the importance of the farm garden. According to the census figures gathered in 1919, farm gardens were reported by 5,090,293 or 78.9 per cent of all farms in the United States. The value of the products of the farm gardens amounted to $344,665,728, an average value of $68 per farm reporting.[a]

[a] Report of the Fourteenth Census: Agriculture—Farm Vegetables.

Farm Gardens, by States

Among the several States, the proportion of all farms reporting farm gardens in 1919 varied from 31.5 per cent in Arizona and California to 92.6 per cent in West Virginia. Farm gardens were reported by 90 per cent or more of the farms in 4 States, namely, West Virginia, Virginia, Delaware, and Pennsylvania; by 80 to 89.9 per cent of the farms in 21 States; by 70 to 79.9 per cent of the farms in 9 States; by 60 to 69.9 per cent of the farms in 5 States; and by less than 60 per cent of the farms in the remaining 9 States.

In five States the value of the products of the farm gardens in 1919, exceeded $15,000,000, as follows: Texas, $18.023.859; Pennsylvania, $16,989,459; North Carolina, $15,848,541; Ohio, $15,646,395; and Missouri, $15,354.668. The average value of the products of the farm garden per farm reporting was $100 or more in 7 States, as follows: Rhode Island, $120; Massachusetts, $117; Nevada, $117; New Jersey, $116; West Virginia, $108; New Hampshire, $104; and Connecticut, $101.

Vegetables produced in farm gardens while usually reckoned at values lower than those obtaining on the markets should be valued at a much higher rate for the reason that they supply the farm home with the essential type of food and increase the variety in the diet of the farm family. Where little or no attention is given to the vegetable garden by farmers and where no definite arrangement is made for the purchase of vegetables, there is always lacking from the diet of the farm family the essential elements of a balanced diet. The claim made by many farmers "that it does not pay to plant and care for a garden and that it is cheaper to purchase vegetables on the market" is not borne out in fact, as no other similar area on the ordinary farm yields so great a return either for the land occupied or capital invested as the farm garden.. Furthermore, it has been found that where the vegetables are not grown on the farm, that they are seldom, if ever, purchased in the same quantity and of the freshness of those grown on the farm.

It is significant that in the sections of the country where the best general farming methods are followed, there are also found the best farm gardens, and conversely in farming sections where the farming methods are less perfect, there also are found the poorest farm gardens.

According to the census figures obtained in 1920, Texas stood at the head of the list as regards total value of farm gardens, this being explained by the enormous size of the State. Pennsylvania, a much smaller State, stood second. and it is in Pennsylvania that we find some of the finest farm gardens in the United States. When it comes to the value of individual gardens, Rhode Island, the smallest State in the Union, stands at the head of the list with an average value of $120 per garden. This may be accounted for by the fact that in Rhode Island the value of land is extremely high, thus stimulating intensive production.

It is significant that the percentage of farmers having gardens is highest in the Northeastern States and lowest in the Rocky Mountain and Pacific Coast States. The highest average value of all farm gardens is found in the New England section. The average

value of farm gardens in the Southern States is relatively low, owing to the fact that in the past is has generally been considered impossible to raise vegetables during the long, hot summer season. Recently a campaign has been conducted by the State extension forces to stimulate interest in the production of vegetables at all seasons of the year, and in certain of the Southern States there are now thousands of farms on which an all-the-year garden is maintained, the slogan being "two fresh vegetables from the garden every day in the year."

The figures and comparisons given for farm gardens in the United States does not include the many thousands of small gardens cultivated on town lots and in city backyards, the aggregate value of which will reach into the millions of dollars. Vegetable gardens were promoted during the World War as a means of supplying food for local consumption. The experience gained by city, town, and village gardners during the war period has led many to continue their gardening operations so that the present value of this feature of home gardening is very large, but there is no way of determining its exact value. The experience of the gardeners has also taught them the value of fresh vegetables.

The significant fact in connection with the home garden is not, however, the value in dollars of the individual garden but the aggregate or total for the country, which is above one-third of a billion dollars. Added to this is the great advantage of supplying the family with vegetables that are fresh and wholesome.

Present Trends in Vegetable Production

The reader has no doubt been impressed with the enormous proportions that the various commercial vegetable crops have attained, both as regards money value and quantity of product. The writers have endeavored to portray the history, distribution, and relative importance of the various crops, together with a composite picture of the vegetable industry as a whole.

The trends of the vegetable industry during the last 10 or 12 years have been very decidedly toward specialization and production of many of the more important crops on a large scale in certain rather well-defined locations. The concentration of population in the large industrial centers has to a large degree eliminated the personal equation between producer and consumer and has more definitely commercialized the production and handling of vegetables on a large scale. The trends have also been toward reduction in the number of varieties grown, greater uniformity in production practices, and the establishment of definite standards of grade and pack to meet the market requirements.

The adoption of labor-saving machinery and improvement in cultural practices have increased both the man power and acre production on the truck farms of the country. As indicated in the foregoing pages, the old-fashioned market garden with its numerous crops is rapidly giving way to the specialized truck farm on which a comparatively small number of individual crops are grown on an extensive scale. The trends have also been toward closer cooperation among growers and to a more definite working understanding between the growers and the dealers.

DISEASES AND PESTS OF FRUITS AND VEGETABLES

By M. B. Waite, W. W. Gilbert, N. A. Cobb, and W. R. Beattie, *Bureau of Plant Industry;* F. E. Brooks and J. E. Graf, *Bureau of Entomology;* and W. B. Bell and W. L. McAtee, *Bureau of Biological Survey.*

REFERENCE has been made in the earlier pages to the influence that the Old World fruits, vegetables, and nuts have played in the development of American horticulture. When the first settlers came to America, as has been stated they found certain native fruits and vegetables being used by the Indians, and these together with other wild species were domesticated and used by the colonists. Old World species were brought over from time to time as the colonists gained in experience and were added to the list of native sorts, gradually forming the basis for our present American horticulture. The colonists had not gone far in the domestication of the wild American species or in the introduction of those from the Old World until they met with certain disease and insect troubles. Not only did the native diseases and insects attack the cultivated fruits and vegetables, but along with the importation of Old World species came the diseases and insects which preyed upon them.

Coming down through the years covering the development of American horticulture from Colonial times, there has been a constant increase, both in the number of species and the destructiveness of diseases and insects and other forms of life that have preyed upon the various horticultural crops. It was not until comparatively recent years that active steps were taken to study the life history of the many horticultural pests and in still more recent years to quarantine against the introduction of additional pests. During the early days the demands for perfection in the product of horticulture were not so exacting as at present, nor were the diseases, insects, and other pests so numerous either as to species or as to individual numbers. During the course of time, injury from horticultural pests became so marked as to require concerted action calling for investigation to determine means of combating these pests.

Numerous references in the following pages allude to both the development and spread of horticultural pests and to the history of measures formulated for their control. Marked progress has been made in the control of diseases of such crops as asparagus, cabbage, beans, tomatoes, potatoes, peas, lettuce, celery, and spinach through the breeding and selection of disease-resistant strains and varieties. In many cases these resistant strains are exceptionally vigorous and possess excellent marketing and edible qualities in addition to disease resistance. Just how far immunity from the attacks of diseases and insects may be obtained through the breeding of resistant varieties and strains is problematical, but the progress already made indicates wonderful possibilities.

Combination treatments to control two or more pests or more than one type of infestation are being worked out, so that the general control of horticultureal pests is constantly being made more simple and effective. The development of special equipment for spraying, dusting, fumigating, soil sterilizing, and various other control operations has rendered more effective the various control measures and resulted not only in effectiveness but in more economical treatment.

Similar progress has been made in the development of fungicides and insecticides as well as in the improvement of their application. Numerous disease and insect infestations have appeared and gradually spread over the entire country, but in most cases satisfactory measures have been perfected before the spread has caused any very great damage. With the more general acceptation and application of control measures, infestation and injury become less and less, and there is the possibility that in the course of time, when the proper control measures are universally applied, infestation can be practically eliminated. So long, however, as there are in every fruit-growing neighborhood neglected orchards, and in every vegetable section careless methods of control of the diseases and insects of vegetables, we may expect a continuity of infection and injury. Marked progress has been made in certain sections of the country in the control of diseases and insects through the agency of spray rings by which all the growers of a given community employ one man to handle the spraying of the entire community. By this method the fight against destroying agencies is timely in its application and is performed in the proper manner, with the result that a higher degree of control is obtained than where the work is conducted individually.

The aid given the growers by the State agricultural colleges and experiment stations in furnishing timely information on the control of the various pests has had a marked effect. It is not too optimistic to suggest that in the course of years the work of combating the pests of horticulture may be so thoroughly organized and conducted as to obtain practically complete control. The economic factor of cost will undoubtedly remain through all time and must be reckoned as a legitimate part of fruit and vegetable production costs.

The consideration of horticultural pests as contained in the following pages has for convenience been divided into several groups as follows: Fruit diseases and their relation to the fruit industry, fruit

insects and their economic importance, diseases of vegetable crops, the insect enemies of vegetables, the relation of nematodes to the fruit and vegetable industries, and birds, mammals, and other animals in relation to fruit and vegetable production. Though all of these contribute to the problem of producing marketable horticultural products, they have for convenience been treated more or less separately in order that the reader who is interested in any one phase of the problem may the more readily obtain the information he desires.

The Influences of Diseases on American Fruit Culture

The diseases of fruits and fruit trees, the blights, leaf spots, rusts, fruit spots and rots, root rots, and physiological diseases and winter injuries have had an important economic effect on American fruit and nut culture. The scientific research in plant pathology devoted to solving the causes of these diseases, the life histories of the parasitic organisms concerned, the physiological disturbances involved, as well as the study of remedial and control measures, have exerted a profound influence not only on fruit culture but on other lines of scientific research helpful to agriculture. It is almost equally true that for the last 40 years American fruit growers have exerted a dominating influence on the development of plant pathology.

At the meeting of the American Horticultural Society (previously the Mississippi Valley Horticultural Society) in January, 1885, held in connection with the World's Industrial Exposition at New Orleans, La., a group of gentlemen met informally and urged the then Commissioner of Agriculture, Norman J. Coleman, to start investigations on the diseases of fruits and other plants at Washington. This group consisted of Parker Earle, the president of the horticultural society, his son, F. S. Earle, a horticulturist and trained mycologist and plant pathologist, T. J. Burrill, S. M. Tracy, C. E. Bessey, and others.[1] Their efforts were successful. A mycological section of the Division of Botany in the Department of Agriculture was established July 1, 1886. A first report of this section and the first of a series of reports followed in due course. Annual reports of investigations, bulletins, circulars, and other publications have been issued from time to time ever since.[2] So far as the writer can determine there is no printed record of the informal action which, it is supposed, had an important influence in causing Commissioner Coleman, who three years later became the first Secretary of Agriculture, to start plant pathological work at the seat of the Federal Government. However, F. S. Earle, in a paper on "the fungoid diseases of the strawberry" read at this meeting and printed in the report[3] made the following statements:

> In closing these hasty notes, I wish again to call the attention of the society to the importance of securing some provision for the systematic study of the fungi and their relations to our agricultural and horticultural interests. This could perhaps be brought about through the instrumentality of the Department of Agriculture, and, in fact, a beginning has already been made in this direction,

[1] Conversation with the writer by T. J. Burrill at the University of Illinois in 1888 and subsequent conversation with S. M. Tracy, of the University of Missouri, at Washington.
[2] Annual Report U. S. Dept. Agr. for 1886.
[3] Transactions Amer. Hort. Soc. for 1885, held at the World's Industrial Exposition at New Orleans, La., pp. 51–52.

as is shown by the carefully prepared series of water-color drawings of fungi in the exhibit of that department in the Government building.

If the measure for establishing experiment stations in the different States, that was advocated by this society at its meeting here two years ago, should become a law, then this subject could receive the attention due to its importance by employing a competent person at each station to collect material and make experiments under the direction of a central office, connected with the Department of Agriculture if you please, that should be provided with a complete library and all of the apparatus necessary for the most thorough investigation.

Professor Riley, the entomologist of the Department of Agriculture, has created a very similar system for conducting his researches, having his assistants located in different parts of the country.

Such an organization as is here briefly outlined once established and we could hope in time for results that would be of the greatest importance to all the material interests of the country.

It should be noted that Mr. Earle's statement urged not only the organization of research on plant pathology in the Department of Agriculture, but also urged the establishment of experiment stations in the different States, which will be discussed further on.

It is not easy to analyze historical movements 40 years later with incomplete, scattered, and fragmentary records and no doubt with much of the important thought of these brainy, far-visioned pioneers in this field developed in unrecorded conversations. Putting all the known facts together, however, there is little doubt that the action taken by the men meeting at this great exposition was the culmination of a series of activities, scientific researches, horticultural observations, and conversations; in other words, from one point of view it was the end of a series of events as well as the beginning of another series. We may briefly summarize some of the most important activities and conditions previous to 1885 which led to this action.

Ever since the days of Linnæus and even to some extent before, the science of botany had been steadily developing. Not only had the higher plants been classified and named, but in even greater numbers the lower plants including the parasitic fungi which cause one class of diseases and many of the bacteria had been discovered, named, and classified, and in a few cases even bacteria causing diseases of plants had been discovered, notably Burrill's discovery of the pear-blight bacillus in America (1878–1880) and Walker's bacterial hyacinth disease in Europe (1883–1899). Most of the investigations on the fungi up to this time had been made from the standpoint of the fungus itself rather than from the point of view of the disease it produced on its host plant.

A few men in Europe, notably Sorauer and Hartig in Germany, Millardet and Prillieux in France, and Berkeley in England, were studying plant diseases as such. In America, Burrill, beginning his work at the University of Illinois in 1872, was the most conspicuous example, but by 1885 his pupil, F. S. Earle, also J. C. Arthur, and perhaps a very few others had begun the study of plant diseases.

Discussions of plant diseases in literature date back to Bible times, and the writings of Aristotle in Greece and Pliny in Rome are sometimes quoted. There were several German textbooks previous to 1850, and in 1854 to 1857 M. J. Berkeley, in a series of papers which appeared in the Gardeners' Chronicle, gave the first general scientific treatise in English upon vegetable pathology. In 1874, however, Paul Sorauer of Germany published his "Hand Book of

Plant Diseases" and Robert Hartig his book on "Important Diseases of Forest Trees." For the first time the student had an up-to-date textbook. There were no American textbooks available at this time on plant diseases and in fact no available textbooks in English until several years later.

Plant physiology had been built up into a really great branch of the science of botany. Mostly in Europe but to some extent in America continued investigations on the physiology of plants had built up a great amount of accurate, recorded information and accessible literature on this subject. Many well-organized textbooks—mostly European, largely German, but some American—had become available to students and investigators of this subject.

On account of their influence on plant pathology the important discoveries and methods of research developed by Pasteur and his students in Paris and by Koch and his students in Berlin on the bacterial diseases of animals deserves special mention. At this time they were just at the height of their activities in making their phenomenal discoveries. Some of Pasteur's work preceded Koch's slightly. Koch's great work on the bacillus of tuberculosis appeared in 1885.

Another thing occured at that time which, undoubtedly, exerted a profound and stimulating influence on the practical side of plant pathology. This was the discovery by Millardet at Bordeaux, France, of the efficiency of the copper sulphate-lime mixture, which bears the name of Bordeaux mixture, in the treatment of the black rot and mildew of the grape. Two native American parasitic fungi of our wild grapevines, the black-rot fungus and the downy-mildew fungus, along with the insect pest, the phylloxera, had been accidentally introduced into France with collections of American native grapes. Millardet, a very able botanist, was employed by the French Government to investigate these diseases. In the fall of 1883, almost by accident, he found that this copper-lime mixture, which had been spattered onto some grapevines along the roadway to prevent stealing of the fruit, had in some way prevented the attacks of these two fungi. He followed up this clue by investigating the problem thoroughly from 1883 to 1885. By the aid of a brass worker named Vermorel, who improved the Riley or Barnard nozzle by introducing the degorger so that it would spray this slushy mixture, the spraying of plants began in earnest. It is difficult to estimate the far-reaching importance of this discovery.

Scientific plant pathology was fairly well started. Very little practical progress, however, had been made in controlling diseases by spraying. Thousands of plant diseases were well known as to their cause and even as to the life histories of the organisms. In general, however, mycologists and plant pathologists, or the few who could be called plant pathologists, were helpless when it came to a demand for a practical remedy. It is not true to say that no progress had been made up to this point. Sulphur had been used for dusting against the rose mildew and a few other diseases. Liming of the soil had been found effective for clubroot of the cabbage. Eradication was practiced with many diseases and rotation of crops and various other cultural methods had been employed. Most of

these methods were developed on purely empirical grounds without any guidance whatever from the science of plant pathology or mycology.

One thing is certain, namely, that the discovery of the effectiveness of Bordeaux mixture against the vine diseases in France attracted wide attention not only on the part of scientific men, but of horticulturists, especially grape growers and fruit growers. As indicated below, many devastating fungous and other diseases were prevalent in the United States. The American grape industry, which had been developing in the eastern United States along entirely new lines with native American grapes, had become a really great horticultural industry. At first the grapevines were little attacked by the native fungous diseases, but as usual with extensive new plantings, the fungous diseases increased. Black rot and mildew had become so prevalent as seriously to threaten the industry. These formerly somewhat obscure native diseases mildly attacking the fruit and foliage of the wild grapes had multiplied and spread to an alarming extent with the growth of the cultivated vineyards. The grape growers were insistent that something should be done to help them. The horticultural literature of that period contains frequent appeals. In this connection it is not surprising, therefore, that the first efforts of the newly established (1886) mycological section of the Division of Botany were concentrated on the fungous diseases of the grape. This continued for several years after the title of the section was changed in 1887 to the Section of Vegetable Pathology, and in 1893 to the Division of Vegetable Pathology and Physiology.

These early pathological studies, however, were by no means limited to grape diseases. The very first report of the mycologists treated of a newly introduced citrus scab in Florida, of pear blight, celery diseases, potato diseases, and even diseases of grasses, and the subsequent reports cover a wide range of the diseases of fruits and vegetables and other cultivated crops and of forest trees.

About the beginning of this century, as the data accumulated concerning the knowledge of the plant diseases, and especially methods of controlling them, it became increasingly evident that fruit growers and farmers were not putting into practice to a satisfactory extent the known methods of control. For example, the control of apple scab by spraying had been very carefully worked out. So had the control of grape diseases by the same methods. Control of peach yellows by rooting out the trees and of pear blight by local eradication and disinfection had been developed, but still many orchardists were not fully practicing the methods which had been discovered. This was equally true in other lines of scientific progress in agriculture, not only in insect-pest control but also in general agricultural methods of crop growing, rotation of crops, etc. Seaman A. Knapp was a pioneer in urging and developing demonstration and extension work. It was evident that a new type of worker was required in agriculture to make the knowledge available to the farmer and to put this knowledge into practice. This movement culminated in the Smith-Lever Act. There are now extension departments in the State universities and extension pathologists in nearly every State in the Union.

Still another group of activities has called for action on the part of plant pathologists and has resulted in putting into use accumu-

lated research knowledge on fruit diseases. In 1910, Congress passed the Federal insecticide act, modeled somewhat after the food and drugs act and aimed at raising the standard of insecticides and fungicides and preventing the interstate shipment of fraudulent or misbranded materials for use in pest control. In 1912, Congress passed the Federal plant quarantine act and provided for the appointment of the Federal Horticultural Board to enforce the same. The Federal plant quarantine act was designed to prevent the introduction of foreign pests not occurring in the United States or not widely distributed therein, and also to prevent the interstate movement of such pests. In the enforcement of both these regulatory acts the science of plant pathology was applied to agriculture and fruit culture and a number of plant pathologists were employed. The States also have similar regulatory acts for the control of the manufacture and sale of insecticides and fungicides as well as for the control of the distribution of fungous and insect pests and other contagious material which can cause fruit diseases.

Plant Pathologists

T. J. Burrill, of the University of Illinois, may be regarded as the pioneer American plant pathologist, one who studied the diseases of plants and especially of crop plants from the standpoint of the plant and its disease rather than from the standpoint of the fungus. When the writer was leaving his laboratory to go to Washington in the summer of 1888, he made this statement: "There are only about 10 plant pathologists in the United States. There are many professional botanists and a good many mycologists who are studying the fungi, but there are very few who are studying plant diseases, and there is more work on plant pathology being done now at Washington than anywhere else in the country," or words to that effect.

It should be noted that this progress, with a single exception of that made by Burrill himself, had all been made in the eighties. It should further be noted that there were very few colleges which gave the necessary training in mycology, bacteriology, physiology, and general botany to equip a man for scientific research on plant diseases, and none of the colleges had established courses in plant pathology. This indeed was practically true for another decade, and not until about the beginning of the present century or shortly after were definite courses established at the colleges for training investigators in plant pathology.

The establishment and development of these special courses in plant pathology by the American universities is now very general and forms one of the epochs in the development of plant pathology in America. The colleges, therefore, have supplied the trained men to fill the positions created in the progress of this branch of application of science to horticulture and agriculture.

The group mentioned above, led by Doctor Burrill, as representing the greatest concentration in 1888 of plant pathologists in America, consisted of only four scientific workers—F. L. Scribner, B. T. Galloway, Erwin F. Smith, and Effie A. Southworth. Professor Scribner had just resigned as the head of this section and Doctor Galloway was promoted to the leadership. The resignation of Pro-

fessor Scribner and the promotion of Doctor Galloway and others made a vacancy at the bottom of the list which brought the writer to join this little force. The success of Doctor Galloway in organizing and developing plant pathological work is so well known as scarcely to need comment here. His further success jointly with his associate, Albert F. Woods, in organizing the Bureau of Plant Industry in 1901, of which he became the first chief and Doctor Woods the assistant chief, constitutes one of the striking developments of agricultural research in this country, if not in the world. The evidence of the growth of this work is perhaps best presented in the number of scientific workers engaged. Newton D. Pierce was added to the staff in 1889, David G. Fairchild in 1890, Walter T. Swingle and Herbert J. Webber in 1891. The importance of the early discoveries in the cause and control of fruit diseases and of other plant diseases made by these pioneer investigators attracted wide attention. Every time a new treatment or new facts about a disease were worked out the fruit growers called for more. By 1893, when Fairchild resigned and Woods came to fill his place, there were nine scientific plant pathologists at Washington. By 1900 this number had reached about 20; by 1905 about 30; by 1910 about 40 scientific workers. In the early days by far the greater part of the pathological work was on fruit diseases and most of the increases were in fruit pathology work, but later the whole field of plant pathology was covered, less perhaps than half of this work was on fruit pathology prior to 1910. By 1920 there were 209 plant pathologists on the official pay rolls of the Bureau of Plant Industry engaged in research work, of which 182 were permanent appointments and 27 temporary; in addition, 9 were employed by the Federal Horticultural Board and 3 by the Insecticide and Fungicide Board, making a total of 221 plant pathologists of the various grades from junior pathologists to the full professional grade.[4] About 35 of these were engaged in fruit-disease work. By 1925, 200 professional plant pathologists were permanently employed, about 40 of whom were engaged in fruit-disease work. It should be pointed out that nearly half this force is now permanently stationed in the field at various points over the country and that 11 men are engaged in regulatory work. No attempt has been made to give the figures for the assistants below the professional grade. The laboratory and field assistants and the clerical force involved probably somewhat exceed in numbers the professional workers. In spite of this small army of investigators, and notwithstanding the progress which has been made in the 40 years of research work at the Department of Agriculture, the problems appear to come thicker than ever, and there is now more call for research work and investigation of fruit diseases, for example, than there are workers to do it.

Plant Pathology at the Experiment Stations and Universities

Notwithstanding the impetus given to the study of fruit diseases by the establishment of the section later made a division, devoted to this work in the Federal Department of Agriculture it should not be

[4] These figures were supplied from official records by H. E. Allanson, assistant to the chief of the Bureau of Plant Industry.

implied that no progress had been made before that time. The foundation had been laid and well perfected by the development of the science of botany both in Europe and America and to some extent elsewhere in the world. Furthermore, a very considerable amount of work was going on in this country in the study of the fungi and in plant physiological investigations and even in other lines of soils, crop rotation, fertilizers, plant nutrition, etc., all of which are helpful in pathological investigations. This work was done mostly at the colleges and universities, but already there had been established by several States special State experiment stations separate from the colleges and devoted to agricultural research work. Most of the attention of the early State experiment stations was given, however, to chemical research on crops, soils, and fertilizers, testing of varieties, crop rotations, and such matters. They were in fact largely modeled after the famous Rothamsted station in England. At only one of these, namely, the New York Agricultural Experiment Station at Geneva, was any pathological work being carried out. J. C. Arthur held the position of plant pathologist there from 1883 to 1885 and issued several reports mostly on pear blight. Farmers and fruit growers and those interested in the progress of agriculture evidently thought these stations were a good thing, and agitation was begun for the establishment of a Federal-aided experiment station in every State in the Union. Parker Earle in a president's annual address at the Mississippi Valley Horticultural Society, New Orleans, La., February, 1883, made a strong plea for the establishment of experiment stations.[5]

There was rather widespread agitation for more experiment stations at that time and subsequently. Several bills were introduced in Congress but none of them was enacted. On July 8 and 9, 1885, as the result of a circular invitation sent by Commissioner of Agriculture Norman J. Coleman, a meeting of delegates from agricultural colleges and experiment stations met in Washington for the purpose of promoting and discussing the "fundamental truths of agriculture, the question of agricultural experiment stations and the relation they should hold to this department, the best methods of bringing about Congressional action and of harmonizing the interests of the different State institutions and the Department of Agriculture." This conference, although not resulting in immediate action, undoubtedly had a very great effect. These two instances are cited merely as high points in the agitation which resulted finally in the Hatch Act of March 7, 1887, and its amendment of June 7, 1888, definitely establishing and financing the State experiment stations beginning July 1, 1888.

In Commissioner Coleman's address[6] to the convention held at Washington in July, 1885, he devoted one section to advocating the study of diseases of plants. The Hatch Act specifically states "that it shall be the duty and object of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals, the diseases to which they are severally subject, with the remedies for the same." Provision was thus made for

[5] Transactions of the Miss. Valley Hort. Soc., 1883, fourth annual meeting, New Orleans, La., February 21–24, 1883, p. 9.

[6] Proceedings of a Convention of Delegates from Agricultural Colleges and Experiment Stations. U. S. Dept. Agr. Special Rpt. No. 9, 1885, pp. 11–12.

eventually taking up the study of plant pathology in every State in the Union. In general, this provision was well carried out though not in all States from the start. There were not enough professionally trained plant pathologists to go around, in fact, if positions were created at the stations. The colleges and universities, however, especially those of the Middle Western States, began rapidly to supply the demand, and sooner or later every State experiment station and university had one or more active workers conducting original research in plant pathology.

Two outstanding things have happened favoring the development of research work in plant pathology since the general establishment of experiment stations by the Hatch Act. The Adams Act of March 16, 1906, provided additional funds for each experiment station "to be applied only to paying the necessary expenses of conducting original researches or experiments." In the administration of these additional funds many plant-disease projects and especially fruit-disease projects have been financed and developed. The other matter of importance is the increasing amount of State appropriations supplementing the Federal funds, thus greatly increasing the work of the experiment stations, and in this development plant pathology and fruit diseases have taken a large part.

Mention has already been made of the extension service and of the Smith-Lever Act. This activity which is educational in its primary aim has resulted in a considerable increase in the number of plant pathologists at work in this country. Extension service, which was initiated at Washington, is now almost wholly decentralized and handled in the States in connection with the State universities and experiment stations. Most States now have a well organized extension department distinct from the regular university work on the one hand and the experiment station work on the other. Some States have added materially to the Federal appropriation for this work and this line of activity has become a very important part of the application of plant pathology to agriculture and specifically to the control of fruit diseases. There are now extension courses at the State universities, extension lectures and demonstrations in the field, extension bulletins and circulars, news sheets and press service in the newspapers and other printed matter, and especially during the last five years dissemination of timely information and instructions by radio.

Mention has already been made of the regulatory work by the Federal Government on fungicides and insecticides under the insecticide act of 1910 and of Federal quarantine work under the Federal quarantine act of 1914. The Federal activities are limited to materials or plant pests entering this country from foreign sources or shipped interstate. But the States also have passed laws for the control of insecticides and fungicides and for the control of plant pests. While the Federal Government has control of the movement of materials or pests from foreign countries and between the States, so the States on the other hand have control of materials or pests which originate within their boundary. This principle is deeply rooted in our fundamental laws; in fact, is provided in the Constitution of the United States.

In some States the organization for handling the regulatory work is located in connection with the State university or experiment sta-

tion and in others it is located at the State capitol under the direction of the State department of agriculture. Whichever plan is followed, the fruit grower has at his service within the State a force of trained plant pathologists and an organization devoted to keeping his spraying materials and other insecticides and fungicides up to a high standard, to preventing fraud in the manufacture and sale of these materials, and also to protecting the industry from the introduction and movement of plant pests.

No attempt will be made here to assemble the data regarding the personnel of plant pathologists in the universities, experiment stations, and State departments of agriculture engaged in research, extension, and regulatory work. The increase in the number of plant pathologists, though somewhat more recent, has exceeded the number of workers engaged in the Federal service, and it is safe to say that the number of these workers in the States is probably more than double those in the Federal service.

General Effects of Fruit Diseases and Direct Losses

The reasons for the great development of plant pathological research in the United States during the last 40 years are mainly two: (1) The destructive and sometimes even disastrous effects of these plant diseases against a background of the very large size and the newness of the industry, and (2) the enterprise, progressiveness, and openmindedness of the American fruit grower and farmer, and those who represent him in Congress and the State legislatures. Some evidences of the latter are indicated in the historical sketch above. Some examples of the former may now be considered.

At every meeting of State and other horticultural societies, even of shippers and storage men, almost without exception the subject of loss by diseases forms a prominent part of the discussions.

Peach yellows in the early eighties swept the Delaware-Chesapeake peninsula and wiped out the orchards which were delivering to the markets in a favorable year 7,000,000 half-bushel baskets of peaches, and by the end of that decade drove eastern peach culture largely to the near-by Blue Ridge and Allegheny Mountains. In the Michigan peach belt certain districts were swept by the yellows until the peach was nearly exterminated there. On replanting, this was repeated, and sometimes it has occurred a third time. At present writing this disease is on the wane, no doubt in part owing to the application of control measures by eradication, but certainly in part due to unknown natural causes. (Figs. 202 and 203.) On the other hand, two other peach diseases have assumed prominence—the "little peach," which, like the yellows, has been checked somewhat in recent years, and the "phoney" disease, a very little known and as yet unclassified peach malady, but commercially serious, which is slowly spreading over the great peach belt of Georgia.

Pear blight has been the most serious scourge of the pear orchards of the eastern United States, wiping out the industry repeatedly in the large sections during nearly a century. Later, it continued its devastation in the Rocky Mountain orchards and finally in the first years of this century it swept the Bartlett pear orchards of Califor-

nia, exterminating about a quarter of them before it was brought under control. It is doubtless the greatest limiting factor in American pear culture and is scarcely less so at certain times on many varieties of apples. The disease has not only caused immense losses to the annual fruit crop and to the twigs and branches of the trees which limits their production, but shortens the life of the trees and often wrecks whole orchards or orchard districts. It practically wiped out the LeConte pear industry as well as other oriental pears in the Gulf States in the late eighties and early nineties. Researches on this disease and the life history of the bacteria causing it have developed a fairly satisfactory method of fighting it when conditions are not too seriously unfavorable and the variety of pear not too susceptible, and efforts are being made to breed resistant varieties of desirable qualities and resistant stocks to overcome the collar blight, body blight, and root blight form of the malady.

FIG. 202.—Typical peach-yellows shoots, including a cluster of shoots commonly called "witches'-broom".

The various fruit spots and leaf diseases of the apple have constituted one of the major problems in apple culture (figs. 204 to 210), especially in the eastern half of the United States but more or less both east and west. Apple scab in cool, humid districts or districts where there is a humid spring has been a most serious pest. Apple bitter-rot and blotch have been especially serious south of the southern boundary of Pennsylvania across the country from the Atlantic

to the Great Plains. Apple cedar rust has flared up within the last 15 years in many apple districts of the eastern half of the United States and has become a major disease demanding urgent action.

FIG. 203.—Method of controlling peach yellows by eradication. Many acres of peach orchards have been destroyed in the effort to eradicate this disease, which is now on the decline

Even the arid and semiarid orchards under irrigation have not been entirely free from fungous pests, for the apple powdery mildew has attacked them to the point where it had to be fought vigorously. Although these diseases have all been brought under control to a greater or less extent, they have all changed the rating of otherwise desirable varieties, and they have all taken a rather severe toll on the industry even after practical methods of fighting them have been developed. Furthermore, the cost of fighting these diseases is usually greater with any given orchardist than all taxes, Federal, State, and county. In general, the operation of controlling them constitutes one of the four or five major operations in the production of the fruit. Peach brown rot (fig. 211) and to a somewhat lesser extent the peach-scab fungus, as well as the leaf-curl fungus, occupy even more prominent positions in peach growing.

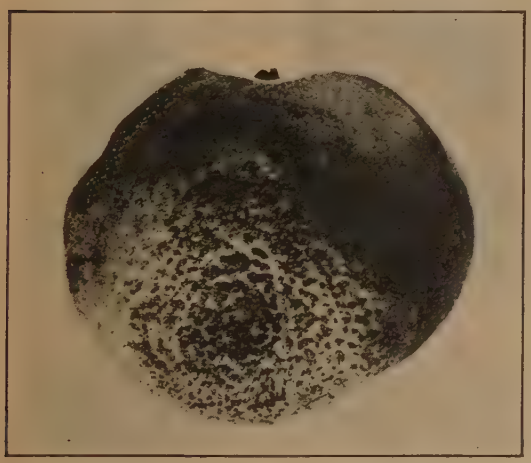


FIG. 204.—Cedar rust on an apple fruit

The brown-rot fungus is relatively insignificant or almost absent in the intermountain peach, plum, and cherry orchards, and nearly so in the Pacific coast orchards of California. Brown rot as a prune disease, occurs to some extent in California, but increasingly so in Washington and Oregon in spite of the dry summer weather. The reason for this is that there is sufficient rainfall and moisture in the spring for this fungus to attack the blossoms of prunes and cherries; and again, the fall rains begin in time for it to attack the ripening prune crop. The gumming fungus which attacks the peach

FIG. 205.—Cedar rust on the underside of apple leaves

FIG. 206.—The terminal twig growth of an apple branch, showing rosette. This is a physiological disease

and some other stone fruits finds the mild rainy winters of California entirely congenial. The spores of this fungus germinate during the late fall rains and seriously attack the twigs and the buds and reach their climax during the blossoming period in the spring just as the rains cease. It is fortunately rather easily controlled by a single dormant spray made in late November or early December. The peach leaf curl is also able to survive Pacific coast conditions since its spores germinate in the bud scales in early spring before the close of the winter rainy period. It also is controlled by a single dormant spray made at any time during the winter.

The black rot (fig. 212), mildew, and other fungous diseases of the grape have already been mentioned. These are native American diseases of our native wild grapes on which they live without usually producing any very serious condition. There is no more striking illustration, however, of the influence of plant diseases on horticulture than the effect of these diseases in the humid eastern half of the United States. These fungous diseases together with an insect pest, the phylloxera, have so far almost completely prevented the cultivation of the European vine with all its choice varieties of more than a thousand years of breeding and selection in the Old World. There is some question whether European grapes will fully stand the climate of the eastern United States even if these fungous and insects pests were not present. The hot, humid weather of late June and July, especially the alternating warm moist weather with dry sunny weather, presents a physiological condition to which the vinifera grapes are not adjusted. But the thing that happens in the Eastern States when the phylloxera root pest is avoided by grafting on American roots is that the black-rot fungus and the downy mildew take the vines in spite of persistent spraying with Bordeaux mixture. Even our native American grapes are severely attacked by these diseases with more or less increasing severity to the southward, but as a rule the pure natives are less seriously attacked than those which have been crossed with the European grape and carry a fraction of the European strain. Varieties like the Delaware, Niagara, and Brighton are more severely attacked than the Concord.

FIG. 207.—Apple bitter-rot, showing infections of individual fruits and a mummy resulting from the complete destruction of the fruit by the disease

West of the Rocky Mountains all this is changed. The uniformly dry, sunny summer climate furnishes exactly the conditions to which the vinifera grapes are physiologically adapted. In the main grape-growing districts of California, soil moisture is supplied by winter rainfall supplemented in certain sections by irrigation. In other districts irrigation is depended on primarily for soil moisture, but the entire growing season is rainless or nearly so. The black rot and downy mildew, the worst two fungous diseases of the Eastern States,

find conditions impossible or nearly so for their development. The grapes are not entirely free from fungous diseases, however, since the powdery mildew thrives under these special conditions.

The apple cedar rust, formerly called the orange rust of the apple, furnishes a striking example of the importance of plant diseases in fruit culture. It also is one of the best illustrations, with its background of pure science, of the help afforded in controlling a serious orchard pest. The fungus which causes this disease is native to the eastern half of the United States on the wild crab apples and

FIG. 208.—Apples infected with apple blotch

has its alternate generation on the common red cedar. (See figs. 204, 205, and 213.) Scientific research in mycology by Professors Farlow and Taxter at Harvard University, following discoveries on other species of rust in Europe, had given a pretty complete life history of this fungus and its relation to the two classes of host plants. The important facts are that this fungus lives part of its life, about 20 months, on the red cedar, that it comes into fruiting in the spring of the year, then matures its spores and wind-blown sporidia. These bodies can not live and multiply on the red cedar, but can attack the wild crab apples, or some related species, and these only. The

FIG. 209.—Apples infected with scab. The smaller specimen shows the deforming effect of this disease

FIG. 210.—Apple foliage infected with apple leaf spot (black rot)

sporidia from the red-cedar fungus, however, attack the young leaves and fruit of the crab apples and related apples, forming on them the orange-colored rust. The spores produced in early sum-

FIG. 211.—Peaches infected with brown rot. This disease also affects plums, prunes, and cherries

mer on the apples can not attack the apple but can only live and multiply by transferring to the red cedar. The fungus, therefore, having lived about four months for one growing season on the apple, must go back to the red cedar to reproduce and complete its two-year life cycle. It is necessary, therefore, for the development of this disease to have not only the rust fungus present, but to have the red cedars in reasonable proximity to the crab apples or their relatives. When the cultivated apples of Old World origin were brought to America the fungus was evidently not adjusted to this new host plant. For nearly 300 years after the settlement of Jamestown, the apple was cultivated in the presence of the cedar-rust fungus without serious trouble. Then it began mildly to attack the apple during the last few decades of the last century, becoming destructive

FIG. 212.—Black rot of the grape

only in a very few places and on some varieties little used in horticulture. In the first decade of the present century it began to develop as a serious orchard pest on Wealthy in the Middle States and since 1908 on the York Imperial in Virginia, West Virginia, and the Appalachian fruit district generally. It is now one of the major apple pests in fruit districts wherever the red cedars are abundant. Even before its attacks became serious, eradicating the red cedars was suggested as a method of preventing this disease, and when this fungus became abundant in the Appalachian fruit belt it was again urged and is now being put into practice quite widely but by no means completely in the vicinity of apple orchards in the Eastern States.

FIG. 213.—Cedar-rust galls on red cedar, beginning to exude spores

In the irrigated intermountain orchards and those of the Pacific Northwest the common fungus fruit spots and leaf blights of the eastern United States are absent or almost entirely so on the pear and apple. Essentially the same thing is true regarding the common fungous diseases of the peach, plum, cherry, and other stone fruits. The apple powdery mildew, only occasionally serious in the Eastern States, constitutes a rather prominent pest in this district, often requiring special spray treatment. There are two different kinds of apple anthracnose peculiar to this region that attack both the branches of apple trees and the mature fruit.

Aside from the two anthracnose diseases which make apple cankers in the Pacific Northwest, there are some half dozen other apple cankers attacking orchards mainly in the Eastern States. The European apple canker occurs in the extreme Northeast and extreme Northwest. The blister canker occurs more or less across the country east of the Rocky Mountains, mainly in apple orchards to the southward, but is most severe in the Mississippi Valley. The black rot and the bitter-rot fungus both make apple cankers in the Eastern States, the bitter-rot occurring mostly to the northward and the black rot occurring both North and South. Fungous root rots of several different species constitute a serious pest, especially in apple and peach orchards. Here again there are some half dozen different species of fungi involved and it should be pointed out that these root-rot fungi are able to attack trees in the desert, irrigated, and in the Pacific coast orchards nearly to the same extent as in the

humid regions, since the soil has to be supplied with moisture, either naturally or artificially, for the orchards to thrive. Dry air conditions, therefore, are not a complete protection against this type of pest.

The fungous diseases of citrus trees and fruits have long attracted attention in Florida. The orange, both the round orange and the tangerine, the grapefruit, the lime, and the lemon have a long list of fungous pests, some of which are very serious. Citrus scab was introduced into Florida from the Old World about 1885 or shortly before and constitutes one of the major pests of citrus fruits in Florida and other Gulf Coast States (fig. 214). Citrus melanose is regarded as an even more important fungous disease than the scab fungus, and these two diseases require special spraying schedules for their control. Some of the most serious economic diseases of citrus attack the fruits during the long period while they hang on the trees in winter or while they are in transit and on the market. The melanose fungus, though serious as a young fruit and foliage disease, is still more serious as producing a stem-end rot, and in this destructive work it is joined by another parasitic fungus, and these two stem-end rots constitute perhaps the most serious pests of this subtropical fruit industry. In California there is another fruit rot called brown rot which attacks the lemon and has made no end of trouble. These truly parasitic rots of oranges and lemons are aided by another rot fungus, a common blue mold, which comes in and exaggerates the injuries but also further attacks fruits whose skin has been punctured or which has been otherwise roughly handled or delayed in transit. The citrus canker introduced in comparatively recent years (fig. 215) has never been allowed to become very destructive, but it resulted in one of the most energetic fights in the history of American fruit diseases.

FIG. 214.—Citrus scab on young citrus fruits

Even among the bush fruits, the blackberries and raspberries, and strawberries we find that each group has a special set of fungous diseases of the fruit, foliage, and canes which constitutes a continual source of annoyance and loss to the grower.

As already indicated in the case of the orange the troubles do not cease after the fruit is picked. There is a large number of fungi, some of which get their start on the fruit while it is still growing or after it approaches maturity; others of which develop wholly after

picking, but all of which attack the fruit while it is in the packages, in storage, in transit, or on the market. One of the recent features of progress in plant pathology has resulted in the study of these fruit rots and causes of spoilage in transit and storage and on the market. Some 30 fungi are found in this country attacking the apple alone while on the market. One of the interesting things brought out by this line of research is that all ordinary fruits, such as apples, pears, peaches, etc., are virtually alive after they are picked. The decay and spoilage, therefore, are not to be looked upon in the same light as the decay of meats or other prepared or cooked food products, but that the decay and spoilage of fresh fruits is the problem of keeping living material under living conditions. This is brought out rather strikingly in the case of the physiological or nonparasitic diseases like apple scald, in which the disease is produced by the emanations of the apples themselves in tightly closed packages. The remedy which has been found for this trouble, namely, wrapping the apples in oiled paper which absorbs the poisonous gases, still further illustrates the fact that these fruits are living objects. Ordinarily, a dead apple is a brown rotten apple and a dead spot on the apple is a brown discolored decayed spot.

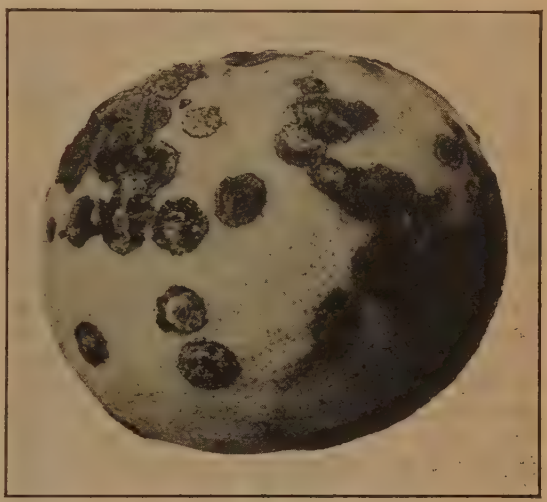


FIG. 215.—Citrus canker on grapefruit

Physiological or Environmental Diseases

As indicated in the foregoing pages, parasites are not the only causes of the diseases of fruits and other plants. Our fruit and nut trees and vines grown in the open are subject to weather conditions not only during the growing season but throughout the winter. As our orchard fruits blossom and in most cases are dependent on insects for pollination during the uncertain spring weather and as fruits and fruiting plants are living things, they are keenly subject to their surrounding climatic and weather conditions. The main environmental factors influencing the diseases of fruits may be classified as follows: Weather conditions, such as temperature, moisture, and light, and chemical conditions.

For each of these factors there may be an optimum condition at which trees and plants do best; there may be adverse conditions beyond the maximum or minimum at which they are killed or near which they are permanently injured, prevented from fruiting, or ruined commercially. Conditions that are optimum for a tree or

other plant, or adverse, as the case may be, at one time during the season, or during the life of the plant, may not be equally favorable or unfavorable at some other time or at another period in the life of the plant. The study of these subjects in relation to plant growth is largely covered by the science of plant physiology and its special branch, ecology. The study of the adaption of the various species and varieties of fruits to these varying conditions forms an important part of horticulture. When critically unfavorable conditions are approached so that the plant is either killed, poisoned, stunted, injured, or prevented from fruiting, the injured plant and the causes which produced it become the subject of study by the plant pathologist. These various factors not only produce disease directly, but they also indirectly bring about susceptibility, resistance, or immunity in varying degree to parasites. They have, of course, direct effects on the parasites themselves just as they do on the host plants.

In a general article of this character it is not possible to discuss this extensive and complicated subject at all completely. Only a few examples may be given to illustrate their direct effect in producing disease or their secondary effect in favoring parasites.

Temperature.—Everyone knows that temperature is all-important to the life and health of a fruit tree and scarcely less so to the condition of the fruit after it is picked, since fruits are made up of living cells. Winter injury to fruit trees and vines constitutes one of the great hazards of fruit growing. It occurs in almost endless varieties of types such as the killing of dormant buds of peaches and other fruits, the killing of the trunks and bodies of the trees, injury to the collars at the ground line, and the killing of the roots. An important thing to note is that winter injury is not always a matter merely of low temperature, though it occurs more or less habitually along the extreme northern border of the culture of each fruit. On the other hand, it is usually due to a combination of warm weather, perhaps abnormally warm weather, and a cold spell which may even be very moderate. For this reason, winter injury to peaches, or even to the trunks of the trees, is very common in the Carolinas and Georgia, and winter injury to the trunks of young cultivated pecan trees has occurred repeatedly in southern Georgia and adjacent Gulf coast sections. The cultivated varieties of sweet cherry are usually very hardy in western New York, southern Canada, and Michigan, but the trunks of young trees are very commonly injured in the vicinity of Washington, D. C. In general, the northern limit of the cultivation of any fruit is determined by the minimum temperature which it can withstand. Along the northern limit of its range the tree is frozen to death or severely injured by occasional extremely cold spells.

The upper surface of the large branches of fruit trees, especially apples and peaches, when exposed by bending over with a load of fruit or by overpruning of the center of the tree, are sometimes so heated by the direct rays of the noonday sun in June and July that the tissues are killed clear to the wood. The bark and cambium are heated beyond the maximum temperature which they can endure. They die either rapidly or slowly, often unnoticed, but a year or two afterwards a great dead strip is found on the upper surfaces of the limbs. The slightest protection by the foliage due to the

position of some of the branches can often be observed to be a complete preventive of this trouble. This is the true summer sun scald. An entirely different combination which has been termed winter sun scald is due to very low temperatures, usually considerably below zero, followed by bright, clear, intense sunny weather. This occurs invariably on the southwest sides of the trunks of the tree, only occasionally reaching up to nearly vertical branches and is considered to be produced by the horizontal rays of the afternoon sun, around 3 o'clock, rapidly warming up frozen trees. This type of injury is widely distributed, but is most common in our midwestern and Rocky Mountain States where occasionally thousands of trees are injured in exactly the same position. It is sometimes complicated with straight winterkilling from low minimum temperatures, but winterkilling of the trunks occurs more or less indefinitely, or all around the tree, or in the heartwood from the center outward.

Apples, pears, and occasionally other fruits are sometimes heated by the sun in exposed positions on the tree to the extent that a circular area is actually cooked and a large round dead spot results. Around the margin of such an area where the tissues are injured but not killed and where growth is slightly checked the color in some cases is higher than normal. In others, the red coloration is delayed. This sunburn of fruit is not very common. It usually occurs only at temperatures approaching or above 100° F. in the shade, but the temperatures in the sun where this effect is produced go to about 125° or 130°. The writer has observed it several times on tomatoes and muskmelons in the Eastern States where the air temperatures reached 100° or a little above. There is little doubt that the stunting effect of excessive heat is often produced without the actual deadening or browning of the fruits. This injury by maximum temperatures is not limited wholly to fruits directly exposed to the intense rays of the sun. Apples are often so heated, even on the shaded inside portions of the tree that they develop water-soaked and eventually brownish areas in the flesh and sometimes premature breakdown of the fruit in storage. The foliage also may be checked in a somewhat similar manner. Abnormally hot spells often injure the foliage in varying degrees, causing the leaves to color slightly, to die at the tips, and margins, and to drop prematurely. This injury may be associated with insect injury and is distinctly more severe when the leaves have been subjected to too much moisture during the period immediately previous to the exposure to heat.

Moisture.—Fruits as well as other plants require just the right amount of moisture to do their best. As a rule, the various fruits and fruit trees are more exacting as to their requirements for soil moisture at the roots than for the moisture surrounding the top of the plant or tree.

One of the trying conditions in humid America which often causes plants, even those fairly well adapted, to suffer is a rainy, humid, cloudy period, such as sometimes occurs in June or July during the period of most active growth, followed by a very dry period. These conditions are especially trying to young, newly formed foliage which grows during the moist period with loose tissues and wide open breathing pores adjusted to the limit to the humid conditions and is then subjected for another period of perhaps two weeks or more

to very dry air. Tipburn and margin scald have been observed frequently to be a direct result of such conditions. Sickening and yellowing of the leaves and permature dropping of the foliage sometimes long after the crucial period are often traced directly to these conditions. The vinifera grape is a fine example of a plant which apparently can not withstand such intense changes, though in case of this fruit as well as many others the direct physiological effect is often complicated by the presence of fungous diseases which seize the opportunity of the moist weather to infect the plant to an abnormal degree.

An intensely rainy spell following an intensely dry spell is scarcely less serious in many cases, especially to introduced European fruits. It often causes the fruits to crack open from a trouble called rain cracking. Japanese plums may sometimes crack in many different directions over the surface so that the fruit is utterly destroyed. Apples often crack at the calyx and at the stem end and sometimes burst open completely from the stem to the calyx. The checking of the growth of the outer layers of the fruit followed by sudden increase in growth and expansion of the interior by moisture is easily seen to be the cause of such trouble.

Light.—Although fruit trees are not as sensitive to maximum intensities of sunlight as certain ferns or mosses for instance, nevertheless, it is a factor which continually has to be kept in mind by the plant pathologist. It is a question whether the powdery mildew of the peach and apple, which are well known to be more severe in the drier sunny regions of the United States, are not influenced as much by too great intensity of light as by aridity. Another example of the effect of light on a plant in health and disease is the gooseberry. This plant produces larger and healthier foliage and larger fruit crops in partial shade.

Chemical conditions.—Although the fruit tree gets its carbon from the atmosphere taken in through the breathing pores of the leaves and separated from carbon dioxide through the energy of the sunlight, and though it gets its oxygen from the atmosphere, these are constant factors which do not ordinarily enter into the question of health and disease except in stored fruits, vegetables, plants, or cuttings which are smothered or otherwise abnormally treated in storage. Fruit trees get their minerals and nitrogen compounds as well as their water almost wholly from the soil, and these constituents occur in varying quantities and proportions and have a profound effect on the plant in health and disease. It is true that fruit trees may be poisoned by gases emanating from factories, chemical works, smelters, etc., and perhaps in some rare cases from volcanic gases originating naturally. It is also true that in stored products chemical injury may result from various sources, and plants may be asphyxiated from lack of oxygen. Furthermore, poisons produced within the tissues of the plants may produce breakdowns, or, emanating from the surface, may produce injury to the skin. A striking example of this is the disease known as apple scald on stored apples and a rather remarkable new type of remedy by absorbing these poisonous gases through the use of oiled wraps.

The chemical constituents of the soil and the plant foods which they supply to the growing fruit tree or vine, the presence or absence

of suitable constituents and the proportion of these various elements and compounds—in other words, the balance of the plant foods exert a profound effect on plant diseases. An example of this is nitrogen starvation. Even though supplied fairly well with all the other chemical elements necessary to growth, and with no injurious materials in abnormal concentration, a plant without sufficient nitrogen grows sickly and pale and yellow. A peach tree suffering from this type of minimum chemical effect, when looked at from a distance, may readily be mistaken for a case of peach yellows. One of the best evidences of nitrogen starvation is often obtained by making an application of nitrate of soda around such a tree, following which in a week or two perhaps combined with cultivation, the tree will be found well on the way to recovery. The leaves will have begun to turn dark green, and if not too greatly checked, new growth with new foliage may have begun to push out. Potash hunger, so well worked up on cotton and truck crops like potatoes, probably also occurs on fruit trees in a less evident manner, mostly on lighter soils where the trees are dependent on artificial fertilizers. The root system of most fruit trees, reaching far into the subsoil, enables them to get their potash probably more readily than shallow-rooted annual plants. The effect of mineral constituents of the soil on growing fruit trees, important as it may be, is not often a conspicuous cause of definite diseases in the humid regions excepting in calcareous areas, or where lime is applied artificially to plants which can not tolerate any slight excess of lime in the soil. Oranges in Florida are thrown into a sudden state of chlorosis or mottle leaf when even an ordinary dressing of lime is applied to these light sandy soils. The pecan will not grow on marl or limestone soils where all the other conditions are reasonably favorable. Organic matter or humus-forming material of any kind, such as stable manure, straw, leaves, and cover crops, corrects the effects of too much lime and enables the trees to grow out of the difficulty.

There is a group of chlorotic diseases apparently associated with lime, occasionally occurring on a great variety of plants in the humid eastern United States but very common in the arid portion of the country. The western peach rosette, the apple rosette and chlorosis, frenching of the grape and similar symptoms on many kinds of fruit trees and other plants occur very commonly west of the 100th meridian which passes through the central portion of the Dakotas, Nebraska, western Kansas, Oklahoma, and Texas.

The apple orchards of the Wenatchee and Yakima Valleys were at one time severely affected with chlorosis and rosette. The growing of alfalfa in these irrigated orchards, and allowing the crop to remain in the orchard year after year, has proved to be an almost complete remedy for this condition. It takes three to four years to get the full effect of the treatment. These western physiological diseases are obviously due to excesses of certain materials in the soil; these accumulate there because of a scanty rainfall and the lack of a sufficiently free downward movement of the irrigation water to wash them away. These diseases are intensified by arid conditions and corrected by moisture and humus-forming materials.

Actual alkali injury may be regarded as an extreme and certainly a different type from these physiological poisons. It may also

represent a striking example of too great a maximum of a chemical constituent in the soil, which results in plant injury and death. These alkalis are mainly sodium carbonate, sodium chloride, and strange to say, potassium nitrate, a most valuable fertilizer and plant food when in proper concentration in the soil. Sodium salts often enter into the complex composition of injurious alkalis, and lime and magnesium compounds which are so often beneficial to soils in the humid regions also form a part of them. At any rate, it is safe to say that a large number of physiological diseases of several different types, which occur mainly in the arid regions and about many of which very little is as yet known, are due to an excess or to unbalanced quantities of chemical constituents in the soil. It has even been stated that in the Old World the accumulation of these conditions under irrigation has been the cause of the abandoning of entire civilizations. It is not too much to hope that scientific research in plant pathology and physiology, together with the study of the chemistry, biology, and physics of the soil, and with the development of engineering in the way of water supply, may develop methods of meeting these difficulties in the future. One thing is certain, that as far as fruit culture is concerned, certain districts in the irrigated regions of the West have already been abandoned on account of the presence of diseases of this type.

The Origin of American Fruit Diseases and the Origin of Fruits as Related to Their Diseases

The cultivated fruits and nuts of the United States are of two sources of origin as shown on page 112: (1) Those derived from native wild fruits and nuts of North America and to some extent of South America, and (2) those introduced from the Old World and having their origin there. Since the fungous and bacterial parasites producing disease have also had their origin in both the Old World and the New there are four possible combinations of fungous parasites and their hosts in the American fruit-disease problems:

(1) Native American parasites on fruits of American origin.

(2) Native American parasites on cultivated fruits of Old World origin.

(3) Old World parasites on Old World fruits.

(4) Introduced parasites on fruits of American origin.

From lack of knowledge it is not quite possible to classify definitely all of the diseases of the American fruits into these four groups, some of the fungous parasites having wider distribution than any one species or perhaps any one genus of their host plants. In some cases the fungi are identical both in the Old World and in the New and merely transfer from one related species or genus to another related species or genus in the New World. An example of this sort is the commoner of two blackberry orange rusts. This rust extends around the world in the North Temperate Zone and changes from one species of host to another in its great world-encircling span. The species of blackberries and raspberries are not the same even on the two sides of the American continent. It is not always an easy problem to determine the exact native origin of a fungous parasite of a cultivated fruit or of other crop, especially in the case of intro-

duced plants. In many cases, perhaps in the majority of instances, the evidence of the foreign or native origin may be rather clear or even beyond all dispute. In case of newly introduced parasites of the last 40 or 50 years, during which the fungi have been extensively studied and collected, the evidence is often definite. On the other hand, in case of certain fruits and their diseases introduced in early Colonial days, 150 years ago or more, and now found widely distributed or even on native related host plants, it is not so easy to be certain of their introduction from foreign sources. A number of these parasites were unknown in this country until extensive plantings began coming from the Orient, and then as they began to appear they were rather easily traced to their sources across the Pacific. On the other hand, the European parasites of fruit trees, plants, vines, etc., coming in many years ago have a more obscure origin. There is also a group of virus diseases which are contagious and transmissible, but with which there are no bacterial or fungous parasites associated which can be seen under the microscope and classified, and these present a still more difficult problem as to origin. The physiological diseases can be dismissed from this discussion, since they are not dependent on the presence of any parasite or contagious, infectious material, but solely on environmental conditions which may occur anywhere in the world.

Native American Diseases on Fruits of Native Origin

The black-rot and the downy mildew diseases of native American grapes form a striking example of this type of disease. The fungi causing these two diseases are native on the wild grapes of the eastern United States. As pointed out elsewhere (p. 467), the vinifera grape is not successfully grown in the humid portion of the United States. These two fungi are factors in the culture of this fruit. On account of repeated failure of the vinifera grapes, eastern grape culture in the United States had to be based on the development of horticultural varieties of native origin. The Catawba and the Concord are of this class, and shortly after they were brought into cultivation they were planted extensively and became a feature of eastern American grape growing. These are supposed to be of pure native origin. Later, other varieties such as the Delaware, Niagara, Moore Early, Brighton, and others were produced and took their place with the Concord and Catawba. This latter group, however, was partly hybridized with the vinifera or European grape, and while in general the varieties are fairly resistant to these fungous diseases as compared to the pure vinifera they are less resistant than the pure natives, and for this reason they are more difficult to grow and more difficult to protect by spraying and otherwise from fungous diseases.

Pecan scab and probably all the other fungous diseases of this nut also present an example of this class. Pecan scab was first described on the hickory from southern Illinois, on which it rarely occurs. Later it was found on the pecan, but occurs rather rarely on this host on the wild trees in nature. When the pecan became extensively cultivated, however, and especially when the varieties or seedlings are moved from western semiarid sections of its range to the

more humid eastern sections along the Gulf coast, it has spread until it has become a first-rank disease of this extensively planted nut tree. Many varieties are commercially resistant to this fungous parasite but certain varieties otherwise desirable are so susceptible that they are being abandoned in cultivation for this reason alone.

The native blackberry and raspberry of the eastern United States have a number of fungous diseases, such as the two orange rusts, anthracnose, mildew, etc., which are caused by native parasites and which commonly occur on the wild brambles of several different species.

Native American Diseases on Cultivated European or Old World Fruits

As above indicated, the native black-rot and downy mildew parasites of eastern grapes have severely attacked the European grape in America. These two fungous diseases, aided by the insect pest *Phylloxera*, doubtless caused the failures of the early attempts to grow vinifera grapes in the Eastern States. Under the arid conditions of the Pacific coast and adjacent arid and semiarid districts mostly west of the Rocky Mountains, the European grape thrives, but these two fungi have proved sufficient to suppress or very greatly retard the culture of this fruit even when grafted on resistant roots in humid America. It is somewhat doubtful whether these fungi alone are accountable for the failure of the European grape in the eastern United States. Climatic conditions including humid, rainy, hot weather at irregular intervals from about the 1st to the 15th of June and alternating through the summer with fairly dry sunny weather, appear to present an almost impossible environment for the foliage of this plant.

Pear blight on the apple and pear and to some extent on the quince and related pomaceous fruits presents a striking example of the vicious attacks of a native parasite on cultivated Old World fruits. Our pears were first of European origin, and most of the high-quality varieties acceptable to the American taste are either European varieties imported as such, like the Bartlett, Anjou, Bosc, etc., or American seedlings grown in this country from the same species, such as the Seckel, Clapp Favorite, and others. Later in the history of American pear culture the oriental pear was introduced from China and Japan. These were, as a rule, extremely vigorous and productive but bore fruits of low quality which were not acceptable to the American taste and were used to a limited extent only for cooking. Hybridized with the high-quality European pear, however, the resulting forms retained and even increased the vegetative vigor and productiveness of the oriental parent with considerable improvement in the dessert quality of the fruit as in the case of the Le Conte and the Kieffer. Thousands of acres of these hybrid orientals have been planted and grown, especially in the South, but so far the fruit is of such low dessert quality even with its improvement over the oriental pears that it is not very generally acceptable and, therefore, not very profitable to the grower. These orientals and their hybrids are, as a general rule, more resistant to the blight than the pure European pear. The Kieffer especially is of this type. With a reasonable amount of

care in cutting out the blight and practicing moderation in cultural methods, pruning, cultivation, fertilization, etc., they can be grown commercially on a large scale. The Le Conte pear industry which became very extensive in the Gulf Coast States was practically wiped out before satisfactory methods of control were developed. In general, pear blight has exerted a profound influence on pear culture in the eastern United States and has been scarcely less serious in its attacks on the orchards of Colorado, Utah, and the Rocky Mountain region generally, as well as in California, Oregon, and Washington. Its attacks are more serious in the South, but they are greatly reduced in a cooler and more northern region. During certain outbreaks it has been scarcely less serious on certain varieties of apples like the Yellow Transparent and some of the other Russian sorts in both the Eastern States and in California; also with such fine varieties as Esopus Spitzenburg, Jonathan, Maiden Blush, and others.

The worst peach disease from the standpoint of its destructiveness in the orchards of the eastern United States has been the well-known peach yellows. (See fig. 202.) No parasite has ever been discovered, but this disease is of a contagious nature and has a definite geographical range which has extended to the southward and enlarged in a rather definite, known manner. It acts like a parasitic disease. In some cases it behaves like a contagious virus disease, yet in others the inability to transfer it by injection of juices or by any other method except actual budding tends to keep it out of this group. Since it is not transferred in nature by budding but by some other method, this is an argument for classing it with the virus diseases. It has wiped out commercial peach culture successively in the Delaware-Chesapeake region, the eastern Appalachian Mountains, especially the Blue Ridge section of Virginia, Maryland, and southern Pennsylvania, and the mountains of Pennsylvania, West Virginia, and Virginia, whole districts of the Michigan peach belt and peach sections of New York, and the Piedmont region of Maryland and Virginia before its inroads were stopped by the destruction of the orchards. In the first few years of this century, it apparently wiped out almost completely the seedling orchards of the southern Appalachian Mountains of North Carolina, southwest Virginia and eastern Tennessee so that the supply of peach seed for stocks from that region was almost obliterated. This disease is now known to be controllable by thorough eradication; that is, by pulling out the diseased trees promptly, before they have opportunity to spread the infection. Orchards are now being developed in old districts where they have been destroyed not once, but perhaps a second or a third time. Peach yellows appears to be of native origin, as it is unknown elsewhere in the world and unknown in America outside of its definite range. The native wild host plants of this disease, however, are still unknown. It attacks the Japanese plum, the apricot, and perhaps some other closely related peachlike stone fruits. But it is not known to attack the domestic or European plum, or several species of native American plums and other native American stone fruits which might be suspected of being its host.

Old World Diseases on Old World Fruits

Citrus scab and citrus canker are comparatively newly introduced. The one, introduced probably in the early eighties, and the other, citrus canker, rather definitely introduced about 15 years ago, are both native in the Orient. Although they may have come to us from Japan they probably were introduced into Japan from the mainland of southeast Asia. It is a rather interesting thing to note that these diseases are, as a rule, not very serious in their country of native origin. Like many other pests, or even like many other crop plants, they thrive in the new environment more vigorously than where native. In their native home the parasites are adjusted to their host plants so that they get along fairly well together. But in the new environment, especially under new climatic conditions—in this case humid conditions—with extensive planting over large areas which supply continuity of host plant, the opportunity for the diseases to spread is provided. Their development has gone on until they are of great economic importance. Apple scab, apple bitter-rot, in fact most of the fungous diseases of the apple, pear, and peach appear to be natives of the Old World brought over with these plants.

Introduced Old World Diseases on Native American Fruits

There is apparently no more dangerous type of disease than that imported from foreign countries which finds a related host plant native to America even more conducive to its development and spread than its original host. The original hosts naturally are adjusted to their parasites. In their native home this adjustment may be assumed to be fairly complete, but under new conditions new possibilities arise. Under certain new conditions they may not attack at all: this is one of the great factors of fruit culture in our arid and semiarid districts. The dry soils and dry air are not conducive to the spread of most bacterial and fungous parasites. On the other hand, it is not safe to trust these parasites because they may, like pear blight, or like peach leaf curl or the gumming fungous, both European pests, thrive in the rainy winter of the Pacific coast. The chestnut-bark disease, which is, of course, more of a forest than a cultivated-nut disease on account of the fact that most of the trees exist in a wild state, forms one of the most striking examples of the possibility of destruction to American fruits and nuts by an introduced foreign parasite. This disease, which came from the interior of north temperate China and there attacks a medium-sized native chestnut species in a rather mild manner, has now all but destroyed the American sweet chestnut both in the forests and when grown as a cultivated nut. It has also destroyed our cultivated European chestnuts, leaving only a few Japanese varieties and possibly other hybrids severely attacked but able to stand up to some extent against its vicious parasitism. It should be noted that this same principle applies to other parts of the world just as definitely as to America. The American pear blight in some unknown way has been introduced in recent years into New Zealand and has begun its destructive attacks on the pear and apple in that far-off country. The black-rot and mildew of the grape, native American diseases imported into France, are there destructive to the European vine.

Successful Methods for Disease Control

Scientific research is now a great factor in helping the fruit grower solve his problems of the cause and control of fruit diseases. One of the most striking features in the development of American agriculture as a whole has been the application of the sciences in meeting the problems of increased or more efficient production, of modifying or refining and improving old methods, and of introducing entirely new ones. The early printed reports of meetings of fruit growers in this country often contain rather frantic appeals for help in the control of disastrous or injurious diseases. Naturally, before the introduction of the science of plant pathology these diseases formed serious puzzles to the growers. In the absence of exact knowledge or of definite scientific experimental methods all sorts of theories and conjectures were made as to the cause of disease, and all sorts of empirical methods for their control were tried or advocated. Some of these useless or quack methods of control continue to come up in various parts of the country, but at present they are well in the background. On the other hand, many exact observations and even some perfectly correct methods of disease control, at least as far as they went, were developed empirically before the application of science. For example, the selection of resistant varieties of pears and the partial control of pear blight by reducing the vigor of the trees through withholding manures, cultivation, etc., are still just as sound to-day as when advocated 60 or 100 years ago. Selection of resistant varieties of strawberries for leaf-spot diseases, the selection of apples resistant to scab, and of stone fruits resistant to brown rot are still perfectly good methods. A more striking example is the control of peach yellows by completely eradicating the diseased trees, which was advocated by a group of Michigan peach growers at South Haven. This method to-day is the standard and the only method of controlling this disease. It is true that these early empirical methods had to be subjected to modern experimental tests and had to be confirmed by scientific research and experimentation before their full value was accurately determined and before they could be put into the modern practice of disease control. These older empirical methods have been greatly developed and perfected by the application of research based on scientific botanical knowledge. On the other hand the greatest triumphs in the control of plant diseases so far have developed along the lines of dusting and spraying with fungicides, disinfection with germicides and fungicides, and other similar methods based on scientific research and on the modern knowledge of the nature and behavior of bacteria and fungi.

The successful control of diseases as now practiced comprise many different methods. Some diseases are controlled by a single method but usually a combination of two or more of these is available to the orchardist in fighting his pests. These methods are as follows:

(1) Spraying or dusting with fungicides.
(2) Disinfection by means of germicides and fungicides.
(3) Eradication.
(4) Quarantine.
(5) Breeding and selecting resistant or immune varieties.
(6) Cultural handling and storage.

All of the above are used by the American fruit industry in combating and controlling fruit diseases, sometimes singly and sometimes with two or more methods of attack combined. Other special control measures such as inoculation or injection, medication, etc., have been tried and have so uniformly yielded negative results that they are at present in bad repute among plant pathologists. The use of ultra-violet rays and electrical control, though somewhat promising, may be regarded as in the early experimental stages.

A few striking examples of disease control by the various means may be cited: Spraying with fungicides is undoubtedly the most widely used and most successful method of preventing and controlling the fungous diseases of plants. It is almost a failure with the bacterial diseases. Peach leaf curl, the California gumming fungus of the peach and other stone fruits, and certain apple cankers are controlled by dormant spraying. With these and a few other minor exceptions the greater part of spraying with a fungicide is done when the tree is in active growth. Most of the ordinary leaf and fruit spots of cultivated fruits in America (see figs. 204 to 210) have been brought under control by spraying. Bordeaux mixture was the first great successful fungicide, although lime-sulphur solution and other sulphur compounds are in many cases more suitable and now more generally used on fruit. In the course of extensive experimentation, rather definite spray schedules and strengths of material have been worked out for the different diseases or combination of diseases on the different fruit crops and for different sections of the country. The black rot, downy mildew, and other fungous diseases of the grape are successfully controlled by Bordeaux mixture spraying. Bitter-rot and blotch of the apple are controlled with this material properly applied. Apple and pear scab, pear-leaf blight, and most of the fruit spots and rots of the fruit and foliage of the apple are controlled by spraying with dilute lime-sulphur solution for the early sprays and Bordeaux mixture for the later ones. Peach brown rot and peach scab are controlled by spraying with the self-boiled lime-sulphur mixture or various substitutes for the same; and dusting with finely powdered lime and sulphur mixtures gives excellent control of the peach-scab fungus and is fairly satisfactory against brown rot. Arsenate of lead and other arsenicals are usually combined with the fungicides in the standard spray treatments. Control of most fruit diseases requires a combined schedule directed against a group of fungous diseases and insect pests attacking the crop in that locality.

Disinfection with germicides and fungicides, though a prominent method in the control of the grain smuts, potato scab, and other potato diseases, is only occasionally used in fruit diseases. These disinfectants are applied both in dilute liquid form and by fumigation with gases. Although not a dominant method of disease control with fruits, disinfection methods are used in several different ways. In the eradication of pear blight and of apple cankers a 1-to-1,000 solution of corrosive sublimate is used to disinfect the tools and as a surface disinfectant of the wounds. This disinfectant is also used in citrus-canker work to sterilize the implements, shoes, clothing, and hands of the inspectors. The mixture of one-fourth to one-third creosote oil with two-thirds to three-fourths ordinary coal tar is used

for painting the wound after pear blight eradication. The same wound paint is extensively used in painting pruning wounds and in various types of tree surgery on fruit trees.

Formaldehyde solution, 1 pint to 30 gallons of water, has been used in the control of crown gall (fig. 216), as a surface disinfectant for apple seedling stocks, scions, and the tools and benches used in grafting. A new method of using an organic mercury compound has just been developed for treating the seedling roots, scions, and bench grafts, which is much more effective against this disease. In the introduction of new plants dipping for a few minutes in the above-mentioned formaldehyde solution is frequently practiced with more or less certainty of success. In propagating plants the soil is sometimes saturated with this and other disinfectant solutions, heat and hot water being also used for soil sterilization in special cases of propagating fruit nursery stock. Disinfectants are also used in the washing water for citrus fruits in the packing houses; and fruit-storage houses also utilize this method of sterilization as a protection against fungous rots.

FIG. 216.—Crown gall on root of an apple tree

Eradication Methods

Eradication plays a prominent part in the control of many fruit diseases, especially certain diseases not readily controllable by spraying or other similar methods. As a rule American fruit growers do not take so readily to this procedure as to the use of the spray pump or some of the other methods given below; but in certain cases where it is effective it is by far the most economical way of controlling diseases. It may not appeal to the fruit grower as a satisfactory way of controlling peach yellows to have to cut down a number of fine trees, and yet peach yellows is much cheaper to control by eradicatiton when properly carried out than is the peach brown rot by spraying, even counting in the loss of the trees.

There are three distinct types of eradication: (1) That in which it is necessary to root out and destroy the entire tree, no matter how slightly affected, as in the case of peach yellows, little peach, and crown gall in nursery stock; (2) that in which the diseased

part only need be removed, usually not involving the loss of the tree; for example, pear blight in pears and apples, apple and pear canker, black knot of the plum and cherry, and fungous wood rots; and (3) eradication of the alternate host, the best example of which is the destroying of the red cedars for the control of the cedar rust or orange rust of the apple.

Eradication when carried to the extreme limit results in the extermination of the fungous or bacterial parasite. This is of great importance in regard to newly introduced organisms to any district or country. It has been successfully carried out locally in a few cases, but as yet in no instance has a bacterial or fungous parasite been completely exterminated in any large territory or country as has been done with certain human and animal diseases. The remarkable extent to which the extermination of the citrus-canker bacteria which produces the citrus canker disease in our Southern States is being carried on is therefore a matter of extreme interest. This germ, rather recently introduced from the Orient, is being controlled by eradication, and a vigorous attempt is being made, especially in Florida, to completely exterminate this pest. Success in this specific case will be historic and will greatly stimulate further action along this line.

Quarantines

For years this country allowed various pests from all parts of the world to be introduced on the nursery stock, cuttings, scions, ets., imported from various countries. The result is that we have imported along with our fruit introductions a large number of disease-producing organisms from various parts of the world and have transplanted them with the fruits on which they grow. Some of them find our native fruits and nuts and our local conditions even more congenial for their spread than those supplied in their native environment. In a similar way some of our parasites, like the vine disease-producing fungi, have been sent to the Old World. A serious disaster to the chestnut of the eastern United States, both cultivated and wild, resulted from the introduction of the chestnut-bark disease from China. The introduction of the citrus-canker germ into Florida and other Gulf Coast States from the same source, the introduction of the white-pine blister rust from Europe, and also a number of serious insect pests brought forward emphatically the necessity for a quarantine. It goes without saying that it is vastly better when possible or practicable to exclude these foreign pests rather than to wage war against them after they are introduced into the American orchards. The enactment of the Federal quarantine act of 1912 put this method of fighting orchard diseases and other pests into active operation. Previous to that time this method was only used locally in a few States, notably California.

Notwithstanding the difficulties, both theoretical and practical, of carrying out this process of excluding diseases, this is the most promising method which man has yet devised of protecting himself from the introduction of new pests. The rapid increase of communications and the commercial movement of materials between all countries of the world make this method of more and more importance to crop production and food supply, not only in this country but throughout the entire world.

Breeding and Selection

This is one of the oldest methods of controlling plant diseases, including those of fruit. It is much older than scientific plant pathology, which may be said to date back only about 40 years. Since this process takes place in nature in the natural struggle for existence resulting in the survival of the fittest, it may not be incorrect to suggest that this method probably began with the very beginning of the efforts to cultivate fruits as well as other crop plants. In our own country for over 100 years there have been efforts to produce blight-resistant pears. Strawberry growers and breeders have pesistently sought varieties resistant to the common leaf blight, and in general horticulturists have sought freedom of susceptibility to disease in the various varieties of fruit long before the exact nature of these diseases was definitely known. Even at the present time, with other methods highly developed, this method still stands as one of the very best ways wherever possible to use it in reducing the attacks of fruit diseases. Spraying and eradication and disinfectant methods must be looked upon as comparatively crude and expensive means of fighting fruit diseases in comparison with the selection and propagation of varieties which themselves resist the disease or which require the minimum amount of effort on the part of the grower. The breeding and growing of resistant or immune varieties, therefore, may be considered as one of the highest types of disease-control methods. Horticulturists and plant propagators are not alone, therefore, in recognizing this as one of the most promising lines of research, since plant pathologists are now taking up this line of investigation as one of the best methods of attack. Pears and apples are being bred for special resistance to pear blight. The problem includes the use of resistant stocks and bodies. In the case of the Grimes Golden apple in the eastern United States, the collar blight which has made such serious inroads on this variety is overcome by topworking the Grimes Golden on the Paragon or other resistant roots and thus growing the trunk and collar of the tree so that it will not take this disease. The peach and other stone fruits are being selected for their resistance to brown rot; grapes and small fruits for their resistance to various diseases.

Although fighting outbreaks of plant diseases by spraying and eradication methods may win the battle temporarily and may be regarded as very proper expedients, these methods must be likened to putting out fires after they have started instead of building fireproof or fire-resistant structures. Research work on this line, however, encounters the same kinds of difficulties as the building of expensive fireproof structures. There is little support for this slow and laborious method of preventing disease losses, while on the other hand emergencies existing in epidemics of plant diseases have resulted in prompt action.

Cultural, Marketing, and Storage Methods

Under this somewhat miscellaneous heading may be placed all those ways of modifying or changing usual horticultural methods of growing, harvesting, transporting, and storing fruits

so as to meet the special conditions brought about by disease. This represents many different processes, including even the selection of proper soils and climatic conditions; for example, the Bilyeu peach in the eastern United States was so severely attacked by the peach-scab fungus that it was only grown in the Appalachian fruit belt at elevations above 1,200 feet. Later, however, spraying came to the rescue and controlled the disease at lower altitudes. Modifications of drainage and irrigation methods, in the application of fertilizers, particularly nitrogenous fertilizers, and in some cases the actual withholding of cultivation and fertilization which would otherwise be desirable, are all brought to bear in disease control. The peach is so susceptible to brown rot in the humid eastern United States that stable manure and nitrogenous fertilizers which greatly favor it have to be used with caution, even though they may be desirable from the fruit-production standpoint. Here, again, spraying with the self-boiled lime-sulphur partly frees the grower of this restriction.

Another example is pear blight. This disease attacks the tree directly in relation to its vigor and growth, other factors being equal. The result is that it is unwise at times when growing susceptible varieties of pears in the eastern United States to cultivate them so as to produce the maximum growth. It is even necessary in pear-blight outbreaks to partially or wholly withhold cultivation and to use nitrogenous manures and fertilizers with great moderation; and even pruning, which stimulates vigorous growth, should be partially withheld.

Many of the refinements of handling, transporting, and storing fruits are aimed at disease control. Ordinary fruits remain alive when picked from the tree, and when the fruit or any part of it dies that part becomes brown and decayed or rotten either from the death of the tissues or attacks of weakly parasitic fungi. It is necessary, therefore, to handle fruits so as not to bruise or injure them or break the skin, and it is necessary to maintain temperatures which will insure their longest possible life and the slowest growth of decay organisms.

From this standpoint refrigeration, both in cars and in storage, may be considered as one of the methods of controlling fruit diseases. The transportation and storage diseases of fruits are now being studied and scientific investigation brought to bear on the methods in use. Remarkable progress has recently been made in protecting apples from apple scald by the use of oiled wrappers. In boxed fruit which is commonly wrapped, the only change from the old practice found necessary was to add a suitable mineral oil to a proper paper wrap, the oil absorbing the poisonous emanations of the apple itself, which produce this disease. Another method of accomplishing the same purpose has been worked out in experiments which consist of removing the gases by ventilation, but it has not proven capable as yet of practical application.

Insects in Their Relation to Fruit Culture

It would seem that the multiplying hordes of insect pests would render it impossible longer to produce sound fruit. Yet our ability to deal with these enemies is such that we are growing increasing quan-

tities of perfect fruit with each succeeding year. Our annual average of fruit shipments from 1918 to 1922 included 93,308 cars of apples, 28,778 cars of peaches, 13,686 cars of pears, and 78,717 cars of citrus fruits. A considerable part of this fruit was prepared for market under rigid inspection against insect injury. Much of it was shipped through cooperative organizations whose standards preclude the marketing of wormy, scaly, and otherwise insect-disfigured products.

Knowledge of insect habits and discoveries and inventions of control measures have kept pace with the insect increase. On all up-to-date fruit plantations insecticides and the machinery for applying them are a part of the regular equipment. By the constant use of these provisions our markets and homes are annually supplied with sound and beautiful fruit. Fruit growers have always been alert to protect their crops against insect depredations. The pioneer fruit growers were among the first persons to record the presence of insect pests in America. They observed what to them were unfamiliar insects attacking both the native fruits and those they had brought from the Old World to test here in a new land. The records they left are now of interest and value in tracing the development of insect enemies in this country.

In the first comprehensive publication on injurious insects entitled "Insects Injurious to Vegetation," by Thaddeus W. Harris, and published by the State of Massachusetts in 1841, there are described about 50 species which injure fruits. Since that work appeared fruit-insect pests have gradually increased in numbers. A manual of insects injurious to deciduous fruits, published within the last 10 years, describes 209 species that are considered to be of special importance, of which 85 attack the apple tree and its fruit. This manual makes no attempt to discuss the multitude of less important insects that injure deciduous fruits, nor the great number of species attacking citrus fruits. A paper recently published lists 30 insects that are known to feed in or disfigure the fruit of the apple tree.

There are fruit-insect pests which occur generally over relatively large portions of the country, such as the codling moth, plum curculio, and San José scale. There are other species destructive to fruit which are confined to small areas and about which people in general know but little. As an example, a recent Government bulletin describes eight important insect pests of the mango in this country, and a similar bulletin treats of nine destructive insects of our avocado plantations. Figs, papayas, and many other fruits grown only in restricted areas all have their destructive insect enemies.

Insect Conditions During the Early Days of Fruit Culture in America

Attention to fruit culture in this country began almost as soon as settlements of the white race were established. Accustomed to fruit in their former European homes, the settlers craved it here and early began to plant orchards and fruit gardens. As already referred to, a portion of such plantings were derived from seeds, cuttings, and plants brought from the old country. Also, they began to cultivate some of the wild fruits which they found growing in

forest and glade around the settlements. At first there were apparently no serious insect pests in evidence, for trees and plants upon which care was bestowed seem, in most cases, to have borne satisfactory crops of sound fruit.

In time, however, native insects that had hitherto fed and bred upon the wild fruits began to injure the cultivated crops. Records were left which show that several species of caterpillars, tree borers, and curculios, which previously subsisted upon the native plants, turned their attention to orchards, and in some cases did great injury. Thus early in the development of fruit culture in this country there began the increase in insect numbers and depredations which has continued to the present time.

Conditions Favoring Increase in Losses from Insects

It is common knowledge that fruit insects are much more abundant than formerly. Each succeeding generation is reminded of the good old days when this or that pest of the orchard or fruit garden was not known. This increase has come about in many ways, most of them incidental to an expanding fruit industry. Enlarged plantings, the introduction and cultivation of fruits in new regions of the country, and the commerce in fruit and fruit plants with other countries of the world are causes which have contributed to the increasing multitudes of fruit-insect pests and the losses which they inflict.

FIG. 217.—Service tree, a native host plant of the roundheaded apple-tree borer

Increase in acreage of fruits.—Deciduous-fruit culture in this country began in the seventeenth century with the planting by colonists of small orchards and vineyards, and increased, or mass planting of orchards has established and maintained conditions under which insects breed and multiply. They have been furnished with an abundance of food and with conditions favorable for their young, and are relieved of the hazard of searching abroad for the necessities of life and propagation. Quite obviously, a greater number of tent caterpillars or aphids may develop and produce offspring upon an acre set to apple trees than

upon a similar area having upon it only one or two such trees. An orchard, vineyard, or citrus grove is a potential nursery for insect propagation, and the larger the planting the greater may be the insect increase.

FIG. 218.—A wormy apple, the work of the codling moth larva

Planting in new regions.—From the place of its origin in the East, deciduous-fruit culture followed the course of settlement and spread westward. As civilization advanced, orchards were planted on every frontier and fruit culture was constantly being introduced into new regions. Cultivated fruits were thus brought within the ranges of insects which had previously subsisted on related wild fruits (fig. 217). In time, practically every native species of insect that had habitually fed upon wild fruits was furnished an opportunity to sample some cultivated variety that resembled its accustomed food. It often happened that the insect preferred the cultivated to the wild crop and turned its attention largely to the more acceptable food which man had provided. In this way fruit-insect

FIG. 219.—San Jose scale on apple

problems, both local and general, came into existence almost throughout the country.

Increasing Commerce With Foreign Countries and Insect Introduction

Through commerce with other countries many species of foreign insects have accidentally been brought to our shores on incoming products. These insects repeatedly have escaped and established themselves in our territory, becoming pests of great economic importance. Among these are numerous species which injure fruits. The introduction of foreign fruit-insect pests began in Colonial days, and with the extension of transportation facilities there has been an increasing arrival of such insects from almost every country of the globe.

FIG. 220.—Cottony cushion scale, a destructive enemy of citrus

The codling moth (*Carpocapsa pomonella*), an insect which has done inestimable damage to the apple industry of this country, found its way here, probably from Europe, about 1750 (fig. 218). Both the pear slug (*Eriocampoides limacina* Ratz.) and the bud moth (*Spilonota ocellana*) were introduced from Europe during the early days of fruit culture in America. Following these came the pear psylla (*Psylla pyricola*) and the antique tussock moth (*Notolophus antiqua* Linn.), both orchard pests of destructive habits. Between 1850 and 1900 there were fruit insect pest introductions of the gravest importance, among them being the San José scale (*Aspidiotus perniciosus* Comst.), (fig. 219); the fruit-tree bark beetle (*Scolytus ruglosus* Ratz.), rosy apple aphis (*Anuraphis roseus* Baker), gipsy moth (*Porthetria dispar* Linn.), brown-tail moth (*Euproctis chrysorrhaea* Linn.), and the peach-twig borer (*Anarsia lineatella* Zell). Numerous scale insects, mealybugs, white flies (figs. 220 to 224), and other forms of foreign origin found their way into the citrus groves of the country. The more recent introduction and spread of the oriental fruit moth (*Laspeyresia molesta*) (page 509), Japanese bettle (*Popillia japonica*) (page 509), and camphor scale (*Pseudaonidia duplex*) (page 510), together with the fact that dangerous foreign species are almost daily being intercepted by quarantine officers at our ports of entry, emphasize the present and future danger from this source.

Early Methods of Insect Control

Insect injury to cultivated fruit had continued in this country for many years before a systematic study was made of any one of the

offending species. Lacking knowledge of the natures and life histories of the pests, the control measures which the early fruit growers used were often ineffective, and in the light of our present knowledge of the subject sometimes ludicrous. It would hardly be proposed in these days, as it once was in this country, that a 9-foot fence be built around plum trees to shut out the plum curculio, or that dead mice be hung among the branches of the trees in order that the curculio beetles might deposit their eggs in the putrid flesh instead of in the fruit.

The resourcefulness of the early growers in devising methods for saving their fruit from insects, however, showed their great interest in the matter and their alertness to take advantage of any possible

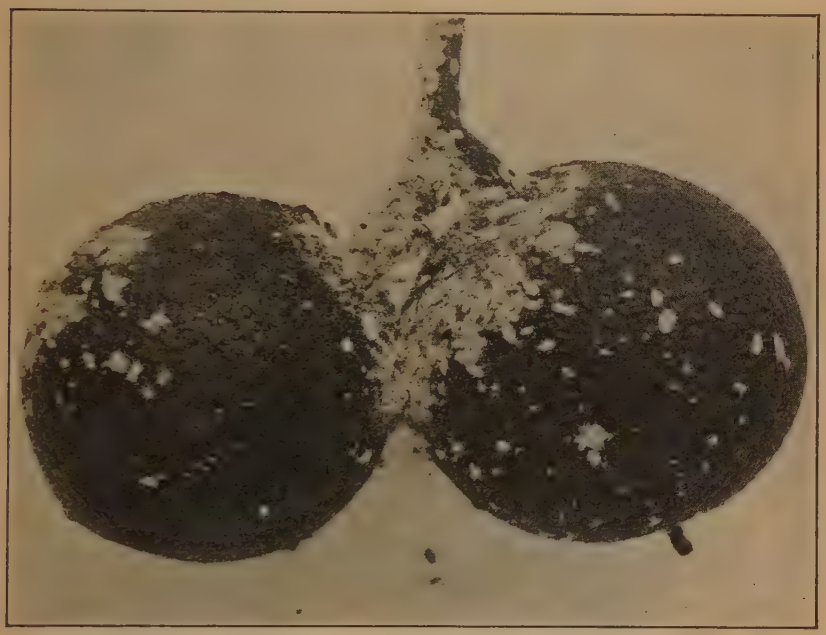


FIG. 221.—A mealybug on citrus

means of relief. Among the popular treatments of early days, which have since been discarded, were the attempts to drive insects from orchards with odors made by burning brimstone, tobacco, leather, and woolen rags under the trees, or by hanging tansy, or rags saturated with turpentine or carbolic acid among the branches. A frequent practice was to bore holes in the trunks of trees, and fill them with sulphur, salt, calomel, or asafetida with the idea of tainting the sap so that insects would not relish the leaves and fruit. Some meritorious measures came into use, however, which have since been developed and are now practiced on a large scale. Syringing trees as a means of killing insects was early considered. We find that in the year 1746 Peter Collinson, a noted botanist of England, wrote to his fellow botanist, John Bartram, living in the vicinity of Philadelphia, regarding means for saving nectarines from attacks of the

plum curculio. After suggesting the smoking of infested trees with burning straw, he continues:

> If the trees were to be squirted on with a hand engine with the water in which tobacco leaves were soaked; either of these two methods, I should think, if they did not totally prevent, yet at least would secure as much of these fine fruits as would be worth the labor of people of circumstances who are curious to taste these delicious fruits in perfection.

It is interesting to note that the practices of spraying with poisons and contact insecticides, dusting, fumigating, flooding, baiting with poisons, jarring, trap-cropping, hand collecting, and biological control were all advocated in the early days of warfare against fruit-insect pests. These methods, although first used in very small and imperfect ways, are the practices which, greatly improved, are chiefly depended upon in our modern insect pest-control work.

FIG. 222.—Camphor scale on Satsuma orange

Probably the first systematic treatise on a fruit-insect pest in this country was published in 1795. Stimulated by an offer of $50 made by the Massachusetts Society for Promoting Agriculture "to the person who shall, on or before the first day of July, 1795, give a satisfactory natural history of the canker worm," William D. Peck made a study of the insect, chiefly of the species we now know as the spring canker worm (*Paleacrita vernata* Peck), and for his studies and the account of the insect which he published in the Massachusetts Magazine for September and October, 1795, was awarded the prize. Nine years later, in 1804, James Tilton, of Wilmington, Del., published a rather full account of the life history and habits of the plum curculio. The information obtained in these studies formed a basis for dealing more intelligently with these species.

In 1841, as previously mentioned, the first general work on injurious insects was published in this country by Thaddeus W. Harris. This book of about 500 pages, issued as a report of the Commissioners on Zoological and Botanical Survey of Massachusetts, described in detail numerous insects injurious to fruits, gave practical suggestions for combating them, and was invaluable as a practical guide to insect habits and control measures. The historical matter which it contains makes it to-day a standard work of reference for entomological students.

In providing financially for the investigations of Doctor Harris, Massachusetts was the first commonwealth to extend State aid to the cause of economic entomology. Following the example set by Massachusetts, the States of New York, Missouri, and Illinois soon furnished means for the study of injurious insects within their borders. As a result, classical contributions to the science of economic entomology by Asa Fitch, of New York, Benjamin D. Walsh, of Illinois, and C. V. Riley, of Missouri, appeared in annual series prior to 1877, which dealt with numerous insect pests of cultivated fruits and formed a foundation for many of the modern usages against such insects.

FIG. 223.—One of the soft scales which are serious enemies of greenhouse and subtropical plants

FIG. 224.—Adults of the citrus white fly

Modern Methods of Insect Control

Although many of the principles involved in modern insect warfare were set forth many years ago, there has been great development and many changes in machinery, insecticides, and, especially in organization, and scope of operations. Perhaps the most intensive and spectacular work is being done in the several relatively small areas of the country where foreign insects have become established locally and are threatening to overrun larger areas. In such places large forces of men are employed under the direction of experts to

proceed against the insects along the lines of preventing to the utmost the enlargement of the infested territory and stamping out the pest if possible. Specialists investigate every phase of the insect's development and habits; its life history, food plants, means of spread, susceptibility to insecticides, natural enemies, and all its relationships to various forms of plant and animal life. Federal and State quarantines are established to prevent the insect from being accidentally carried to outside points. Such spraying and dusting machinery, poisons, fumigants, and other materials and apparatus as combative measures call for are provided and used, often in large quantities. The original home of the insect is determined and specialists are sent to make a study of the species in its native surroundings, especially with a view of finding natural enemies, and, when expedient, sending them in large numbers to this country to assist in the warfare. In these regional operations against introduced insects it is usual for the State and Federal Governments to cooperate in the conduct of the campaigns, and often municipal governments and private individuals assist financially in the undertaking.

One of the important modern methods of insect control is that of safeguarding against the transportation of pests into new territory. The various States have regulations under which nursery products are inspected before being marketed, and the Federal Government maintains a system of rigid inspection at all our land and maritime points of entry. When infested material is found entering this country from abroad it is either destroyed or held in quarantine until proven to be safe for delivery to the consignee.

In the more important fruit-growing centers of the country where operations on a large scale are carried on against insects, materials are usually purchased or prepared cooperatively and machinery for applying large quantities of insecticides effectively and with dispatch is made the more easily available. Work to protect fruit from insect pests is well organized in practically all the State agricultural experiment stations, and the Federal Bureau of Entomology has an important division devoted to fruit-insect investigations. The various officials of experiment stations and the Government are constantly in the field testing and supervising combative measures, and numerous bulletins are issued which keep the fruit growers in touch with the progress of research and discovery along insect-control lines. Through the extension forces of the various States a definite means is provided for promptly carrying to the fruit growers the latest discoveries in entomology and demonstrating their value, also for furnishing timely schedules for the application of control measures.

Outstanding Insecticide Discoveries and Influence in Control Practice

Principal insecticide developments have had to do with stomach poisons, suffocating gases, and materials that kill insects by contact with their bodies. Along these lines there have been frequent discoveries of new and better materials and methods. The composition of insecticides and the manner of using them have shown constant progress. This advance or evolution is well illustrated in the development of arsenical poisons, chiefly employed for the destruction of chewing or biting insects. Fruit culture had been an important industry in this country for more than a century before a satis-

factory stomach poison was known; thus up to 1873 the recommendations for the control of the codling moth, as stated by LeBaron, were as follows:

(1) Destroying the insects in their winter quarters.
(2) Picking wormy apples from the trees.
(2) Gathering wormy apples from the ground and letting swine and sheep run through the orchards.
(4) Entrapping the worms in bands and other contrivances.

About 1878 LeBaron recommended the use of the pigment Paris green, then a common poison employed to destroy the Colorado potato beetle and for the control of canker worms on apple trees. The following year (1879), J. S. Woodward, a New York orchardist, reported that the poison applied to apple trees for the control of canker worms also controlled the codling moth, while an identical discovery was made by an Iowa orchardist at about the same time. This accidental discovery of the value of Paris green for the control of the codling moth has proved thus far to be the outstanding landmark in the remedial field for this pest. Experimentation with Paris green, white arsenic, and London purple (arsenate of lime), a by-product of analine dye manufacture, imported from Europe, was at once begun by A. J. Cook, in Michigan; S. A. Forbes, in Illinois, and E. S. Goff, at Geneva, N. Y., noted entomologists of that time. London purple was tried against the plum curculio on plum trees in Illinois in 1885 and against the same insect attacking cherries in Ohio during the season of 1887. The adoption of these arsenicals for the control of certain orchard pests, while gradually increasing, was nevertheless rather slow owing to the frequent injurious effect of the poisons on the plants treated and some doubt as to the safety of spraying with arsenicals fruits intended for human consumption.

A great advance in arsenical insecticides was made in 1892 when the value of lead arsenate was ascertained by Mr. Fred C. Moulton, of the gipsy moth commission of Massachusetts. This poison, by reason of the safety with which it could be used on plants, its effectiveness, adhesiveness, etc., proved greatly superior to Paris green or London purple and its use in orchards was rapidly extended, especially from the impetus given by recommendations of the entomologists of the recently established agricultural experiment stations. Lead arsenate was first put on the market as an insecticide in paste form, and a few years later a powdered form was developed, containing about twice the quantity of arsenic per pound. The powdered form rather quickly supplanted the paste through its possessing certain advantages, as reducing freight costs, the elimination of water and obviating the danger of the poison drying out or of freezing. The powdered form of lead arsenate could also be employed for dusting, either pure or diluted. Thus the investigation of chemists and entomologists working on the control of another insect pest, namely, the gipsy moth, resulted in the discovery of an insecticide which has proved to be the most suitable of the arsenicals thus far developed for general orchard use.

Discoveries in the field of contact insecticides for the destruction of soft-bodied insects and other species that can not be reached

by stomach poisons have progressed in a similar manner. For many years preparations of caustic soda, soapy liquids, tobacco washes, etc., were the main reliance. About 1880 a method of emulsifying kerosene so that the oil could be dependably mixed with water was discovered, principally by W. S. Barnard, thus furnishing for the first time an effective and cheap contact spray. This kerosene emulsion has proved to be a great boon for the destruction of soft-bodied insects, and while not now employed to the extent that it formerly was, it is still an important contact insecticide not only in the United States but throughout the world by reason of the general availability of kerosene, and the ease with which the emulsion is made.

FIG. 225.—Fumigating citrus trees with liquid hydrocyanic-acid gas to kill scale insects

The accidental discovery in California about 1886 that the lime-sulphur salt wash, then in use as a sheep dip, was an efficient treatment for the San Jose scale on deciduous-fruit trees, has had a very far-reaching effect on American horticulture, and undoubtedly resulted in the preservation of many large orchard enterprises. The original limesulphur salt wash has been gradually improved until the essential ingredients of the wash may now be purchased in highly concentrated form.

Another landmark in our earlier insecticide history was the development by Coquilette of the use of hydrocyanic-acid gas for scale insects in California, which at once put in the hands of citrus growers a means of control of various scale pests then threatening the industry. As in the case of other insecticides, hydrocyanic-acid gas has been gradually improved in character and in the methods of its use. The original experiment with potassium cyanide in time gave way to sodium cyanide, as containing a higher per-

centage of cyanogen. Another decided improvement was made when by means of special apparatus the gas was generated in a machine outside of the tent under which it was delivered to the trees in accurately measured dosage instead of being generated in a vessel under the tent. The present practice represents a still greater improvement in which the gas is made in the factory, liquefied, and carried to the field in drums and discharged in accurate doses under the tent in a fine spray which quickly volatilizes (fig. 225).

FIG. 226.—Peach-tree borer and its work on young peach tree

FIG. 227.—Control of peach-tree borer by paradichlorobenzene, the crystals shown in proper position

More recent insecticide discoveries include the utilization of paradichlorobenzene for the control of the peach-tree borer (figs. 226, 227, and 228). The volatile crystals of this material are placed on the ground around the infested trees, covered with earth, and, as they volatilize, the heavy gas therefrom penetrates the soil and kills the insects. So popular has this remedy become that it is now being widely used. Peach growers of the Georgia peach belt use about 500,000 pounds of the material annually.

Despite the great value of lime-sulphur wash for the control of the San Jose scale, it was the subject of much complaint by orchardists on account of its disagreeable qualities in handling and its failure to control the insect under some conditions. The Bureau of Ento-

mology has recently adopted the lubricating-oil emulsion in use in Florida for the destruction of scale insects and white flies on citrus trees, and for dormant spraying of deciduous orchards for the destruction of the San Jose scale. This emulsion, consisting of fish-oil soap and lubricating oil, when used at a strength of 2 per cent of oil in the spray, has proved very effective in the destruction of the San Jose scale and without tree injury thus far. This spray has already come into extensive use and is rapidly growing in popularity by reason of its effectiveness, cheapness, and ease in handling as compared with lime-sulphur wash. Machinery for applying insecticides has been constantly improved and much of the success attending the use of insecticides generally must be credited to the ingenuity of the manufacturers of such apparatus.

Distribution and Means of Spread

The ways in which insects spread from one host plant to another, and from one locality to another are numerous and varied, the most important means of sudden and wide distribution being commerce and trade in plants and plant products between different places and countries. Plants, seeds, and fruits in transit may at any time carry insects and insect eggs to new places where they may establish themselves. Many of the most destructive fruit insects in this country were brought from abroad in this way.

FIG. 228.—Earth mounded over the paradichlorobenzene around the base of peach tree

Most insects are capable of flight and they frequently spread to considerable distances by flying. Certain flies have been known to wing their way from 10 to 15 miles, frail-winged moths have been seen at sea a distance of 400 miles from land, and the Rocky Mountain locust has flown 1,000 miles from its breeding ground. Winged insects are sometimes carried far by wind, and even wingless forms are wind-blown to surprising distances. Wind has been known to carry the young of the black scale (*Saissetia oleae*), a pest of citrus trees, a distance of 450 feet, and the clover mite (*Bryobia pratensis*), a distance of 650 feet. The young caterpillars of the gipsy moth (*Porthetria dispar*), by means of their long hairs have floated like a thistle seed a distance of 30 miles. In moving from plant to plant large insects and birds are known to transport scale insects, which cling to them in their crawling stage, just after hatching or birth.

Some very destructive fruit insects are distributed among fruit trees and plants by ants; for example, several species of aphids are carried in this way. In the southwestern part of this country the Argentine ant, itself a direct fruit pest of importance, performs a secondary injury in carrying mealybugs and scale insects from tree to tree in citrus orchards, establishing new colonies of these pests wherever sound wood can be found. Not only does the ant distribute these insects but it guards them against attack by such enemies as ladybird beetles, lacewing flies, and parasites, even going to the extent of building shelters composed of grains of earth and leaf mold over their protégés to ward off danger. In some places the work of this ant furnishes one of the most serious problems in keeping citrus trees free from the scale insects and mealybugs.

In regions infested by some of the newly introduced foreign fruit pests constant watch is kept at certain seasons to prevent passing automobiles and other vehicles from carrying the insects into new localities. Japenese beetles and gipsy moth caterpillars are especially inclined to crawl upon or hide themselves within such protection as automobiles afford and having found lodgment they are likely to be carried to distant points with a possibility of starting new colonies.

Source and Present Status of Fruit Insects

Fruit growers of this country are now concerned with more species of insects, and not infrequently, with more individuals of each species, than at any time in the past. Likewise, their knowledge of these insects and their ability to deal effectively with them are greater than ever before. Among the vast number of fruit insects there are certain species, which, so far as known, have always existed in this country. Others have gained entrance from almost every other part of the globe. Representatives of these native and foreign species are well distributed and found intermingling in most orchards and fruit plantations.

Native insects.—Among the outstanding insects native to this country with which our fruit growers are all too well acquainted, may be mentioned the scurfy scale, grape phylloxera, canker worms, apple-tree tent caterpiller (fig. 229), peach-tree borers, cherry fruit flies, apple maggot, rose chafer, grape root-worm, roundheaded apple-tree borer (fig. 230), flatheaded apple-tree borer, pecan nutcase bearer (fig. 231), and plum curculio (fig. 232). Over 160 native species have been recorded as attacking our wild thorn apples, any one of which is a possible enemy of several cultivated fruits which are nearly related to the thorn apples. In addition to those mentioned, there are hundreds of species which originally fed on the wild fruits of America, but which now attack the cultivated fruits with varying severity.

Introduced insects.—The list of introduced fruit insect pests is a long one. It includes numerous species of aphids, pear psylla, citrus white fly, spider mites, scale insects, including the San Jose scale and many scale insect pests of citrus trees, the codling moth, oriental fruit moth, gipsy moth, brown-tail moth, fruit-tree bark beetle, Japanese beetle, and numerous others, all of which were formerly unknown in this country.

Many small but very dangerous species adhere to trees and plants and are easily overlooked even in the most careful inspection. Something of the task of our quarantine inspectors may be understood by examining the records of interceptions made at our ports of entry. For example, in 1920 over 11,000,000 foreign plants were inspected at the ports, and, in addition to the great number of other insects found upon them, there were 80 distinct species of scale insects, many of which undoubtedly are of destructive habits. In 1921, the number of plants arriving from foreign countries was 27,507,929, and insects were found upon these plants coming from 78 countries of the world. In 1922, insects were intercepted on plants coming from 84 countries, and in 1923 they were found entering our ports from 93 countries, these insects including 91 different scale insects which were identified as to species and many others that were known only as to their genera. A recent shipment of 12 mango plants into this country from Brazil was found by inspectors to be infested with white flies, aphids, ants, and 11 different species of scale insects.

FIG. 229.—The tent caterpillar, *Malacosoma americana*, and its nest in crotch of cherry tree

With such vast numbers of insects arriving on plants from abroad it is easy to understand that in spite of the greatest vigilance there is constant danger of new pests finding their way into our plantations. The economic significance of such danger to the fruit industries of the United States is only understood and appreciated when it is realized that the commercial fruit production of the Nation has an annual value of approximately $700,000,000. The investment in orchards and equipment for their maintenance and operation amounts to several times the value of the annual harvest.

Scientific Knowledge of Insects as a Basis for Control

Effective warfare against insects must be based upon an intelligent understanding of the life history and habits of the species to be dealt with. The complex life cycles of insects, their varying habits, interrelations with one another and with other animals and plants, and their frequent departures from expected courses of behavior, all combine in making it a matter of importance that control efforts be conducted in the light of thorough investigations and well-defined conclusions. The whole history of man's relation with insects, the part he has played in unwittingly encouraging their increase, and the efforts made to suppress them, are marked by mistakes due to lack of understanding of the species involved. Past experiences show that we should be in possession of all possible facts when we go forth to engage in a warfare against an insect. Scientific investigations, and patient and painstaking study of an obnoxious species, have often brought to light advantageous points of attack in the most unexpected places. The success of our future strenuous struggle with insect pests depends upon the knowledge we have concerning them.

FIG. 230.—Larvæ or grubs of the roundheaded apple-tree borer exposed by removal of bark

Biological Control of Fruit Insects

By biological control of insects is meant their suppression through the use or encouragement of their natural enemies, such as fungous and bacterial diseases, parasitic and predacious insects, birds, and other organisms. Probably the increase of all fruit insects is checked, at least periodically, by these natural agencies. There are undoubtedly many species of insects which have never attracted special attention but which would become excessively destructive were these natural checks to their increase removed.

In certain cases we can assist biological control through artificial means. The presence of insect-destroying birds may be encouraged in the orchard by providing nesting places and water in summer and food in winter, and by protecting them at all times against such enemies as hawks and cats. Birds destroy immense numbers of aphids, moths, and woodborers. In the United States 36 kinds of

birds are known to feed on the codling moth, with the result that frequently from 60 to 90 per cent of the overwintering larvæ are devoured.

In some cases entomogenous fungi (fungi that attack or destroy insects) have been used artificially to produce contagious diseases among insects. The fungus (*Entomophthora aulicæ*) has been distributed among the caterpillars of the brown-tail moth in New England, and under some conditions has spread and killed from 63 to 100 per cent of them over areas of considerable extent. In a similar way the so-called red fungus (*Aschersonia* sp.) has been used to infect and control the white fly of citrus orchards in Florida, and the fungus *Sphaerostilbe coccophila* has become an important check on several destructive scale insects, especially in the Gulf States.

FIG. 231.—The pecan nut-case bearer

The most extensive and effective work in biological control, however, has been in combating injurious insects by encouraging other insects to prey upon them. This method of dealing with orchard insect pests began with the historic introduction in the winter of 1888–9 of a ladybird beetle (*Vedalia cardinalis*) from Australia into the citrus orchards of California for the purpose of checking the ravages of the cottony cushion scale (*Icerya purchasi*) (fig. 220). This scale insect, accidentally introduced from Australia about the year 1868, attacked the citrus tree, and within 20 years the whole citrus business of that region seemed doomed. The United States Department of Agriculture obtained 127 specimens of the ladybird beetle, which had been discovered feeding upon the scale insect in its native home. These beetles were released in the infested orchards in California, and within 18 months they had practically cleaned out the pest. Quite naturally, the success of this attempt led to much visionary speculation regarding the possibility of artificially setting one portion of the insect population to the task of ridding the earth of the more objectionable kinds. Although the idea has been carried to extremes, it is sound within certain limits, and this method

FIG. 232.—Injury to apples by the plum curculio

of insect warfare is receiving considerable attention in this country at the present time.

At the close of 1923 about 75,000,000 predatory and parasitic insects, representing 45 species, had been brought from Europe and released in the Northeastern States to prey upon the gipsy moth. At least 15 of the species have become established and are attacking the insect. From 1920 to 1922 agents of the Bureau of Entomology found in Japan 11 species of parasites attacking the Japanese beetle. Of these parasites 326,000 were secured and brought to America and released in the region near Philadelphia, where the Japanese beetle has become established. A great many species of introduced parasites and predacious insects are assisting materially in holding scale insects, aphids, and mealybugs in check within the citrus orchards of Florida and California. In California these beneficial species are reared in laboratories in enormous numbers and liberated among the insects which they are expected to destroy. Perhaps no other method of holding fruit insects in control has greater promise than this practice of using the natural enemies to destroy the harmful species.

Present Losses and Costs of Fruit-Insect Control

The total tax imposed by insects upon the fruit industry of this country is difficult to compute. Many statistics have been compiled which are based upon our best sources of information and are considered conservative. These statistics are arrived at with great difficulty, for in addition to the visible and direct attacks there must be charged against insects the general weakening of trees and plants upon which they feed, secondary troubles which follow attacks, the enormous costs of investigations, inspections, and control measures and the execution of the numerous laws relating to injurious species, to say nothing of the annual tax levied upon every fruit grower in the cost of sprays, dusts, fumigants, and other means of control and the cost of applying them, all of which must be taken into consideration in determining the cost of producing the product.

In 1907, Quaintance [7] estimated the annual shrinkage of the apple crop in this country due to the codling moth at $12,000,000, the added expense of control bringing the total to $15,000,000 or $16,000,000. He placed the annual loss from all fruit insects at $66,000,000. Herrick [8] gives the annual cost of spraying for the codling moth as $4,000,000, and for the San Jose scale $10,000,000. The total cost of combating the gipsy moth in this country since its introduction has now exceeded an expenditure of $20,000,000, and we are continuing to spend $1,000,000 annually for its suppression. Other expert estimates place the annual loss from the codling moth in Illinois at $2,375,000 and New York at $2,500,000. Quaintance has estimated the yearly loss from the plum curculio at $8,500,000. Snapp [9] states that the outbreak of the plum curculio in the peach belt of Georgia in 1920 cost the peach growers $2,000,000. In 1923 Felt [10] found that the annual cost of enforcing plant quarantines in the various States was $1,500,000. Large as these estimates seem, they are well considered and are probably below the actual cost levied by these pests.

---

[7] Report National Conservation Commission, 1909, p. 1065.
[8] Herrick, INSECTS OF ECONOMIC IMPORTANCE, pp. 2–3.
[9] Circular 216, U. S. Dept. of Agr., 1922.
[10] Journal Economic Entomology, vol. 16, No. 1, February, 1923, p. 39.

Present-Day Efficiency in Fruit-Insect Control

With highly organized efforts along many lines of fruit-insect suppression, efficiency in control is gaining steadily. Our foreign and domestic quarantines are preventing to a large degree the introduction and spread of dangerous fruit pests. Prompt measures have resulted in the stamping out of local infestations of foreign species, and in other cases are retarding the spread and increase in areas of infestation. Biological control, especially of introduced fruit insects, is advancing rapidly. Through the good work of introduced natural enemies the gipsy and brown-tail moths have recently reached their lowest stage in destructiveness for many years. Scale insects, aphids, and many species which are susceptible to arsenical sprays, with modern machinery and improved insecticides are being controlled more effectively than in the past. After years of unsuccessful attempts in the Eastern States and on the Pacific coast to control the peach-tree borer with insecticides this result is now being accomplished with paradichlorobenzene (figs. 227 and 228).

Among the factors that are producing greater efficiency in fruit-insect control, there should be mentioned certain practices in spraying that make especially for its effectiveness and economy in use.

Spray schedules—Schedules for spraying orchards, vineyards, etc., have been worked out for most sections of the country, whereby the time of treatment is coordinated with certain periods of susceptibility on the part of the insects being dealt with. These schedules vary to suit the locality and the habits of the particular insects, and provide safe rules whereby treatments may be given with the greatest possible economy and effectiveness.

Combination treatments.—For years growers have sought to apply treatments at such times and in such a manner as to destroy, if possible, more than one kind of enemy. With this end in view, a great many combination sprays have been evolved with the result that at present large spraying operations are seldom carried on which are directed at a single insect. The great proportion of liquid sprays and dusts now used in orchard work contain both insecticidal and fungicidal properties. Such are the lime-sulphur preparations, which have been used for spraying so extensively and which destroy or prevent both insects and diseases. By the addition of nicotine sulphate to arsenical sprays and dusts the mixtures are made effective against both chewing and sucking insects. As an illustration, sprays intended primarily for destroying the codling moth, may be so prepared and timed as to kill a dozen other pests in the one application. The margin of profit resulting from spraying and dusting is greatly increased by the ability of the fruit grower to effect widespread destruction of his insect and fungous enemies at one and the same time.

Spray rings.—It is often possible for a group or community of small fruit growers to cooperate in spraying operations with great saving to its members. By combining forces they may economize in labor and in the expense of purchasing and operating their outfits. Several growers may unite in buying and operating a spraying machine of high power and sufficient capacity for their combined orchards at less cost to each and with better results in destroying pests than if they were to act independently and expend a like

amount of time and money on less expensive outfits (fig. 233). By cooperative purchase of materials and their application spraying is usually done in less time and at less cost than could be accomplished otherwise.

Needs and the Future Outlook

There is no prospect of any cessation in the need of continued strenuous warfare against fruit insects. Doubtless, in the future as in the past, some species will decrease while others increase, and there will be fluctuations from season to season, but profitable crops of sound fruit will be obtained only by protecting them from insects. It is reasonable to suppose, however, that the trouble and cost of protection will not greatly increase, in fact, future discoveries and inventions, and better understanding of the natural laws governing

FIG. 233.—A comparatively simple and inexpensive power sprayer such as is frequently used in spray-ring work

insects, may simplify the many problems that confront us. For example, more definite standards in the chemical compositions of insecticides which fruit growers are using so extensively will enable them to kill the insects without the present danger of injuring trees and plants.

We have need of better methods for killing boring insects which penetrate the wood of orchard trees; for less expensive and more effective methods of killing insects in the ground. We need better international arrangements whereby plants and fruits intended for this country from abroad would be insured freedom from dangerous insects before shipment. There is need of increased facilities and funds for more thoroughly safeguarding the country at ports of entry, against the introduction of additional dangerous insects. These and many other problems are receiving attention at the hands of Federal and State entomologists.

Certain recently established pests are at present in a problematical position as to their future effect on the fruit-growing industry, and may well be specifically considered, in this connection.

Japanese beetle.—In August, 1916, about a dozen specimens of a hitherto unknown beetle were found by nursery inspectors in the vicinity of Riverton, N. J. The beetles which were near the size of the common potato beetle, and brilliantly colored in green and bronz, were distributed over an area of not more than half a square mile. It was subsequently learned that the beetle is a native of Japan, where it is known to feed upon the foliage of beans, rose, apple, and various other plants, but in that country has never attracted a great deal of attention. It is supposed to have reached this country as a grub in soil about the roots of imported perennial plants.

FIG. 234.—The Japanese beetle clustered on ripening peach

From the time of its discovery the beetle has multiplied and spread with surprising rapidity. In 1917 the area where it was found increased from about half a square mile to nearly 3 square miles. In 1918 the infested area increased to nearly 9 square miles; in 1919 it grew to 48 square miles; in 1920 to 103 square miles; in 1921 to 270 square miles; in 1922 to 770 square miles; in 1923 it covered a territory of 2,500 square miles; and in 1924 the infestation had spread to 5,200 square miles.

Not only has the beetle rapidly extended its area of infestation, but it has increased in population within this area. The larvæ, which live in the ground, are found in increasing numbers at the center of the infestation. Thus, in 1921 the largest number found in a square yard of soil was 311. In 1922 as many as 1,031 were found in a square yard of soil, and in 1923 the greatest number found in that area of soil was 1,531.

The beetles feed ravenously on the foliage of many kinds of plants. They cluster over and devour ripening apples and peaches, as well as injuring the foliage of the trees. (Fig. 234.) Their food plants include beans, roasting ears, such flowers as althea and roses; they devour the leaves of grape, blackberry, alfalfa, clover, corn, and such trees as birch, oak, elm, linden, and many others, besides many kinds of garden and roadside weeds. At least 212 species of plants are attacked. On account of its habit of injuring fruits it is regarded as a serious pest by orchard owners, as well as by growers of small fruits.

A vigorous campaign is being waged against it, in which every device that is known for suppressing such insects is brought into use. To prevent the insect from being carried outside the present infested territory strict Federal and State quarantines are being enforced. A spray has been devised by which excellent protection has been obtained for such fruits as apple, cherry, and grape, and for the foliage of shade trees and ornamental shrubs. Successful methods are also in use for killing the grubs in the ground and in soil about the roots of living plants.

The introduction of natural enemies, as insect parasites, is being prosecuted on a large scale, and with encouraging results. Thousands of parasites belonging to species which have held the beetle in check in its native home are being collected and reared for release in the infested region of this country.

FIG. 235.—Larva of the oriental fruit moth in green peach

Oriental fruit moth.—In November, 1916, Quaintance and Wood, of the Bureau of Entomology, called attention to the discovery in the District of Columbia and environs of a small moth attacking peaches which was believed to be new to the United States and apparently not hitherto known to science. The injury caused by the insect was described as resulting from the boring of twigs and fruits of the peach and the twigs of plum and cherry by the larvæ (fig. 235).

Fear was expressed that another formidable insect enemy of deciduous fruits had become established in America. Subsequent develpoment has shown that this fear was well founded. The year following the discovery of the insect thorough scouting of various parts of the United States was undertaken to ascertain its distribution. This survey revealed that the insect was abundant in New Jersey, occurred in southern Connecticut and Long Island, and further that there was a strip of infested territory on each side of the railroad lines between Washington and New York. Although it can not be positively stated, it is probable that the insect was independently introduced in several localities, especially in New Jersey and Long Island. No other indication of the insect in the United States was discovered. During the next two or three years the insect spread rapidly from the infested territory into southern Pennsyl-

vania, parts of Maryland, and extended its range materially in New Jersey. It also demonstrated its capabilities for serious damage, especially to late varieties of peaches.

During the summer and fall of 1924 the Bureau of Entomology, in cooperation with the Federal Horticultural Board and various State officials, undertook as complete a survey as possible to determine the distribution of the insect east of the Mississippi River, the results of which show that the insect is now present in Georgia, Florida, Alabama, Mississippi, Arkansas, Tennessee, North Carolina, and Indiana, in addition to the States already mentioned.

In the meantime the insect has maintained its injuriousness, and there can be no doubt that the peach growers are confronted with a first-class pest in the so-called oriental fruit moth, *Laspeyresia molesta* Busck.

Experimental work in orchards for its control has not yet pointed out any very satisfactory means of reducing its injuries. The New Jersey State Agricultural Experiment Station is devoting considerable attention to this insect, and it is stated that by following several procedures, the insect can be materially reduced. Fortunately the oriental fruit moth is much subject to attack by native parasites, and from the eggs, larvæ and pupæ of the pest there have been reared 11 different parasitic species. During 1917, in Maryland, about 80 per cent of the eggs were parasitized, and in 1918, four-fifths of the insects are reported to have been killed in this way.

Camphor scale.—In 1896 there was described from California a new species of scale insect which had been brought into a nursery in San Francisco from Japan. The insect attracted no attention thereafter for about 20 years, when it was rediscovered on camphor trees in New Orleans. An examination of the premises around the infested camphor trees disclosed the fact that the scale was attacking many other species of plants in the vicinity. During the following year the insect spread rapidly and subsequently was found on 172 kinds of plants, including camphor, fig, rose, hickory, oak, elm, citrus trees (fig. 222 on page 494) and many other trees and plants. On many of the plants attacked the insect had a toxic effect, the presence of only a few individuals being sufficient to cause the leaves of a twig to drop. Occasionally death resulted to infested trees within six months after the first attack.

This scale insect is very prolific, a female producing from 200 to 250 eggs. The young on hatching are small, mitelike creatures which move about over the bark in search of places to settle and draw nourishment from the plant. Curiously enough, in this young stage the males gather on the leaves and the females on the twigs.

Fruit flies.—There is a large group of two-winged fruit flies inhabiting many parts of the world which already are fruit pests of great importance and which threaten to become even more destructive in the future. The various species of these flies differ in size, but average perhaps somewhat smaller than the common house fly. Their general colors tend toward light shades of yellow and brown with darker spots and stripes on the wings, many of them being rather prettily marked. The flies insert their eggs beneath the

skin of fruits, thus providing the numerous maggots which mine through the flesh and ruin it for use. There are several native species of flies in the United States which attack our deciduous fruits, and also numerous foreign species which are in danger of introduction into our southern fruit regions. At least one foreign species, the papaya fruit fly (*Toxotrypana curvicauda*), has become established in Florida, where it is attacking and greatly injuring the wild and cultivated papayas.

The Mediterranean fruit fly (*Ceratitis capitata*), the most destructive species of the entire group, has spread to all continents except that of North America. Though originally confined in all probability to western Asia, it has now spread to Tunis, Algeria, Egypt, South Africa, Asia Minor, Spain, Italy, Sicily, Greece, Australia, Argentina, Brazil, the Azores, New Zealand, Tasmania, and Bermuda. It found its way into our island possessions of Hawaii about the year 1910, and within two years had spread to every important island of the group where it is now known to destructively attack 72 kinds of fruit, including oranges, lemons, grapefruit, bananas, avocados, pears, plums, grapes, and even eggplants and tomatoes (fig. 236).

FIG. 236.—Maggots of the Mediterranean fruit fly in mango

In 1921 the quarantine inspectors of the Federal Horticultural Board intercepted the Mediterranean fruit fly on five occasions in coffee berries arriving from Hawaii, and it has been found many times recently arriving in grapes from Almeria, Spain. It has also been found in apples from France and in peppers, avocados, and rose apples from Hawaii.

Another dangerous member of the group is the Mexican fruit fly (*Anastrepha ludens* Loew), which attacks oranges, grapefruit, limes, plums, peaches, and other fruits in Mexico, and is a constant menace to our citrus groves in California, Louisiana, and Florida. The West India fruit fly (*Anastrepha fraterculus* Wied.), occurs in the West India Islands, South America, Central America, and Mexico, and is a destructive insect of many tropical fruits. In 1923 quarantine inspectors found maggots of this fly on 10 different occasions entering the port of New York in mangos from Jamaica. It has also been found entering our ports on sapodillas and guavas from the same island.

In addition to the species previously mentioned there are the olive fruit fly (*Dacus oleae* Rossi), of Africa and western Asia, the melon fruit fly (*Bactrocera cucubitae* Coq.) of oriental countries, the papaya fruit fly, already established in Florida, the banana fruit fly (*Bracto-*

cera curvipennis Frogt.), of the Cook and Tonga Islands, the Queensland fruit fly (*Bractocera tryoni* Frogt.), of Australia and other countries, and the Natal fruit fly (*Ceratitis rubivora* Coq.), of South Africa. The grave danger from the introduction of these flies into our fruit regions adds emphasis to the need of a continuation and enlargement of our foreign-quarantine service. There are at least 20 foreign species of fruit flies that are in danger of introduction into this country. Every year the inspectors at our ports of entry find representatives of the group, usually in the maggot stage, in shipments coming from various countries, and it is undoubtedly owing to the vigilance of these inspectors that many of the species are not already established here.

Among the fruit flies which are native to this country, the apple maggot, or railroad worm (*Rhagoletis pomonella*) is the best known. The maggots of this fly often riddle the flesh of apples in the northeastern sections of the United States. There are two native cherry fruit flies, and two that attack currants and gooseberries. There are also two nearly related native species which attack immature walnuts.

Diseases in Their Relation to Vegetable Culture

The economic relation of diseases to the production of vegetables is of greater importance to the grower of these crops than is generally realized. Some hold that reductions in yield due to diseases do not materially affect the total money returns from a crop because of the resulting increased price received for the remainder, but careful analysis of this point of view shows it to be erroneous. The growing of vegetables without adequate attention to disease control adds to the uncertainties of production, and leads to waste of land, labor, and all expenses incident to growing, harvesting, and marketing the crop, as well as poorer quality, greater losses in transit and storage, and last, but not least, dissatisfied customers. On the other hand, the successful control of crop diseases results in larger yields from a smaller acreage, which requires less fertilizer and lowered production costs. Produce so grown requires less sorting to fit it for market, is not as liable to decay in transit or storage, is of better quality, and therefore brings better prices and gives greater satisfaction to the consumer. The successful application of disease-control measures in crop production results in economy of land and effort and in the greatest certainty of production. A reduction in yield due to the ravages of disease produces quite a different economic result from that obtained by a carefully planned decrease in production from planting a smaller acreage with maximum yields of sound vegetables resulting from effective fertilizing, tillage, and disease control.[11]

Disease Losses

Losses from truck crop diseases naturally are divided into two general classes, direct and indirect. Direct losses from diseases are

[11] It is the purpose of this section to point out the different types of disease losses, to discuss briefly the more important methods and the more recent developments in vegetable disease control, and to indicate their application in a few representative cases. The details of known specific information regarding the symptoms, life history, and spread of many individual diseases, together with directions for their control, are now available in the form of station bulletins and Farmers' Bulletins, which may be obtained free from the various State experiment stations or from the United States Department of Agriculture.

those which immediately affect the growers' returns from his crop. Indirect losses from diseases manifest their effects through weakening the plant, rendering the land unfit for production, and through the breaking down or decaying of the product after it leaves the grower.

Direct losses, on which estimates are usually based, may include the following: (1) The killing of the plants before they have reached maturity, as often occurs in onion smut (fig. 237), cabbage yellows (fig. 238), and pea root rot; (2) stunting or injury to the plants and consequent reduction in yield and quality of the crop, as in the case of late blight and virus diseases of the potato; (3) the decay or serious disfigurement of the product making it unmarketable, as in cabbage black rot and cucumber mosaic (fig. 239); and (4) injury

FIG. 237.—Field of onions on smut-infested soil where formaldehyde was applied. The disease has killed a large percentage of the plants in the two untreated rows in the center, while the remainder of the field has practically a full stand. From Massachusetts Agricultural Experiment Station Bulletin

by diseases which reduces the grade of and thereby the returns from the marketable product, as in the case of potato scab and bean anthracnose. Although no estimates covering such direct disease losses to all vegetable crops are available, the best obtainable figures for two of the more important truck crops give an indication of the general disease situation and may be considered as fairly representative of the entire field. These estimates have been made by the Plant Disease Survey of the United States Department of Agriculture from data gathered by the plant pathologists in the various State experiment stations and are believed to be conservative.

With an actual production of over 450,000,000 bushels of potatoes in the United States in 1922, the estimated reduction in yield due to all diseases, as computed by this authority, was over 120,000,000 bushels, or more than 21 per cent. The sweet potato crop for the same year from 12 important producing States was slightly over 72,000,000 bushels, and the estimated yield reduction caused by all sweet-potato diseases in these same States was over 20,000,000 bushels

or more than 20 per cent. In other words, figured at the average yield per acre for 1922 (105 bushels for potatoes and 98 bushels for sweet potatoes) the total estimated loss from all diseases of the

FIG. 238.—A field with "cabbage-sick" soil, most of the plants having been killed by the yellows. A few plants have withstood the disease, and if such are selected for seed and the process repeated for several years a resistant strain may be obtained

FIG. 239.—Small cucumbers of pickling size from mosaic vines showing irregular, warty growth, off-shape, and yellowed or rusty color, with dark-green warts, making them unmarketable

crops mentioned represents the entire average crop on 1,142,857 acres of potatoes and on 205,816 acres of sweet potatoes. When we add to this the similar disease losses on other vegetable crops, the

result is a direct annual loss so great that it becomes a matter of national importance.

The indirect losses due to disease occurrence, in addition to those on which loss estimates are generally based, include the following: (1) Soil infestation with disease-producing organisms which may cause further and more serious losses in subsequent years; (2) reduced land values due to the inability to grow the most profitable crops for which it is specially adapted; (3) the necessity of growing less profitable rotation crops on the land to reduce disease infestation; and (4) the expense of applying disease-control measures to prevent or reduce losses. These types of losses are illustrated by cabbage yellows, potato scab, sweet-potato stem rot, and in the aggregate amount to large sums each season.

Further indirect losses result from field infection with disease-producing or secondary organisms which may later cause decay of the produce in transit, market, or storage, as illustrated by watermelon anthracnose and stem-end rot (fig 240), the late blight of potatoes (fig. 241), celery watery soft rot, and numerous other troubles. In the single item of watermelon shipments from four Southern States in 1918, a minimum loss of $1,250,000 was estimated from an analysis of market inspection records. This was due very largely to the attacks of anthracnose and stem-end rot. In a single week 2,500 hampers of Louisiana head lettuce had been rejected as a total loss on the track in Chicago, due to disease developing during transit. In 1922 over 11,000,000 bushels of sweet potatoes rotted in storage as a result of the attacks of various diseases. Information regarding the extent and causes of the heavy losses which were being sustained by the shippers and the railroads in the handling of perishable products was not available until after the inauguration of the market inspection service and related pathological research by the United States Department of Agriculture. In 1923 over $10,000,000 was paid by the American railways on claims for losses of fruits and vegetables in transit, which were doubtless largely due to plant diseases.

In some instances the damage to crops is so severe as to cause the abandonment of established industries, while in others it constitutes a more or less serious annual tax on the producer, the severity of the attacks varying from season to season depending on environmental factors. The presence of cucumber scab and mosaic disease have been responsible for the discontinuance of many salting stations of the cucumber-pickling industry in Wisconsin, Michigan, and Indiana during the last two decades. Prior to the development of resistant varieties the yellows disease of cabbage had, in numerous instances, notably in Wisconsin and Ohio, caused the virtual discontinuance or serious curtailment of the crop. The fusarium wilt of the tomato is widespread, especially in the Middle Atlantic, Central, and Southern States, and has annually rendered culture of tomatoes unprofitable on many thousands of acres of otherwise productive land. Likewise watermelon wilt is very prevalent and serious on many of the sandy soils in the Southern States, which were formerly planted to watermelons.

Even though losses from other diseases have not occurred with sufficient regularity to cause the abandonment of established indus-

tries they are, nevertheless, important either because of more or less regular annual losses or of occasional severe damage under weather conditions favorable to epidemic occurrence of a disease. Examples of the former are found in the virus diseases of the potato, such as mosaic and leaf roll, and of the latter in the late blight of potatoes or the downy mildew of vine crops.

FIG. 240.—Transit loss in a car of watermelons due to anthracnose and stem-end rot

Concentration of production, together with the tendency to plant the land in the same crops during successive years, creates conditions favorable to the rapid spread of plant diseases and the consequent severe losses from them. Until effective and practicable methods of controlling each disease is worked out and made a part of agricultural practice, heavy losses will frequently occur.

These facts serve to illustrate the general nature and the seriousness of disease losses to truck crops and to emphasize the significance of disease control in their successful production. It is therefore essential that growers of such crops should have as complete and accurate information as possible regarding the diseases which are liable to reduce their crop yields, in order that they may be able to recognize the first symptoms and apply the appropriate remedies at the proper time. It is of even greater importance that growers know the best methods of avoiding or controlling these diseases, and by the application of this information, combined with the use of the best horticultural practices, be enabled to produce large yields of healthy crops for which they can obtain the best prices.

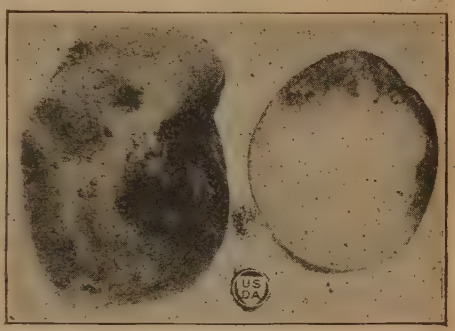


FIG. 241.—Potato tubers affected with late-blight rot

With the development of vegetable pathology in this country, which has come largely during the last 25 years, there has been a progressive advancement in the knowledge of the causes of vegetable diseases and a corresponding improvement in the methods of control. Many problems in plant diseases remain unsolved, new problems will undoubtedly continue to present themselves, and existing methods of control will be improved upon. Nevertheless there is now available a very large amount of accurate information on plant-disease control which is resulting in the reduction of losses to growers as rapidly as the facts are put into their hands and introduced by them into farm practice.

Disease-Control Methods

Crop rotation.—One of the most fundamental and generally applicable methods of vegetable disease control, though far from universally effective, is that of crop rotation. In horticulture the term rotation is generally used to refer to the rather common practice of changing crops for the purpose of maintaining soil fertility. In plant-disease control crop rotation has also the important function of starving out disease-producing organisms by avoiding the planting of the crops on which these occur. Such a use of crop rotation to be effective must be based on certain fundamental information regarding the disease organisms. Among the facts required to formulate an effective rotation is whether the disease organism actually lives over winter under the prevailing conditions either in the soil or on refuse from the diseased crop left on the surface of the soil or plowed under. If able to live under these conditions, the length of time it can thus survive will influence the character of the rotation necessary to eliminate the disease organism. It must also be known what crops are susceptible to the disease, since only those not attacked by it should be included in the rotation.

It has recently been shown by careful research that some disease organisms apparently do not live over winter, either in the soil or

on diseased plant remains, under any known conditions. This is the case with the bacterial wilt of cucumbers and related vine crops and the angular leaf spot of cucumbers. For the control of these particular diseases rotation would, therefore, be of no value, and control must be effected through other means. However, in the case of tomato leaf spot, due to the fungus *Septoria lycopersici*, recent results indicate that while the fungus will live over winter in the latitude of Washington on diseased leaves and stems of tomatoes and certain weed host plants when these are left on the surface of the soil it will not survive if the diseased parts are carefully and thoroughly plowed under in the fall; hence a large degree of control is obtained by this simple method.[12] On the other hand the causal organisms of bean and cucumber anthracnose, onion smut, potato scab, and numerous other diseases are able to survive in the soil for one or more years; hence it is not safe to follow onions with onions or potatoes with potatoes if any of these diseases is an important factor in crop production, but a rotation interval longer than the period the organisms are known to remain in the soil is required. In the case of cabbage wilt, tomato wilt, and other similar diseases it is known that the causal fungi can live in the soil for long periods, so that little or no benefit results from crop rotation.

In order that crop rotation, where applicable, may be effective in disease control, care must also be exercised to prevent reinfection of the fields either through the planting of diseased seed or from the use of disease-infested manure, or by placing the remains of diseased plants, such as pea vines from the cannery or cabbage leaves from the sauerkraut factory, on land to be used for the production of that crop next year. Furthermore, drainage water from higher-lying infested fields should not be allowed to flow or spread over uninfested fields.

The most effective use of crop rotation as a means of disease control consists in planting the affected land to crops known to be immune to the disease in question for a period sufficiently long to insure starving out the causal organism and to guard against reinfection in every possible way.

Soil treatment.—Soil treatments for the control of truck-crop disease organisms which live in the soil, such as root knot, damping-off, and "drop," naturally fall into two classes: (1) Treatment of small quantities or areas of soil, as greenhouse flats or beds, cold-frames or seed-beds; and (2) field treatments. Certain methods which are practical, effective, and well-nigh indispensable in greenhouse culture or in the handling of seed or plant beds are too expensive and impractical for field use. Nevertheless, there are well-worked-out and effective methods for disease control by means of soil treatment on a large scale which are extensively used on certain crops and are considered indispensable to their profitable culture.

Soil treatment in greenhouses and plant beds.—Conditions obtaining in greenhouses used for growing such vegetables as tomatoes, lettuce, and cucumbers are often very favorable for the development of certain soil-borne diseases, such as damping-off of seedlings,

[12] PRITCHARD, FRED J., and W. S. PORTE. THE CONTROL OF TOMATO LEAF-SPOT. U. S. Dept. Agr. Bull. 1288, 18 pp., illus., 1924.

root knot, and lettuce drop. The method for reducing losses from these diseases prior to the introduction of soil treatment consisted in frequent changing of the soil. Though fairly effective in some cases where the less serious diseases were concerned, this method involved a very large amount of labor in handling the soil and had to be repeated practically every year, owing to the rapid reinfestation of the soil from disease organisms remaining in the subsoil, on the sides of the beds, or on the tools used, and furthermore, was frequently ineffective owing to the uncertainty of procuring disease-free soil for replacement.

There are two kinds of soil treatment, the first involving the application of heat and the second the use of chemicals for killing the disease-producing organism. The method best adapted to the control of the specific diseases and to local conditions should be selected.

Hot water and steam treatments.—Soil sterilization by means of live steam or hot water are effective to a degree. In addition to the control of plant diseases, these methods kill insects and weed seeds in the soil, thus reducing the labor of weeding the crop, often a very important consideration. The mechanical condition of certain heavy, silty soils, however, have been so altered by steaming that their water-holding capacity was seriously injured and extreme care was required to bring them back into a friable and normal condition. Although such cases are rare, before undertaking on a large scale the treatment of greenhouse soils of a silty nature with steam or hot water, it is wise as a precaution to try a small plot to determine if any unfavorable results may follow.

Hot water at or near the boiling point applied directly to the soil from a hose, has been used with slight success in greenhouses in the Boston districts, but this method is not as widely used as are the various steam-sterilization methods.

The hot-water method is useful for the treatment of soil in pots, flats, or shallow benches to control diseases (fig. 242), especially in situations where steam is not available. Pots of the smaller sizes, filled with the soil to be used, may be immersed for five minutes in boiling water, then allowed to drain and dry out until in proper condition to plant. Flats or shallow benches may in like manner be treated by drenching with boiling water at the rate of 9 quarts per square foot of soil 4 inches deep. [13]

The type of soil treatment by steam which was first used involved the removal of the soil from the beds or benches to a wagon box or similar container in the bottom of which was placed a series of 1½-inch steam pipes perforated on the under side at 6-inch intervals with ⅛-inch holes to allow the steam to escape into the soil, and connected with a boiler which furnished the steam. The soil was covered with a tarpaulin or similar material to confine the steam and the steaming continued for an hour or until a potato placed in the upper few inches of soil was thoroughly cooked.

A modification of this method which is especially useful for treatment of small quantities of soil for use in flats, pots, small propagating benches, and seed beds, and which ensures a more thorough heating of the soil, involves the use of a steam-tight chamber built

[13] Byars, L. P., and W. W. Gilbert. Soil disinfection with hot water to control the root-knot nematode and parasitic soil fungi. U. S. Dept. Agr. Bul. 818, 14 pp., illus., 1920.

of matched lumber, in which the soil can be exposed to a steam bath for any desired length of time.

A further improvement on this is the use of a steam chamber built of reinforced concrete, or the utilization of one of the large processing kettles, 6 feet deep and 40 inches in diameter, commonly employed in canneries for sterilizing canned goods (fig. 243). In these it is possible to maintain a steam pressure of 10 to 15 pounds and thus obtain increased temperature and thorough sterilization of the soil in a much shorter time than with live steam not under pressure. There are several methods of treating the soil of commercial greenhouses with steam without moving it from the beds or benches which are more practical and less expensive. A method

FIG. 242.—Tomato and lettuce plants showing results of hot-water treatment of soil infested with nematodes and soil fungi. Right, untreated, plants badly stunted and roots severely attacked by soil organisms; left, same soil treated with 3.6 gallons of boiling water per cubic foot. Plants and roots healthy.

which has been used in many large greenhouses, and by some is considered the best, consists in laying permanent lines of 3 to 4-inch unglazed drain tile lengthwise of the ground beds at intervals of 18 to 24 inches and 1 foot to 18 inches deep, through which steam may be discharged for the desired length of time from the steam heating plant. The same tile may be used for subirrigation during the cropping season (fig. 244).

One and one-half-inch iron pipes, with ⅛-inch holes drilled at 6-inch intervals on the under side, may be used for the same purpose, but such pipes rust readily and hence are not as desirable for permanent installation as the tile. Although the initial cost of installation of such equipment is very high, it will be available for a number of years and the labor of moving the soil each time it is sterilized is obviated.

The inverted-pan method by which a sheet-iron or wooden pan about 6 by 10 feet and 6 inches deep is inverted over the soil to be

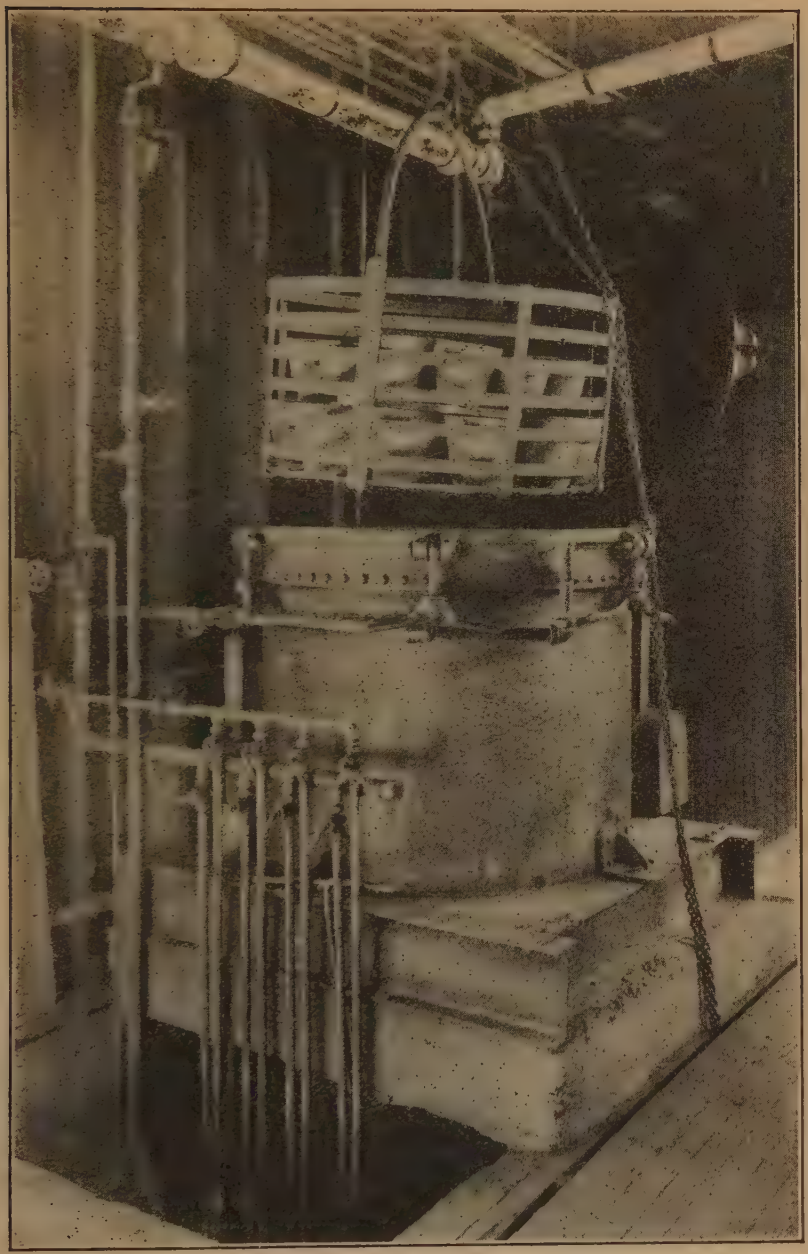


FIG. 243.—Canners' processing kettle (6 feet by 40 inches), used for soil sterilization. Soil in bags, pots, or flats can be treated one to five hours with steam at a pressure of 15 pounds

treated and steam discharged into it for one-half to one hour is in quite common use because of its simplicity and small cost (fig. 245).

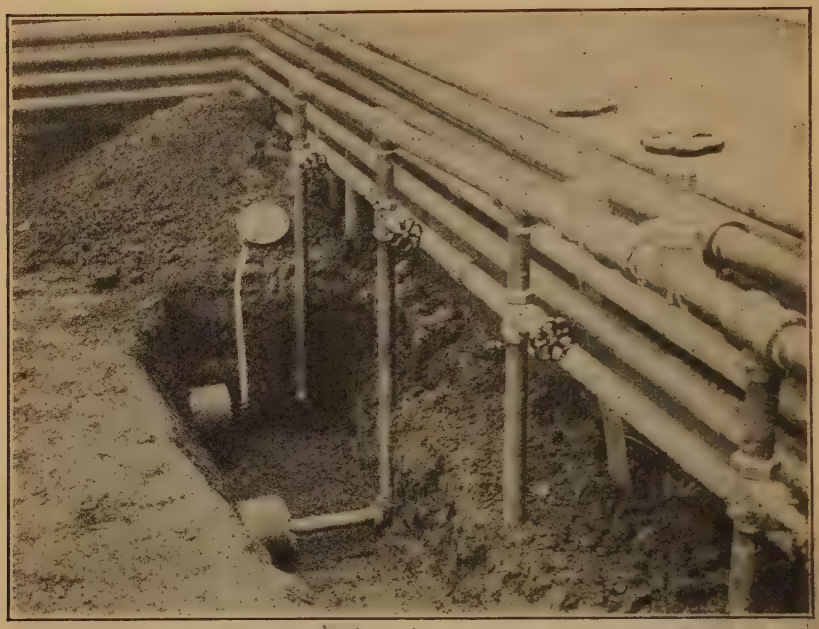


FIG. 244.—Greenhouse with tile installed in ground beds for steaming and showing connection with steam system

In all these methods it is assumed that steam can be supplied from the greenhouse-heating plant or from a portable boiler, and at a pressure and in such volume as to render the work practical and effective. The soil should be thoroughly spaded up and all manure added prior to treatment to avoid danger of reinfestation.

FIG. 245.—Steam sterilizing the soil in a cabbage seed bed in Ohio by means of an inverted pan, the steam being supplied from the boiler of a traction engine

These same methods or adaptations of them to meet local conditions can also be used to treat the soil of out-of-door seed beds employed for growing tomato, cabbage, and other plants, steam being supplied by a tractor or other portable boiler. In the case of sweet-potato beds, new clean sand direct from a sand bank is generally used in preference to any method of treating old sand.

Chemical treatments.—In some instances it is not feasible to get steam for soil treatment. Under such circumstances certain soil

diseases, particularly damping-off and rhizoctonia root rot, can be controlled by drenching the soil with formaldehyde, using 2 to 3 quarts of a 1 to 200 solution to a square foot of bed and having the soil well spaded and in good tilth when treated. This method has given excellent results but is open to the objections that the addition of such a large quantity of water to the soil requires a long time for it to get into condition for planting, especially when used on seed beds in the spring. Furthermore, the fumes of formaldehyde left in the soil sometimes have a tendency to retard the germination of some seed, and, in addition, weed seeds and nematodes are not killed.

In some cases damping-off, rhizoctonia, and other fungi may be checked after seedlings are up by watering the flats or seed beds with weak solutions of mercuric chloride, Cheshunt compound, or

FIG. 246.—Six-row onion seeder equipped with formaldehyde drip attachment for smut control

with one of several commercial organic mercury compounds, though the toxicity of these solutions to different plants has not as yet been thoroughly worked out. This is a relatively new field of experimentation and promising results are expected in the not distant future.

Soil treatment in the field.—In the realm of chemical soil treatments for disease control on a field basis, the formaldehyde drip treatment for the control of onion smut [14] has proved so effective that it is rapidly becoming a part of accepted agricultural practice wherever introduced (fig. 246). By thus surrounding the seed when planted with this fungicide, applied by a drip attachment to the seed drill, infection by the smut fungus is prevented until the seedling has passed the susceptible age.

Lime at the rate of 80 bushels per acre is broadcasted to reduce the losses from clubroot of cabbage and other crucifers. This treat-

[14] WALKER, J. C. ONION DISEASES AND THEIR CONTROL. U. S. Dept. Agr. Farmers' Bul. 1060, 20 pp., illus., 1919, revised 1925.

ment is based on the fact that the growth of the clubroot organism is reduced in an alkaline soil.

Applications of sulphur at planting time at the rate of 300 to 600 pounds per acre, by making the soil reaction more acid, have in some instances, given marked results in the control of potato scab, owing to the fact that the causal fungus is favored by an alkaline soil and checked when it becomes acid. It does not, however, follow that the same treatment will be equally effective in all cases, as unfavorable results have been obtained in some trials. Furthermore, the residual effects on other subsequent crops of such heavy applications of sulphur are in some cases unfavorable and the use of sulphur should, therfore, be taken up only after preliminary trials on a small scale have indicated favorable results. It is hoped that experimental work under way in New Jersey and other States will soon furnish

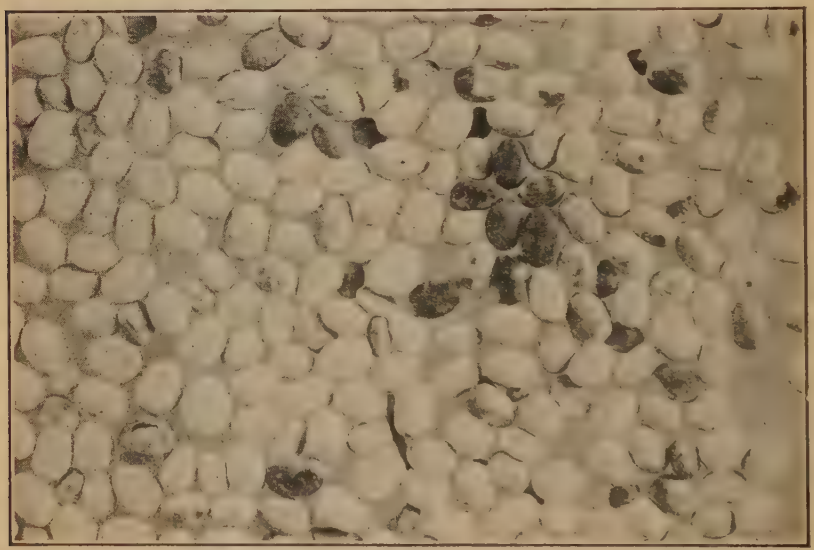


FIG. 247.—Unsorted white navy beans, showing many badly affected with anthracnose. Even though the visibly diseased beans are sorted out, unseen spots on some and fungous spores sticking to others will usually carry the disease to the new crop if such beans are planted. Use only disease-free beans for seed

new data on these matters and indicate the limits of the profitable use of sulphur.

Disease-free seeds and plants.—To prevent the original infestation of soils with disease organisms, as well as for the purpose of guarding against the reinfestation of soils from which diseases have been largely or completely eradicated by crop rotation or soil treatment, it is essential that the seed used be obtained from healthy crops or that they be freed from disease by treatment before planting, wherever fungi or bacteria are known to be carried in this way. The use of disease-free seed is important not only in cases where the disease lives over both in the soil and in the seed, as is the case with the bean anthracnose (fig. 247), but also in instances where the disease is not known to survive in the soil but is carried only in the seed as is the case with potato virus diseases.

The production of disease-free seed or that having the smallest possible amount of infection, while important with all truck crops, has been made essential in many cases either because the diseases concerned are internal and can not be controlled by known methods of seed treatment, or because seed treatment, for other reasons, has not been found practicable. Outstanding examples are seed potatoes, in which the virus diseases are carried, and beans affected with mosaic, anthracnose, or bacterial blight. In the case of both crops no seed treatment has been found which will kill the disease agent without injury to the seed, and with the bean there is the added drawback that any method of soaking the seed will cause the breaking of many of the seed coats and interfere with planting and normal germination.

Procuring disease-free beans is based either on growing the seed in regions where weather conditions are unfavorable for disease development, or on careful hand selection of disease-free pods, the seed from which are planted in a seed plot away from other fields and every precaution taken to avoid the introduction of disease and in addition to rogue out any plants on which disease may appear.

During the past few years careful scientific research by plant pathologists in the United States Department of Agriculture and certain State experiment stations has definitely proved, that most, if not all of the so-called "running out" of potato varieties, formerly attributed to lack of vigor due to long propagation by vegetative methods, is caused instead by several so-called degeneration or "virus" diseases known under the names of leaf roll, mosaic, streak, spindle tuber, and others. Although no method of seed treatment is known which will rid seed stock of these diseases careful research has shown that by starting with strains of potatoes discovered in localities where little or no disease was present, it is possible to grow these under careful supervision in isolated fields and thereby procure superior seed. By controlling insects which spread the diseases and by practicing a careful system of field and bin inspection and roguing, seed can be produced which is not only true to variety and of high productive capacity, but which also carries a minimum of the virus and other diseases of the crop.[15] Seed stock grown and inspected in this way by a State agency having charge of this work and certified by them to conform to established standards of varietal purity, vigor, and freedom from disease is known as "certified seed" (fig. 248). The production of such "certified seed" had its origin in work done by plant pathologists in the Department of Agriculture and was stimulated by the observation of the widespread and increasingly serious occurrence of these diseases not only in northern fields grown for table purposes, but as well in those grown for sale as seed stock to southern growers. Under the conditions obtaining in the South the disease thus carried in the seed resulted in even more serious losses and much dissatisfaction with the northern seed. Recognition of this urgent need for means of developing and certifying seed stock of high quality and as nearly as possible free

[15] SCHULTZ, E. S. WHY POTATOES RUN OUT. U. S. Dept. Agr. Farmers' Bul. 1436, 22 pp., illus., 1924.

from disease led to the beginning of potato seed-certification work in Wisconsin in 1913. As with most new movements, progress was at first slow, for methods of doing the work had to be devised, agencies for carrying it on created, the value of the resulting product demonstrated and a market for it developed.

Following Wisconsin, other important northern potato seed-producing States have established potato seed-certification work under the supervision of the experiment stations, State departments of agriculture, or specially organized potato growers' associations. In 1919, there were 475,308 bushels of certified seed grown in the United States. In 1924 the demand for this seed had become so great that

FIG. 248.—Tour of Michigan potato-seed inspectors through seed-growing territory receiving final field practice in inspection for certification under direction of State plant pathologist

over 7,500,000 bushels were produced in 20 States. Not only has this great increase in production of certified seed come about in a relatively short period, but there has also been a considerable decrease in the amount of disease carried in certified seed. This has been a direct result of the increased information on the methods of eliminating diseases supplied by scientific research and put into practice by seed growers and a raising of the standards of certification.

Certification agencies in the various seed potato-producing States are constantly improving the quality of certified-seed stock, and the seed now available is far superior to commercial uncertified stock. The increase in yield due to the use of certified seed, combined with seed treatment and other disease-control measures is well illustrated by the results obtained in Missouri during the season of 1925. In

this particular State 108 carloads, or 66,190 bushels of certified seed, were planted on 4,500 acres. There were 3,627 farms in 35 counties using certified seed and the increase in yield resulting in the use of certified seed was 46 bushels per acre, or a total of 207,000 bushels increase. Numerous other illustrations might be cited to illustrate the value of potato seed-certification methods.

During the past decade there has grown up a very considerable trade in plants of tomatoes, cabbage, sweet potatoes, and other crops, between certain Southern States, where they can be grown in the open fields early in the season, and Northern States where the commercial crops are produced. Unless great care is exercised to see that only healthy plants are shipped, there is grave danger that diseases new to the northern fields may be introduced. Instances of this sort have already come to the attention of the department. Among the diseases liable to be thus carried are nematodes or eelworms, which cause root knot, a common trouble of numerous truck crops grown in sandy soils; the wilt diseases of cabbage, tomatoes, and sweet potatoes; black leg and black rot of cabbage, and black rot of sweet potatoes (fig. 249).

Growers buying seedling plants should, therefore, be very careful to procure only healthy plants and thus avoid the introduction of diseases which not only would reduce the yield of the initial crop grown, but would remain in the soil as a future source of crop losses. To meet this situation some States have inaugurated a system of inspection of seed beds and certification of plants as to freedom from diseases which operates to markedly reduce the shipment of diseased plants and thus protect the purchaser.

FIG. 249.—Sweet-potato plant infested with black rot. All such plants should be rejected and only plants with healthy roots set out

SEED TREATMENT

Treatment of seed for the purpose of killing the disease organisms within the seed or clinging to the outside is important when disease-free seed can not be obtained. The increasing recognition of the importance of seed transmission of disease, as shown by recent scientific research with numerous vegetable diseases, makes obvious the necessity for treatment of seed where possible. In some instances seed treatment alone constitutes an effective control, and in others it must be combined with other methods, such as crop rotation, soil treatment, or spraying. Several methods of seed treatment designed to kill disease organisms in or on the seed are available, including the use of hot water and of various chemicals, such as formaldehyde, mercuric chloride, and various organic mercury compounds.

The disease organism causing the angular leaf spot of the cucumber is carried on the outside of the seed. A 5-minute treatment in a 1 to 1,000 solution of mercuric chloride followed by thorough washing in water is a very effective method of control and much less trouble than spraying the crop with Bordeaux mixture, though the disease can also be controlled by this method. This disease is not known to live over winter except on the seed, hence seed treatment should eliminate the trouble,[16] only as it may be introduced into a field by insects or other agents from some near-by field where the disease occurs. In a similar manner cabbage, cauliflower, and other vegetable seeds, as well as potatoes and sweet potatoes are treated in a 1 to 1,000 mercuric chloride solution for the control of diseases the causal organisms of which are borne on the outside of the seed. Formaldehyde is also used, especially for potato-seed treatment, in some States, but is not recommended for cucumber seed or for sweet potatoes because of the danger of reduced germination or root injury. The more recent developments include the shortening of the time required for treating potatoes by heating the mercuric chloride or formaldehyde solutions. In Iowa and Missouri a 2½-minute treatment in a solution of 1 pint of formaldehyde to 15 gallons of water, kept at a temperature of 122° F., has been very generally adopted for the control of scab and scurf. In certain other States the hot formaldehyde method has not given as good results when tested alongside the standard 2-hour treatment in a cold solution. In New York a similar treatment for two minutes in a 1 to 1,000 solution of mercuric chloride at a temperature of 122° F. has been found effective in the control of scab and is gaining in popularity. To further expedite the work and reduce the cost of treating large quantities of seed, special equipment for heating the solutions has been devised and machines for carrying the potatoes through the solution have been adapted.

Several organic mercury compounds under various trade names have recently come upon the market as competitors of the older materials used for seed treatment and give promise of great usefulness when their characteristics are more thoroughly understood. Their principal advantages are greater penetration and less likelihood of injury, combined in some instances at least with apparent stimulation of growth.

As a means of placing seed treatment on the most practical basis, in order that more farmers may be led to adopt it, numerous extension pathologists and county agents have centralized the work by establishing community treating plants under the supervision of competent men, thus reducing the cost and insuring the best results through proper preparation of the solutions and accurate timing of the treatment.

A further development along this line has been the adoption by certain seed companies of the practice of treating certain seeds for disease before they enter the channels of trade. The indications are that this practice will increase in the future when its value becomes more appreciated.

Treatment of some seeds by the hot-water method has been found effective in the control of certain diseases which are borne inside

[16] For further details, see U. S. Dept. Agr. Cir. 234, entitled "Bacterial Spot of Cucumbers."

the seeds and therefore not subject to control by chemical treatments. Cabbage black leg and root knot of dasheens are among the diseases which may be controlled in this way.[17]

Another method which as yet has limited application is the aging of seed. By careful experimentation it has been shown that in the case of some seeds which remain viable for several years, the disease organism in or on the seeds will die in one or two years, in which case the planting of old seed will give freedom from seed-borne disease. In the case of celery seed infected with late blight, the disease has been found to die out in two to three years; hence the use of old seed of good germinating power is advised.

Breeding and Selection for Disease Resistance

If varieties of vegetables resistant to all diseases and at the same time suited to the various market demands could be developed, the necessity for the discovery and use of other more cumbersome and less effective methods of controlling plant diseases would be obviated. The nearest possible approach to this ideal method of plant-disease control should be the goal of every plant-disease worker, since the use of disease-resistant varieties when available and suitable is the most economical and practical means of avoiding the losses occasioned by disease. However, there are numerous reasons why this goal may not be reached promptly, if at all. In most cases, varieties bred for resistance to one disease are not necessarily nor commonly resistant to another. Resistance to disease is often difficult to combine with some market requirement and years may be necessary to develop it. In the case of many diseases, varieties showing resistance of practical value have not been found.

Notwithstanding these facts, great advances have been made in recent years in the development of resistant varieties of many truck crops and this is coming to be an increasingly important line of work. A few outstanding examples will be mentioned as indicative of what has already been accomplished and what may be expected in future years.

About 1896 asparagus rust was introduced into the United States from Europe and spread in epidemic form entirely across the country within the next four or five years. The asparagus industry has been developed in this country in the absence of this disease and all varieties were susceptible and losses were heavy. As a result of breeding work inaugurated in 1906 by the Department of Agriculture in cooperation with the Massachusetts Agricultural Experiment Station and the Massachusetts Asparagus Growers' Association, strains of asparagus highly resistant to rust and of superior market qualities were developed at Concord, Mass. These have been increased and distributed throughout the country, so that now the various strains of Washington asparagus are obtainable from many seedsmen and growers.

Through the work of investigators at Cornell University and a New York grower, a variety of beans known as Wells' Red Kidney was bred, which is highly resistant to the anthracnose disease. In like manner the variety of navy bean known as Robust, which is

[17] WALKER, J. C. CABBAGE-SEED TREATMENT. U. S. Dept. Agr. Cir. 311, 4 pp., illus., 1924.

resistant to anthracnose and mosaic disease was developed at the Michigan Agricultural Experiment Station.

Through tests of a large number of varieties of snap beans at the Virginia Agricultural Experiment Station at Blacksburg, several were found which were highly resistant to the rust disease, which causes severe losses in some sections.

Cabbage yellows (fig. 250), a widespread and destructive disease which has caused the discontinuance of the industry in some sections, has been made much less troublesome through the breeding of yellows-resistant varieties as a result of the cooperative work of the Department of Agriculture and the Wisconsin Agricultural Experiment Station.

Varieties of tomatoes highly resistant to the fusarium wilt disease, which is serious and fairly common in the Central and Southern

FIG. 250.—Cabbage yellows. Commercial Hollander, a nonresistant variety (on the left), showing only a few sickly plants still alive among the weeds; crop a total loss. Wisconsin Hollander, a yellows resistant variety (in the rest of the field), bred from a susceptible strain, giving practically a full stand, although the soil was uniformly "yellows sick"

States have been bred by the Department of Agriculture and certain State experiment stations. These varieties are doing much to reduce the losses from fusarium wilt, and at the same time are of superior commercial quality. (Fig. 251.)

The Department of Agriculture and the Virginia Truck Experiment Station, working cooperatively at Norfolk, have developed a variety of spinach which is resistant to the blight or mosaic, a common and serious trouble in some sections of the country.

During the last decade, since the discovery of the dread European wart disease of potatoes in certain restricted portions of Pennsylvania, Maryland, and West Virginia, numerous extensive tests of European and American varieties have revealed the important fact that many of our most widely grown commercial varieties are immune to the disease. (Fig. 252.) These varieties are now being grown exclusively and for local consumption only, in the infested

FIG. 251.—Tomato wilt. Row at left, wilt-susceptible Greater Baltimore on wilt-infested soil; row at right, wilt-resistant Arlington selected from the Greater Baltimore

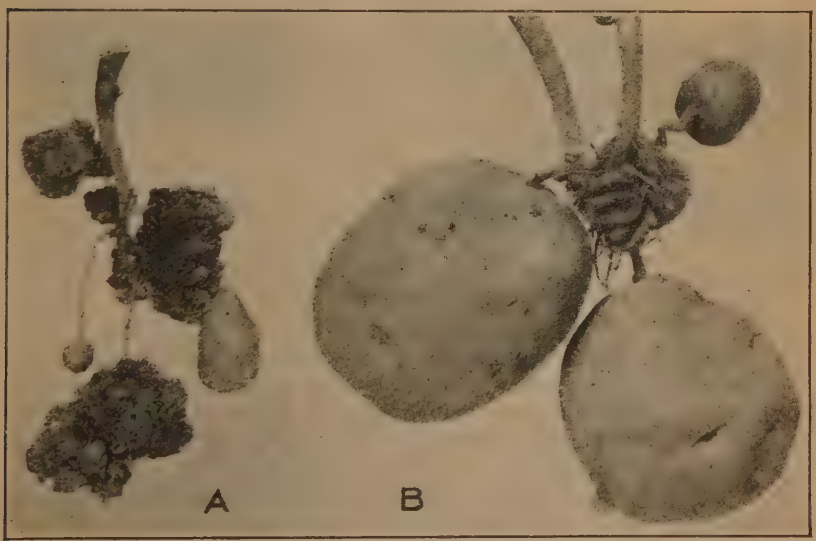


FIG. 252.—Left, the Early Sunrise variety, showing wart disease of the potato which was introduced from Europe before the foreign quarantine law was enacted, and is known to occur in certain limited and closely quarantined areas in Pennsylvania, West Virginia, and Maryland. Right, Irish Cobbler variety found to be immune to wart disease

areas, and will be available for use in other sections, should the disease escape the strict quarantine in which it is now held.

In like manner, peas resistant to root rot, celery resistant to fusarium wilt, and many other disease-resistant or immune varieties of vegetables are being developed through the careful, painstaking researches of department and experiment station scientists, and we may look forward to increasing activities along these lines leading to important results in the future.

Spraying and Dusting

Spraying for the control of several foliage diseases of truck crops has been in use by many progressive farmers for upwards of a quarter of a century. By 1910 the Vermont Agricultural Experiment Station had completed a 20-year spraying test for the control of

FIG. 253.—Community spray ring. The State extension pathologist demonstrating to the operator and interested farmers effective methods of nozzle adjustment and spray application for control of the foliage diseases of potatoes in Pennsylvania

the late-blight disease of potatoes, which showed an average annual increase of 105 bushels per acre or 64 per cent over the unsprayed as a result of regular and systematic spraying with Bordeaux mixture. Similarly, the New York Agricultural Experiment Station at Geneva carried on a 10-year potato-spraying test, which demonstrated the value of the practice by showing an average annual increase in production of 60 bushels per acre. In this connection, it should be noted that homemade Bordeaux mixture 5–5–50 still remains the most effective spray mixture for the control of potato foliage diseases.

The most important recent developments in spraying practice are the trend toward the simplified method of making Bordeaux, the greater recognition of the importance of the technique of spraying (fig. 253), and the increasing adoption of the spray ring as the most

economical and effective means of obtaining the best results under certain conditions.

With the simplified process of making Bordeaux no mixing platform is necessary. The spray tank is filled three-fourths full of water, the lime in stock solution or as hydrated lime is added and thoroughly mixed by means of the agitator. The copper sulphate stock solution is then added and the tank filled with water.

Careful attention is now being given to more thorough and timely application of the spray mixture, including the beginning of spraying earlier in the season before the first signs of disease are seen, the proper regulation of the intervals between spray applications in relation to weather conditions, the supplying of additional nozzles as the crops grow in order that all parts may be reached by the spray, and the use of machinery to furnish adequate pressure to obtain a fine mist and thus get the best spray distribution. The difference between success and failure in spraying is often traceable to neglect of some of these essential details (fig. 254).

In an effort to simplify the process and reduce the time necessary to do the work of spraying, considerable attention has been given by plant pathologists, chemists, and manufacturers during the last decade to the perfection of suitable fungicidal dusts and machinery for their application, and to the comparison of dusting versus spraying as a means of disease control.

The principal advantages of dusting over spraying are: (1) The greater rapidity with which the applications can be made; (2) the fact that no water is required, a factor of no small importance where fields are far distant from a water supply; and (3) the fact that dusts may be purchased ready to apply, thus doing away with the expense of spray-mixing platforms and containers, as well as the work of preparing and mixing the chemicals. There is also the fact that many insects can be most advantageously controlled by dusts and combination treatments are thus made possible.

The corresponding disadvantages of dusting are: (1) The greater cost of the dust applications per acre; (2) the fact that in many instances at least it does not give as good disease control as spraying; (3) the further fact that it is more easily and completely washed from the foliage by rain; (4) the limitation of the most effective dusting to periods of still weather; and (5) the necessity of purchasing new dusting machinery when serviceable spraying equipment is already on hand.

Some of the most recent results of comparative trials of dusting and spraying for the control of potato diseases, published by the New York Agricultural Experiment Station[18] at Geneva, indicate that after four seasons of careful comparison not one of the three diseases concerned (early blight, late blight, and hopperburn) was as satisfactorily controlled by dusting as by spraying even when the dust was used twice as frequently as the spray. These results correspond in general with those obtained at several other State experiment stations, though a few experimenters have reported as good or better results with dusts than with sprays.

It should be borne in mind that dusting for the control of truck-crop diseases is still more or less in the experimental stage with pros-

[18] Bulletin 518.

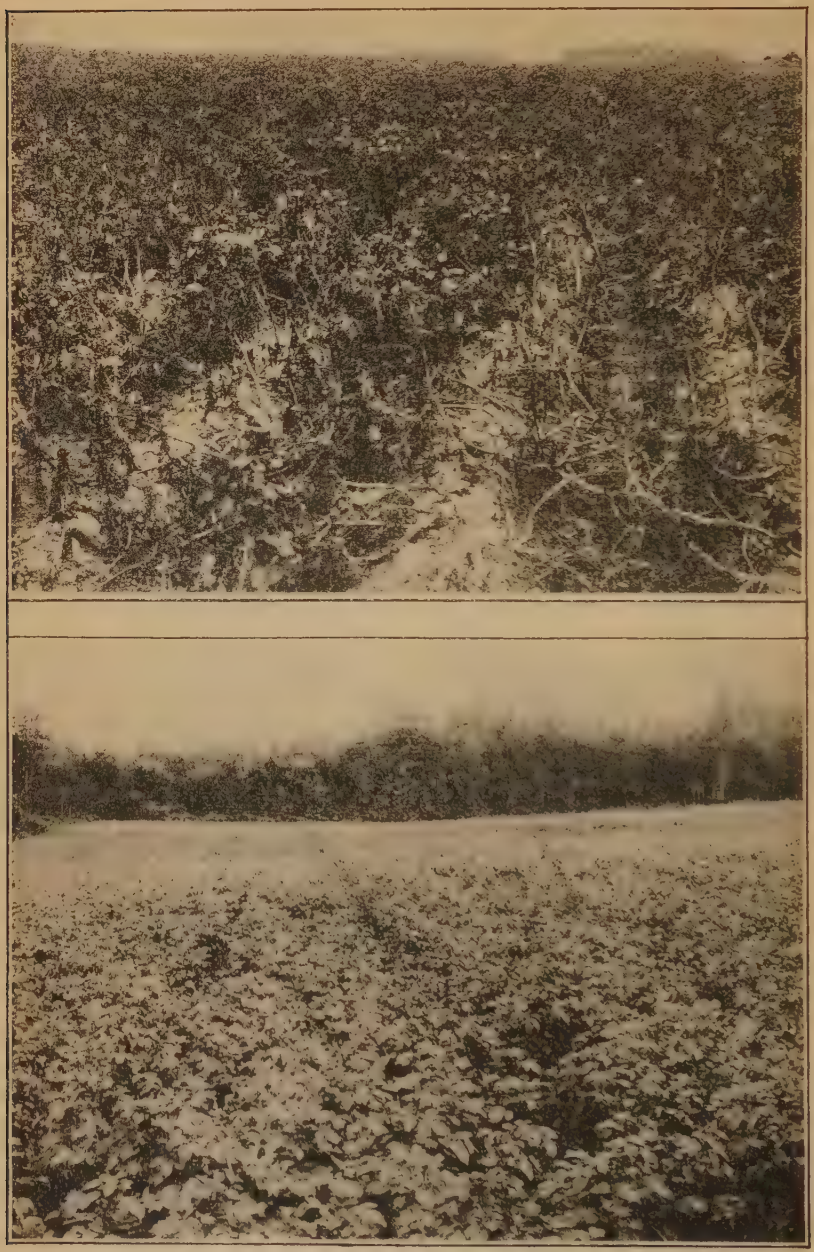


FIG. 254.—To be effective, spraying must be thorough. Upper picture shows failure to control potato late blight by spraying with average care in mid season only. Lower picture shows perfect control by thorough and frequent spraying throughout the season

pect of its increasing use in the future as both the dust fungicides and methods of applying them are improved, together with a reduction in the cost of materials. Its principal use at the present time would seem to be for those instances where the extra cost of the dust and its lower efficiency in disease control are more than offset by the lessened costs of labor for application. This would be true in cases where water for spraying must be hauled long distances. For small areas also dusts are especially useful, since hand dusters are more effective and less expensive and get out of order less frequently than hand sprayers.

Wild Host Eradication

Recent scientific investigations have shown that certain wild plants or weeds which are attacked by the diseases of vegetable crops are the most important factors in the overwintering of the disease organisms which furnish the spring sources of infection. The eradication of these host plants is, therefore, a most important step in obtaining effective control.

In the case of cucumber mosaic, first, the wild cucumber, then the common milkweed, the pokeweed, and the perennial ground cherry were found to be overwintering hosts from which the disease was carried in the spring to near-by cucumber fields by striped beetles. Experiments extending over several years have shown that destroying all such weeds in and around the fields for a distance of 50 to 75 yards is the most effective control yet discovered for the prevention of cucumber mosaic and reduces losses to a minimum even in badly infested localities. This method also has the advantage that its effects are cumulative from season to season.

It is significant that the cucumber mosaic virus lives over winter in the seed of the wild cucumber to a considerable extent, though not in the seed of the cultivated cucumber in sufficient amount to be of great importance. In the case of the other wild hosts mentioned, however, the disease lives in the underground roots and stems.

The same method of wild host eradication has been found very effective in Indiana in the control of a similar mosaic disease of tomatoes. Here it is also very important to eradicate all tomato mosaic host plants from the vicinity of the seed beds or greenhouses where the young plants are grown, in order that infection may not take place at this early stage in their growth, since the results are always more severe as a result of early infestation.

Studies by Pritchard and Porte [19] have similarly shown that the Septoria leaf-spot disease of tomatoes also attacks certain related weeds, particularly horse nettle and Jimson weed, which occur abundantly in the tomato fields in many sections. The careful plowing under of these weeds in the fall, together with measures for their eradication, will materially assist in the control of leaf spot by removing its principal means of living over winter.

Importance of Insect Control

Many recent investigations have emphasized the importance of insects in the overwintering and spread of plant diseases and thereby

[19] See footnote 12.

made more necessary their control as part of a complete disease-control program. These facts have been especially worked out in connection with studies of the numerous mosaic diseases of truck crops.

There are two principal ways in which insects are concerned in the overwintering and spread of plant diseases; in the one they act merely as physical agents which carry the disease organisms, spores, or virus from plant to plant on their feet or mouth parts; in the other case the insects themselves act as reservoirs of infection, often carrying the disease agents in their bodies for a considerable length of time, in some instances over winter, and then transmitting them to cultivated plants again in the spring.

The discovery that the striped cucumber beetle and the common plant louse or aphid are important agents in the transmission of mosaic from its wild hosts to the cucumbers and in its spread from plant to plant in the field, combined with the additional fact that the beetle has also been proved to be the only known overwintering place of the cucumber wilt organism, as well as its most effective agent of dissemination, has brought the entomologists to the assistance of the pathologists in renewed efforts to discover improved means of controlling these doubly important enemies of the cucumber grower.

In like manner aphids have been convicted as spreaders of the mosaic and other virus diseases of potatoes and next to the procuring of seed free from virus diseases, the suppression of attacks of these insects constitutes the most important means of reducing the spread of these troubles from adjacent diseased fields to disease-free fields and their dissemination within the fields. The additional discovery that what under ordinary circumstances would be considered good insect control is not sufficient to prevent disease transmission which may be accomplished by a very small number of insects, has emphasized the importance of the greater perfection of insect-control measures and materials. It has also furnished even more conclusive evidence of the necessity for the entomologist and the plant pathologist to cooperate more fully and effectively in the effort to protect the Nation's food supply from the depredations of insect and disease enemies.

Plant Inspection and Quarantine

Plant inspection and quarantine measures, discussed elsewhere in this article, are proving a valuable addition to the methods of controlling vegetable diseases not only in preventing the spread of the diseases already established and limiting their distribution but also in the exclusion of vegetable diseases of foreign origin not yet introduced into this country. Under the Federal and State quarantine laws numerous diseases of great potential danger to our vegetable industry are being either isolated or kept out of the country by this quarantine service. Under the operation of these laws the additional introduction and distribution of the European potato wart disease was apparently prevented, as no new discoveries of its occurrence have been made outside of limited areas in Pennsylvania, West Virginia, and Maryland, where it had become established prior to the passage of the quarantine law. State laws requiring the inspection and certification of tomato, sweet potato, and other plants

for freedom from disease as a prerequisite to shipment are of increasing importance in the protection of purchasers and in the prevention of disease distribution.

Organization for Disease Control

Although most, if not all, of the disease-control methods here discussed can be put into practice by vegetable growers on their own initiative, yet some of them have not been tested in many places, or have failed of general adoption for many reasons.

In numerous instances it has been found possible and profitable to introduce certain measures as a regular practice into communities where they were not in general use, through organized cooperation among farmers. As an example may be cited the intro-

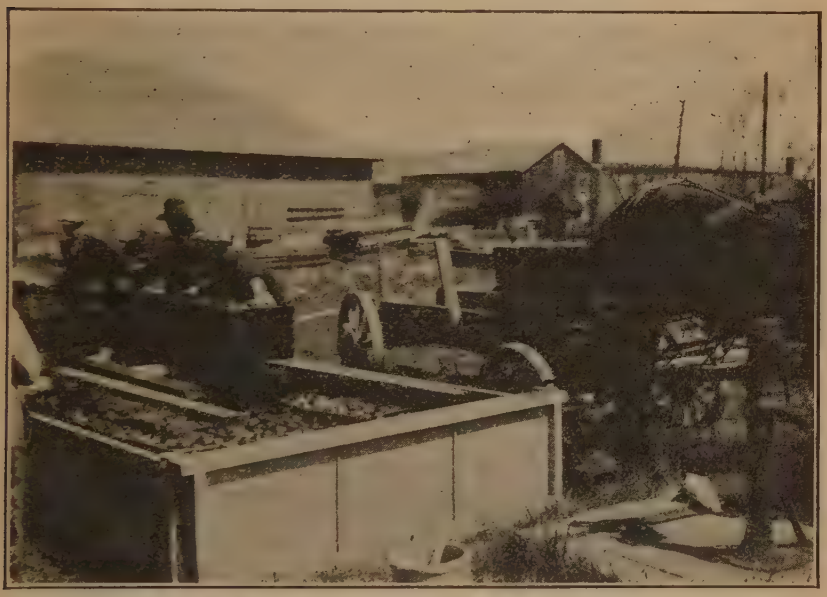


FIG. 255.—Community seed treatment of potatoes in Wisconsin for controlling scab, Rhizoctonia, and other diseases

duction of potato-seed treatment to kill seed-borne disease organisms through the establishment of central seed-treatment plants to treat all the seed of a community (fig. 255). Not only can the work be done more economically in this fashion but it can be more closely supervised, thus insuring the correct preparation of the solutions and the most accurate timing of the treatment. In this way maximum disease control with minimum seed injury is obtained at minimum cost to the farmers in time, money, and materials.

The centralized community treatment of cabbage seed in mercuric chloride solution for the control of black leg and black rot has also been carried out in localities where this crop is grown on a commercial scale. In some instances commercial seed houses have advantageously applied this or the hot-water treatment prior to distribution of the seed through the usual trade channels.

The formation of spray rings, mentioned elsewhere, for the purchase of spray equipment and materials and the employment of an experienced operator to spray potatoes or other crops for the control of diseases is another instance where cooperation organized among several farmers through the effort of the county agent or extension pathologist has resulted in great increases in the use of an effective disease-control method. This applies especially to farmers with too small an acreage to make it economical for them to purchase the most effective types of sprayers.

Disease-Control Methods During Marketing

The determination of the causes of losses in the shipment, marketing, and storage of vegetables, and the development of special methods of controlling them and thus reducing damage, constitute a line of investigation very distinct from that of field damage from disease, though in some respects closely related to it. Prior to the inauguration of the pathological phases of the food products inspection service during the war period, relatively little systematic study had been given to this important subject. In the short time since these investigations were begun, much has been accomplished in the differentiation of the types of disease losses found and the determination of their causes, and in the increasing of our knowledge of the conditions under which these losses are most serious. Considerable progress has also been made in the reduction of these losses, through the readjustment of methods of growing, handling, shipping, and storing, and in the changing of marketing methods. However, this initial work has opened up a large field of research and focussed attention on many important and intricate problems which require solution before adequate control measures can in many instances be formulated and put into practice.

One of the fundamentally important results of the concentration of interest on the problems of transit and storage losses is the increasing realization that fruits and vegetables are parts of living plants and as such continue after harvest to carry on certain life processes and are markedly influenced in their keeping qualities by the conditions under which and the care with which they are grown, harvested, and shipped. Though much remains to be done before practical control measures for many transit troubles are worked out, some of the more important consist of field control measures, careful handling, proper grading, protective treatment, temperature control, and shortening the transit period.

Field disease-control measures.—All of the methods of disease control used in connection with the successful growing of vegetables are now recognized as fundamentally important in relation to the marketing problem, since the degree to which they are successful in controlling diseases determines the character, quality, and freedom from disease of the product, which in turn are primary considerations in successful marketing. Watermelons that are well matured on healthy vines in fields where anthracnose has been successfully controlled by thorough spraying with Bordeaux mixture, other factors being satisfactory, will arrive in market free from loss through this disease and of excellent quality. On the other hand, shipments in which anthracnose occurs may suffer severe losses due

to decay from this trouble alone, or may be of inferior quality because the vines were killed by the disease before the melons matured.

Careful handling.—The importance of careful handling to avoid or prevent mechanical or other injuries to the produce during all stages of harvesting and shipment can not be too strongly emphasized since every break in or injury to the skin of a vegetable or fruit furnishes a possible point of entrance for decay-producing organisms which are ever present. Injury due to rough handling of potatoes, cuts, fork wounds, bruises, the breaking off of second-growth knobs, and splitting are responsible for a large amount of fusarium rotting of the crop in transit and storage, while stock allowed to scald in the hot sun after digging is frequently damaged by slimy soft rot in transit, often to the extent of total loss.

Proper grading.—Proper grading is essential to the best marketing practice, not only because it calls for discarding unmarketable produce and obtains greater uniformity of pack and quality, but also because diseased and bruised produce is eliminated in the process and in this way the centers of disease infection for the healthy portion are often largely removed, and the assurance of its reaching market in sound condition is thereby decidedly increased. Not only are potatoes moderately affected with late blight rot likely to decay in transit and storage, but bruised and cut tubers shipped with them are also more liable to become affected with this or other tuber decays than are uninjured ones.

Protective treatment.—Certain protective treatments have in some cases been found essential to insure the crops arriving in market in good condition or to prevent heavy losses in storage. In the case of watermelon stem-end rot the application of a fungicidal paste to the freshly-cut stem as the melons are packed in the cars, together with careful handling, is a most important means of preventing heavy losses from this trouble, and in certain sections of the country, particularly the Southeastern States, it should be regularly applied. Likewise, the curing of onions or onion sets prior to storing, either through stacking in shallow trays in the field or by exposure to artificial heat in a regular drying house, is an important procedure to reduce losses from neck rot and other decays.

Temperature control.—Fruits and vegetables can be kept in fresh marketable condition and the losses from decay in transit decidedly reduced by means of refrigeration. The same applies to the holding of these products in cold storage. By maintaining relatively low temperatures during the transit period not only is the life activity of most disease organisms retarded, but also the ripening of the products themselves. In the case of some of the fresh vegetables such as celery and lettuce shipped from warm climates, it has been found profitable to precool them prior to shipment under refrigeration, both for the purpose of improving their condition and to prevent losses due to decay in transit. Many factors having to do with the control of diseases in transit and in storage must be taken into consideration in the marketing of perishable vegetables. In the shipment of potatoes, for example, special care must be exercised to prevent the development of black heart, a nonparasitic trouble due to storage at too high a temperature and with too little ventilation.

High temperatures combined with high humidity in general promote the rapid maturity of the product and at the same time furnish the most favorable conditions for the development of many field-disease organisms which cause transit losses.

Shortening transit period.—Regardless of the care exercised in the growing, harvesting, and handling of perishable vegetables there is the continuous process of ripening and susceptibility to loss from disease to be reckoned with. It is readily evident, therefore, that any delay in transit or in the lengthening of the time required for the produce to reach the consumer increases the chances of losses, thus making prompt transportation and marketing one of the essential factors in the prevention of losses from diseases.

Insects in Their Relation to Vegetable Culture

Economic Importance

Insects are among the most serious and persistent enemies which must be faced by the vegetable grower. In one form or another insect pests attack his crops as soon as the seed is planted, continue their ravages during their growing period, and finally destroy some of the products after they are placed in storage. Estimates of the actual money damage caused by the insects affecting vegetable crops vary between $120,000,000 and $240,000,000 per annum. These figures are based on an estimated loss of between 10 and 20 per cent of the total crop value.

The economic importance of insect pests is steadily increasing along with the extension of the vegetable industry to new areas, and in addition the crops are exposed to attack by insects not previously recognized as vegetable pests. It is reassuring, however, to note that control measures, although not completely suppressing the insects, have made possible the production of satisfactory crops. While it is admitted that vegetable crops are particularly susceptible to insect injury, it is doubtful if it is correct to estimate that the damage by insects actually amounts to 20 per cent of the total value of vegetable crops, even when the admittedly high-priced control methods are included. In computing average insect damage to vegetables over a period of years, it is probable that a figure of $175,000,000 loss each year furnishes a fair estimate.

Aside from such injury as may be stated in terms of money, there are other losses which, though difficult to estimate, are an added tax and worry to the consumer as well as the grower of vegetables. These include the limiting effect of insects on the growing of crops in areas adjacent to the most satisfactory markets. Continual insect injury leads the grower to cease the growing of crops which, from the market standpoint, should continue to be produced. This factor alone means that certain vegetable products are either not readily available in such markets or that they must be imported from greater distances, a necessity which adds to their price and may impair their quality, especially in the case of crops in which freshness is important. In addition to this, the attacks of some insects reduce the quality of the crops without materially affecting their appearance. The work of the pea aphis on cannery peas in reducing the sugar content is a fair example of injury caused by moderate infestation by

an insect which only a few years ago was rated as having little effect on the crop.

Another source of loss from insect attack is secondary and caused by the easy entrance of disease spores into vegetable products which show only slight insect injury. In this way products which are readily marketable may decay much earlier than they would in the absence of insect injury. Insects attacking vegetables, therefore, not only cause a heavy direct loss, but in addition are an ever-present annoyance and tend to influence the quantity and quality of production, regardless of market needs.

The Vegetable-Insect Problem

The constantly varying nature of vegetable production makes it almost impossible to foretell insect abundance and this factor adds greatly to the difficulty of controlling insect pests. The grower of orchard fruits or other perennial plants knows that the insects which may trouble his plantings belong to definite groups appearing at more or less regular periods, and he is thus prepared for the application of remedies. In the case of vegetable crops not only is there great variation in the character of plantings, but the date of planting is often changed to take advantage of favorable market conditions. These factors expose vegetables to attack from a wide variety of insects over practically all of the growing period and thus greatly increase the insect hazard. Not only is the forecasting of insect abundance one of extreme difficulty, but many vegetable growers, especially home gardeners, do not possess an adequate supply of insecticides and machinery for their application to control insect pests in an efficient manner. Moreover, a large part of the home-vegetable gardening is done by people who are busy with other duties and have not the time for regular inspections of the garden or to apply such remedies as are available at the time insect injury begins. The commercial truck grower generally has access to insecticides and information on their proper application. It must be borne in mind that, according to estimates, the value of farm and home gardens is between $300,000,000 and $400,000,000 a year, and that these gardens present an important factor in the spread and lack of control of insects.

Nature of Injury

Insect injury is of two general types: (1) Chewing insects, which consume parts of the plants, and (2) sucking insects, which feed only upon the juices of the plants. In both cases severe injury results in the death of the plant, while moderate injury influences the size and quality of the crop. The first type of injury is conspicuous, while the second type may only become apparent when the plant is almost dead. The first seasonal insect injury on annual plants is to the seed or seedling plants. The pests chiefly responsible for this work are known as general feeders in that they are not limited to a few crops for their food supply. Such insects are usually present in the soil, and the crop which suffers from damage is the one which happens to be growing at a time when the insects are most active. The majority of these belong to the group of chewing insects, and

include such well-known pests as wireworms, cutworms (fig. 256), white grubs, and springtails. Under conditions of severe attack the seedling plants are destroyed and if replanting is not practiced the remaining stand is generally poor and the crop reduced.

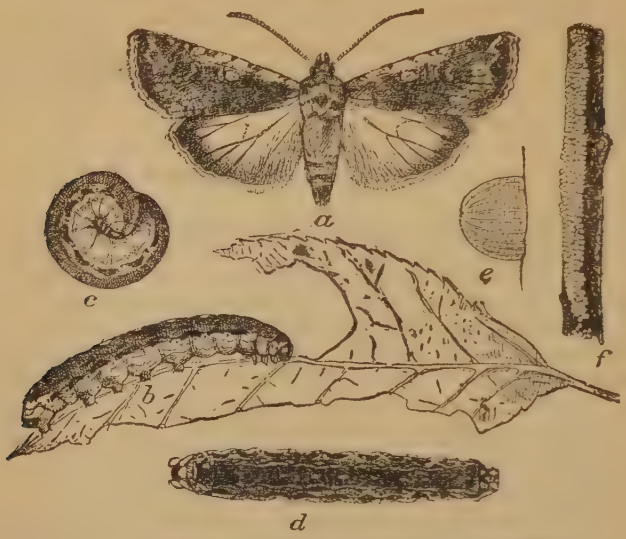


FIG. 256.—Variegated cutworm (*Peridroma margaritosa*): *a*, Moth; *b*, normal form of caterpiller, side view; *c*, same in curved position; *d*, dark form, view of back; *e*, greatly enlarged egg, seen from side; *f*, egg mass on twig. (Howard)

As the plants develop, they are exposed to a still larger group of enemies, some of which are more specific in their feeding habits in that they attack only plants belonging to certain botanical groups. These insects may kill the plant if they are present in great numbers.

FIG. 257.—Adult blister beetles, enlarged: Left, black blister beetle; middle, margined blister beetle; right, striped blister beetle. (After Chittenden)

Moderate infestation may deform and weaken the plants and reduce their yield and quality. There are also such general feeders as army worms, grasshoppers, and blister beetles (fig. 257) present during the growing period. These omnivorous but more or less periodical

insects join with other pests to reduce or destroy the crop. As the fruiting period approaches, many species of insects are present, and some of the fruit or marketable portions of the plants are either destroyed or reduced in value through direct (fig. 258) or indirect attack.

FIG. 258.—Characteristic work of the tomato fruitworm. (Quaintance and Brues)

The final group of insects to trouble the vegetable grower are those which attack the stored crop (figs. 259 and 260). Many of these are specific in their feeding habits and include such well-known pests as the bean and pea weevils, the potato-tuber moth, and the sweet-potato weevil.

FIG. 259.—Injury to potato by the immature stages of the tuber moth

Aside from the direct injury caused by their feeding, insects are also the cause of severe indirect injury through the dissemination of plant diseases. Some diseases can only be transmitted by certain

insects, others may be carried from diseased to healthy plants by several different pests, and still others are actually carried over the winter within the insects themselves. The study of the transmission of plant diseases by insects is relatively new, and much remains to

FIG. 260.—Sweet potato weevil injury to stored sweet potatoes

be learned. From our present knowledge, it appears that insects are responsible for the field dissemination of many serious diseases, and they are indirectly the cause of heavy crop losses in hastening the spread of diseases.

FIG. 261.—The two types of insect mouth parts: *a*, Chewing type of the Colorado potato beetle; *b*, sucking type of the Harlequin cabbage bug

Insect Groups

Vegetable insects may be grouped as sucking or biting insects from their way of feeding (fig. 261), as imported or native pests

from a consideration of their original home, or as general or specific feeders if considered from the viewpoint of their food habits.

The chewing insects include the beetles, grasshoppers, crickets, caterpillars—which are the larvæ of butterflies and moths—and such rasping insects as maggots, which are the larvæ of flies. Beetles, which are most destructive to vegetables, include among others the cucumber beetles (fig. 262), the Colorado potato beetle (fig. 263), flea beetles (fig. 264), Mexican bean beetle (fig. 265), blister beetles, the sweet-potato weevil, the larvæ of click beetles (wireworms), and May or June beetles (white grubs). Grasshoppers and crickets are always present in small numbers, but may effect serious outbreaks when conditions favor their great increase. Caterpillars rank with beetles as the worst pests with which the vegetable grower must contend. The principal representatives of this group include the cutworms, cabbage worms (fig. 266), tomato worms (hornworms), (fig. 267), the corn earworm, army worms, webworms, leaf tyers

FIG. 262.—The striped cucumber beetle (*Diabrotica vittata*): *a*, Beetle; *b*, larva; *c*, pupa. Much enlarged. (Chittenden)

(fig. 268), and various other caterpillars. The most important maggot enemies of truck crops are the cabbage (fig. 269), onion and seed-corn maggots. All of the chewing insects consume parts of the plant either above or below the ground and their injury consists either in injuring the root system, consuming the foliage and stems, or destroying the fruit.

Sucking insects are those which obtain their food by sucking the plant juices. The insect's beak is inserted into the plant tissue and the only external mark which remains may be an inconspicuous spot not visible to the casual observer. The principal direct result of this feeding is a stunting or distortion of the plant with a yellowing or browning of the foliage. Insects belonging to this group are the aphids or plant lice (fig. 270), the minute, green, brown, or black individuals which are generally found in colonies on the stems or leaves, and the true bugs which include the squash bug, the harlequin cabbage bug (fig. 271), the tarnished plant bug, and others. Aphids occur in such an abundance of species that few vegetable crops are free from their attacks, many crops being subject to injury from several different kinds. Red spiders, although not true in-

sects, obtain their food by sucking plant juices and are considered with sucking insects. These troublesome pests attack a wide variety of plants, weakening and distorting the growing tip, and yellowing and destroying the leaves.

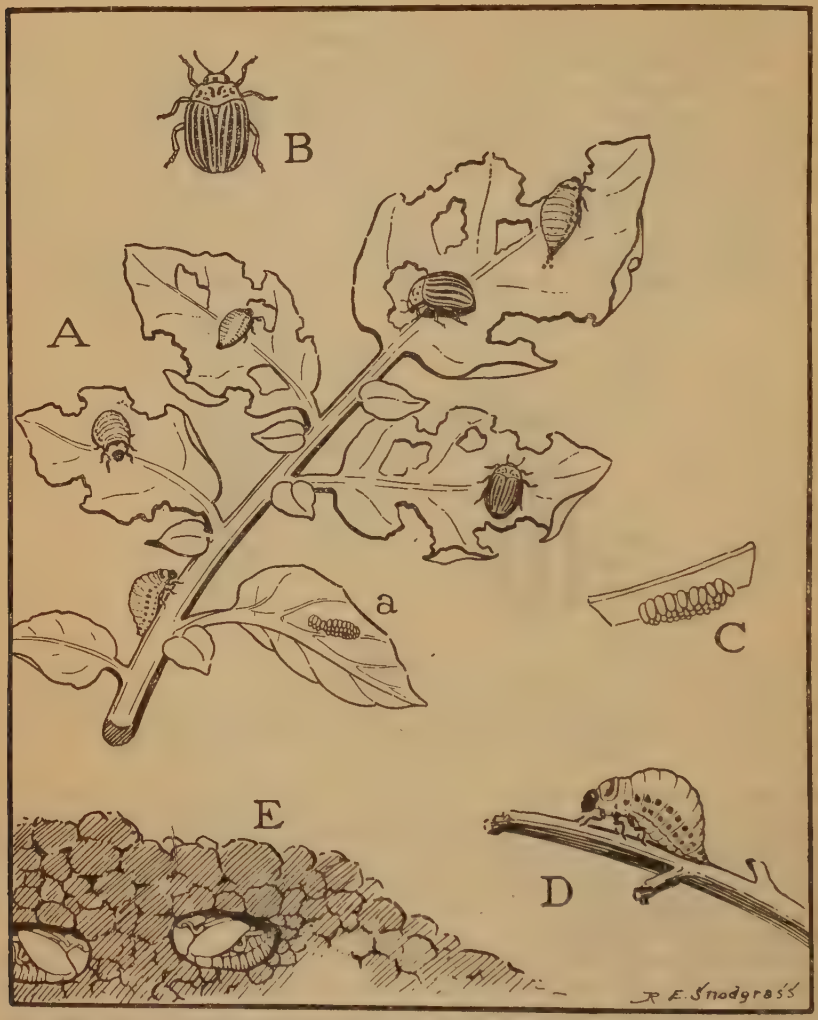


FIG. 263.—The Colorado potato beetle: *A*, Potato leaf showing feeding marks and eggs, larvæ and adults; *a*, eggs on underside of potato leaf; *B*, adult; *C*, eggs, enlarged; *D*, larva or slug; *E*, pupa in soil in pupal case

Native and Imported Insects

With the importation of vegetable varieties incident to the development and expansion of the industry, many truck-crop pests found their way into this country in the same manner as did fruit insects. Few insect pests have been imported which attack such native plants as corn and potatoes, but imported crops, like cabbage and peas, are each subject to attack by several imported enemies. Of the pests af-

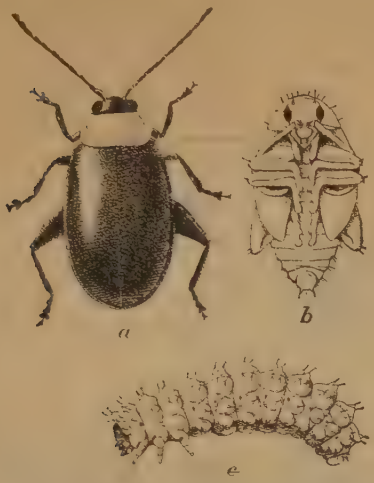


FIG. 264.—The beet, or spinach, flea beetle (*Disonycha xanthomelæna*): *a*, Beetle; *b*, pupa; *c*, full-grown larva. Five times natural size. (Chittenden)

FIG. 265.—Adults and larvæ of Mexican bean beetle on underside of bean leaf, showing areas eaten by adults. Slightly enlarged. (N. F. Howard)

fecting cabbage, 10 were imported, including the cabbage worm, webworm, root maggot, diamond-back moth, aphis, flea beetles, curculio and stalk weevil. Other vegetable-feeding insects which have been introduced into the United States include such primary pests as the bean and pea weevil, broad-bean weevil, pea aphis, pea moth (fig. 272),

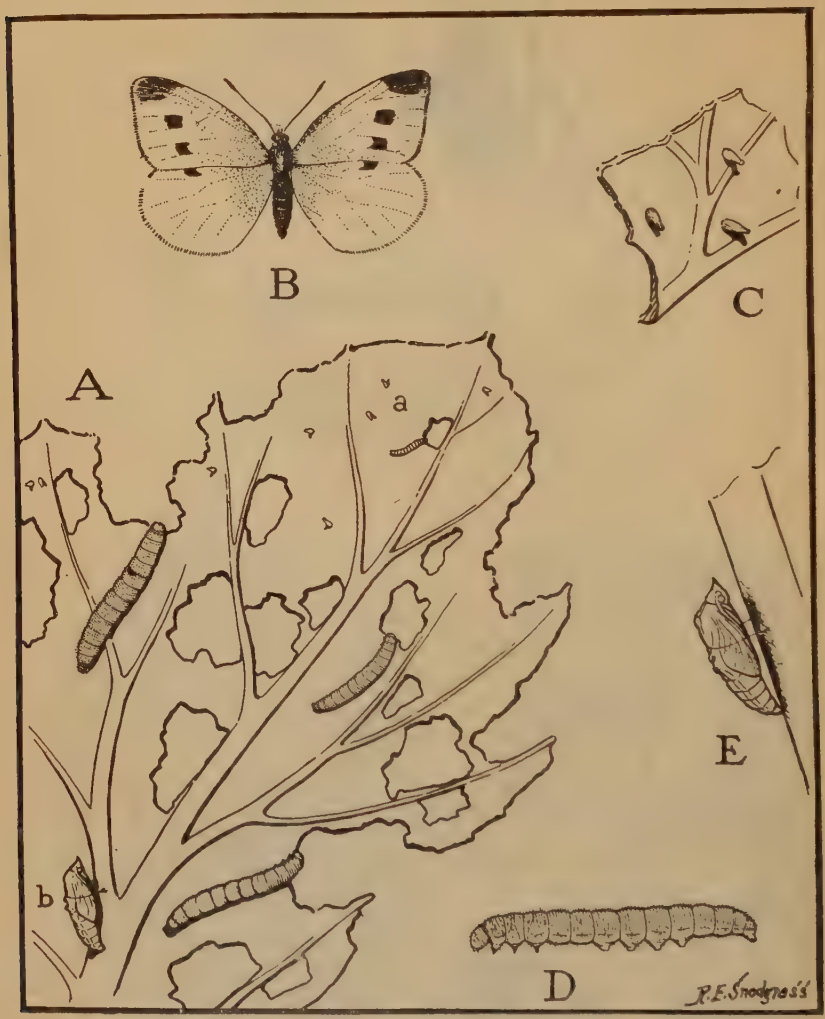


FIG. 266.—The cabbage worm: *A*, Cabbage leaf, showing injury by cabbage worm; *a*, eggs; *b*, chrysalis; *B*, butterfly; *C*, eggs, enlarged; *D*, worm or larva, enlarged; *E*, chrysalis

onion maggot, seed-corn maggot, asparagus beetle, carrot rust fly, sweet-potato weevil (fig. 273), and sweet potato cutworm, in addition to several snails and slugs. The most outstanding native pests include general feeders, such as cutworms, blister beetles, cucumber beetles, May beetles, wireworms, and army worms, in addition to many more specific feeders. In reviewing the primary insect enemies

of vegetables, it is found that a high percentage of them are native to this country. In the case of the native species, however, parasites and other agencies of natural control are so active in their suppression that they are seldom present in seriously injurious numbers for any considerable number of years in succession. In the case of a large number of the imported insects, control by natural agencies is not so completely developed and the losses caused by these pests as a group, are more recurrent in nature and thus constitute a regular tax on the vegetable grower.

In addition to the two classes of insect pests listed above, there are several which are of North American origin but which have invaded the United States from adjoining countries. Examples of this group are the Colorado potato beetle, Mexican bean beetle, harlequin cabbage bug, pepper weevil, and others. The invasion of these insects has been a slow process of dissemination and was

FIG. 267.—One of the tomato hornworms: *a*, moth; *b*, larva; *c*, pupa. (Chittenden)

made possible by the extension of the cultivated areas and the widespread planting of crops on which the insects could live. The Colorado potato beetle may be accepted as the best example of this group of invaders. This insect was undoubtedly of Mexican origin but at the time the western part of the Mississippi Valley was settled it was present at points along the eastern base of the Rocky Mountains. At this time it was known to feed on buffalo bur (*Solanum rostratum*) and was of no greater importance than any other insect which was associated with wild plants. The early settlers planted potatoes, and as these plants belong to the same botanical family as the buffalo bur and were more succulent and abundant, the insect readily transferred its attention to them. It spread eastward from field to field, finding congenial conditions and carefully cultivated food plants, and by 1865 had reached the Mississippi River. Its steady march continued and by 1874 it had reached the Atlantic seaboard. Its range of infestation now covers the entire eastern United States, with the exception of a part of Florida, and it has somewhat recently crossed the Rocky Mountains and invaded Wash-

ington, Oregon, and some neighboring States. This case plainly shows that the opening of new areas to cultivation may jeopardize crop groups by making it possible for localized pests of wild food plants to extend their range and adjust their food habits to closely related cultivated crops.

FIG. 268.—Injury caused by celery leaf tyer

Insect Groups as Related to Food Habits

Insects vary greatly in their choice of food. Some, as previously stated, feed on a wide variety of cultivated plants and herbs whereas others feed upon a limited number of closely related plants. The first group of insects may roughly be divided into two classes—those which are closely associated with the soil and are therefore fairly well fixed as regards location, and those which are capable in their injurious stage of moving freely from field to field. The

first class is composed largely of cutworms, wireworms, white grubs, and mole crickets, among true insects, and slugs (fig. 274) and snails from another group of animal life. Their presence or absence in a field is not largely dependent on the variety of the crop planted as they feed upon a wide variety of plants. These pests are generally in the injurious stage at the time the seed is planted or at the

FIG. 269.—Radishes showing cabbage maggot injury

latest, by the time the seedling plant is beginning growth. Conditions are therefore encountered in which the insect is feeding heavily at the same time that its food plants are small, tender, and readily injured. Under these conditions there can be only one result—many plants are killed outright and if the crop is not replanted, the stand is thinned and the final yield is low. If injury appears at an

early period, it is possible that conditions may still be favorable for replanting, but this expedient will not suffice until after the pests have transformed into another stage in which they are not injurious.

General feeders belonging to the free moving class include such insects as blister beetles, flea beetles, grasshoppers, army worms, and corn earworm, and are capable of invading a field suddenly and causing heavy damage. Their coming can seldom be forecast in time to influence the date of planting or to permit the selection of

FIG. 270.—The pea aphis on peas

less susceptible crops. Many of these insects are attracted to the well-developed crop and are therefore seldom to be found when the plants are in the seedling stage. If large plants are attacked, the insects must necessarily be present in great numbers to cause injury so serious that the plants may not recover and produce a commercial yield. The fact that the injury often occurs over a considerable period of time generally permits the application of control measures, but where this is not done, the loss is relatively heavy, since a favorable time for replanting has usually passed and if the ground is not to remain vacant for the duration of the season, either a catch crop

must be planted which will yield only partial returns, or the original crop must be replanted with its short season and almost certain short crop.

It is a difficult matter to state exactly the specific food habits of insect classes, since these vary with the individual insects and may even be changed by different seasonal conditions or crop succession. Thus, the insect which is so injurious to the ears of corn and known as the corn earworm is the same insect which is destructive to tomatoes, and is then known as the tomato fruitworm. In this case a single insect is a primary pest of two vegetable crops which botanically are quite dissimilar. On the other hand, an insect may be a secondary or noneconomic enemy of one cultivated crop and later become a primary pest of another crop totally unrelated to

FIG. 271.—Harlequin cabbage bug

the first. Such a case is illustrated by the onion thrips, which may reproduce on cabbage but never attain injurious abundance; yet if onions are planted adjacent to cabbage fields, the insect may invade the planting and cause considerable damage.

Insects which are more specific in their food requirements generally limit their feeding activities to a few vegetable crops in the same botanical class or closely related thereto. It is found, for example, that most insect enemies of potatoes may also attack tomatoes, eggplant, and sometimes tobacco and many of the uncultivated nightshades, all of which belong to the same botanical family. In a similar way, many of the insects injurious to cabbage feed also on kale, cauliflower, collards, turnips, and radish. Cucumbers, melons, squash, and pumpkin form another plant group which is susceptible to attack by the same insects. Although insects may be

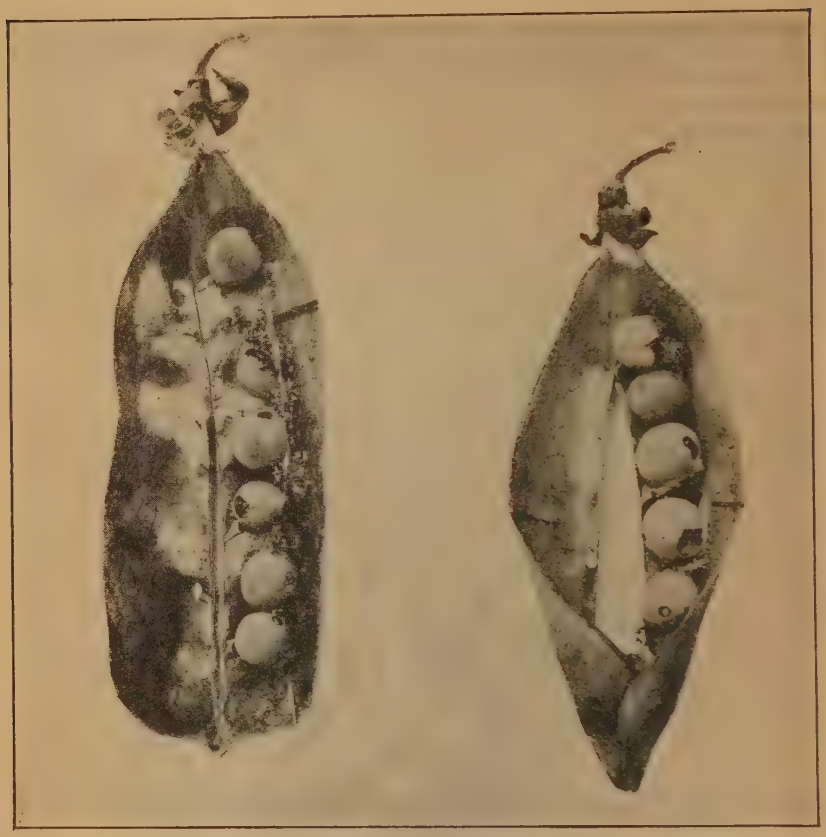


FIG. 272.—Pea moth injury

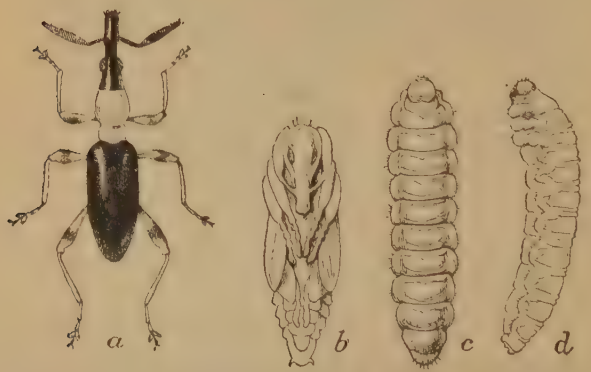


FIG. 273.—The sweet-potato weevil (*Cylas formicarius*): *a*, Beetle; *b*, pupa; *c*, larva; *d*, side view. Much enlarged. (Chittenden)

pests of several related plants, there are generally only a relatively few crops on which the insect is of economic importance. The remaining crops are really secondary hosts on which the insects may reproduce but not by preference, and when restricted to them, seldom attain injurious abundance.

FIG. 274.—Slugs on lettuce

Local Spread of Insects

The dissemination or local spread of an insect is largely dependent upon its activity in one or more of its stages. In some cases the extension of the infested zone takes place at a regular rate, but with other individuals there may be a wide spread in one direction and practically none in another. Local conditions, including hibernating quarters, may have much weight in determining the distribution

of an insect. Such factors are especially noticeable in the case of the Mexican bean beetle, a pest in both the Eastern and Western States. The distribution of this insect is greatly influenced by the necessity for satisfactory hibernating quarters. Since wooded highlands are apparently necessary for its successful hibernation, it could be concluded that the bean beetle would be less restricted in the East with its many wooded hills than in the West where wooded hills are not general. Such is the case, for in 50 years under western conditions the bean beetle has extended its range only slightly, while 5 years under eastern conditions have enabled the insect to extend its range from Birmingham, Ala., to Lake Erie.

Climatic conditions may affect the direction and distance of spread. Most insects fly with gentle winds and therefore the direction of the prevailing winds during the time of flight is of great importance. Few insects are on the wing when the wind is strong, but sudden and violent storms may scatter them over several miles. Most of the vegetable pests which fly readily may spread from farm to farm and, for this reason the adoption af clean culture methods may be partially nullified by slipshod methods on adjoining farms or in cases when infested wild plants are near at hand. In order to understand the dissemination of insects and to be able to foretell possible invasions, a knowledge of the lifehabits of the species concerned and its reaction to its surroundings is necessary.

Aside from their own flight, insects are carried over long distances by outside agencies, such as floods and the common carriers of commerce. Those insects which are associated with the fruit of their host plants are often transported over long distances with shipments of fruit or seeds. Some insects, like the corn earworm, are carried in corn and tomatoes and leave the fruit to complete their development, but others, like the sweet-potato weevil, potato-tuber moth and some of the bean weevils, may breed through additional generations in the stored product. Development in this manner enables the insect to pass the winter safely, increase its numbers, and finally issue to attack the growing crop, often at some distance from its place of origin the preceding year. The general distribution of insects, which already occur widely over the country, probably has little effect on their abundance, but commercial intercourse often is the means of introducing new pests, and of assisting their rapid dissemination.

As already noted, many of the serious vegetable insect pests are of foreign origin and were presumably introduced with shipments of plants or were introduced with merchandise before the adoption of quarantine laws and port inspection. Aside from the mere introduction of foreign insects, the rapidly increasing rate of commerce and transportation has served to hasten the dissemination of those whose distribution had heretofore been restricted. Numerous examples of such widespread dissemination have occurred in the case of some important vegetable pests. Although the Mexican bean beetle undoubtedly invaded the southwestern United States from Mexico, its appearance in the Southeastern States was not the result of its own spread but rather of a so-called "commercial jump." In like manner the appearance of the potato-tuber moth on the Virginia coast probably resulted from the importation of the insect either

from the West or from some foreign country. The pepper weevil, originally introduced from Mexico, furnishes an additional example of the commercial spread of an insect in its jumps into New Mexico and quite recently into California.

Evidence indicates that a majority of these long-distance invasions have resulted from the carriage of the insect from one place to another in agricultural products, but these do not furnish the only means of insect transportation, for flying insects, particularly those which are active during the day, may find lodgment in moving vehicles, including cars and boats, and be carried some distance. The general use of automobiles and their utilization for long trips makes it not only possible but probable that insects are materially aided in their distribution in this manner.

Multiplication of Insects

Insects attain their tremendously destructive possibilities through their extreme rapidity of multiplication. Though many succumb each winter, their increase is so rapid that, given favorable climatic conditions and an abundance of food, many species are numerous enough to be of economic importance by spring or early summer. Insects affecting vegetables exhibit a wide range as regards rapidity of development and multiplication varying from some of the wireworms, which require three years to complete a life cycle, to some of the aphids, which may complete 12 to 16 life cycles in a single year. As a general rule, most of the insect enemies of vegetables pass through from one to four generations a year, depending principally upon the group to which they belong and to a lesser extent upon climatic conditions. The number of eggs produced by a single female varies from less than 100 to nearly 2,000, dependent upon the species of insect concerned. Aside from its effect on plant injury, the mulipli-cation of any insect is intimately connected with its spread, since a species which multiplies rapidly and becomes crowded tends to extend its range more rapidly.

Food is a most important stimulus in the life of an insect and therefore plays a most important part in determining the numbers a pest may attain. Wild food plants are especially important in this regard, for they do not fluctuate in abundance as much as cultivated plants, which may vary either with crop rotation or market demands. In addition to their food value, uncultivated plants furnish a favorable winter shelter for many vegetable insects, and they are thus able safely to pass the winter near the source of their next season's food supply. An abundance of food is generally found in the larger trucking areas, but in the case of the home or city garden the more favorable conditions for insect breeding are seldom present throughout the season.

Development of Insects

A knowledge of the habits and development of different insects is necessary in order to insure their control in an economic and efficient manner. It is not sufficient merely to know that arsenicals are the usual remedies for most chewing insects or that nicotine and oil emulsions are good general remedies for most sucking insects. Before intelligent effort can be directed toward the control of an inju-

rious insect, there should be available knowledge regarding its identity and habits, the character of the injury and its relation to the development of the crop or crops attacked. Of these requirements, the most important is a knowledge of the identity of the insect and of its growth, reproduction, and manner of life. The more important steps in the development of insects include hibernation, reproduction, development of the injurious stage or stages, and factors affecting seasonal abundance.

In all parts of the United States, except the extreme southern portion, the insects remain inactive during the colder months of the year. This is probably the most severe test an insect must endure and many of them perish during each winter. Those which are most fragile or short lived in the adult stage, such as flies, moths, and butterflies, generally pass the winter in some immature stage or protected situation, while some of the more resistant forms may overwinter as adults. In most cases the insect seeks some shelter on the approach of winter or as soon as its host plants disappear or become unpalatable, and remains quiescent until warmer weather occurs. Some overwintering insects may become partially active during warm periods, but seldom does an insect leave its winter quarters until the weather becomes mild and food plants appear. Insects as a class may hibernate in any stage of development and under widely diverse conditions. Accordingly, a study of each species or group is necessary in order to determine the exact manner and period of hibernation. Such information is intimately connected with the prevention of infestation by many species and is therefore of great value in crop protection. Conditions which upset normal hibernation methods either by disturbing the hibernating form or exposing it to the weather or its natural enemies greatly increase winter mortality and result in reducing the number of individuals available for spring infestation of the cultivated fields.

The reproduction of insects is as varied as is their hibernation. Each species must be observed in the different regions which it inhabits if reliable information which may help to control it is obtained. As a general rule, insects pass through one or more generations during the active reproductive season. The hibernating stage develops and from this the subsequent stages are produced until winter puts an end to reproduction. Aside from the reproductive possibilities of any insect pest, the time of recurrence of its injurious stage in connection with crop development is an important index in determining the necessity for control measures and in dictating the method to be used, since not all stages of an insect are injurious. As some of the injurious stages are of only minor importance, it sometimes becomes possible to avoid the most injurious form at the time the plants are susceptible to insect damage. A knowledge of the insect's biology and information regarding the maturing of the crop may often suggest proper measures for avoiding losses. The development of cutworms may be taken as an example of this type. Where plants are large and vigorous, the feeding of these pests may only become threatening as the worms approach maturity. A proper knowledge of their growth sometimes shows that they will transform into the harmless pupal form before they have caused sufficient injury to require treatment,

and that the crop may mature before another generation of worms is produced.

Although the reproduction of insects is extremely rapid and may produce an enormous number of individuals, the number of survivors which are available for crop injury is often influenced by natural agencies, including climate, beneficial insects, and disease. The exact effect of such factors is often difficult to foretell but they may be of great importance in indicating the need or uselessness of artificial control measures. In the case of some aphids, notably the pea aphis, the natural control agencies are often the determining factor in successful crop production, for a sudden increase in beneficial insects, or the appearance of an insect disease epidemic, often so reduces the numbers of the pest that the crop may recover from injury and resume normal growth.

General Methods for the Control of Vegetable Insects

Diagnosis of insect injury.—The successful treatment of any disorder affecting plants is dependent on a correct diagnosis of the cause of the trouble. The determination of the exact cause of injury is not always easy. Plant damage may be caused by any one of the factors connected with the growth of the plant or a combination of several such factors. Where injury is of insect origin and affects the aerial portion of the plant, the determination may be readily made if the pests are still associated with it, but this condition does not always exist. Many insects are nocturnal in habit, feeding only at night and hiding in the daytime. Such forms are often difficult to detect and equally difficult to associate with plant injury. Cutworms are the most common example of insects of this type. These insects remain hidden on all but cloudy dark days and emerge to feed at night. They belong to the group of general feeders which attack a wide variety of crops, and since they generally appear at about the time the plants are in the seedling stage or soon thereafter, their injury consists of cutting off the plants at or slightly below the ground level. More plants are injured than are required for food, as one worm may in a single night destroy several plants. The only sign of injury apparent during the following day is a number of partially consumed, wilted, or dying plants, the worm having buried itself in the soil about an inch or more below the surface. The injured plants dry rapidly and an inexperienced observer may never learn the cause, or if the worms are found, they are not always associated with the injury.

Damage by chewing insects is generally conspicuous (fig. 275), and unless the plants are small and tender, some time is usually available for the application of control measures. Sucking insects, on the other hand, are more insidious in their attack, and once the plant shows stunting, yellowing, or wilting, the injury is already very pronounced (fig. 276) and often control measures are only partially effective, since the plant, even when freed of insects, may be unable entirely to recover and produce a full yield.

Injury by stem borers often may be detected by a stunting, deformation, or wilting of one part of the plant, while the remainder is developing normally. Pests affecting the roots may either stunt or

kill the plant. Unless the injury is severe and some of the injured plants are dug up for inspection, the damage by these insects may escape notice. White grubs and wireworms may kill plants by cutting the roots, and in the case of a heavy infestation of root aphis, the plant wilts during the high temperatures of midday. In the case of potatoes, injury by root feeders may not be discovered before harvest, and while damage to the tubers may destroy only a small part of their food value, the feeding marks of the insects are a great source of loss, since the potatoes bearing these marks are either rendered unmarketable or must be placed in a lower grade with a consequent reduction in price.

The correct diagnosis of insect injury to growing truck crops may often be difficult, but in order that control measures may be effective,

FIG. 275.—Injury to cabbage by the cabbage looper

the grower must have an accurate knowledge of the insect concerned, and such information must be available at a time which will permit the application of remedies before the crop is injured beyond recovery.

Natural control of insects.—In nature insects are exposed to many checks which tend to reduce their numbers. The principal factors which accomplish their destruction include adverse weather conditions, birds and other animals, parasitic and predacious insects, and disease, including fungi, bacteria, and the little understood filterable viruses. With such a widely scattered group of enemies, the insects must necessarily be constantly on the defensive and would become decimated were they not themselves capable of extremely rapid multiplication and fitted to live under a wide variety of conditions. In addition to this, in cultivating a variety of crops in wide areas man has tended to upset natural conditions, thus aiding the most

adaptable forms of animal life, the insects, many of which are his enemies.

Climate affects insects in two ways—it may either reduce their numbers or restrict their economic distribution. The climatic factors of temperature and humidity alone determine the distribution of several vegetable pests. Thus there are found insects, like some root maggots, which are pests only in northern localities where the temperature is not warm over a long period and minimum temperatures are relatively low. On the other hand, insects, like the harlequin cabbage bug and the southern green stink bug, are largely limited to the southern United States, and though individuals often may be found well to the north, they are seldom able to attain injurious abundance there. Humidity alone is an important factor in deter-

FIG. 276.—Onions killed by onion thrips showing whitened appearancce of plants from which the sap has been extracted

mining the distribution of insects such as the sugar-beet leaf hopper, stalk borers, and the melon and pickle worms, since some of these insects are pests only in the humid East, others in the arid West. Although some of the influence of climate on insects may be due to its effect on the food plants in supplying a suitable succession of favorable food plants, there is reason to believe that it also has a definite effect on the insects themselves.

Aside from the limiting effect of climate on insect distribution, adverse climatic conditions exert a great influence on the seasonal abundance of vegetable pests. All species of insects are greatly reduced during winter, even under relatively favorable hibernating conditions, and where the weather is adverse the degree of mortality is increased. Conditions which reduce hiberating insects

include rapid changes in temperature, humidity either above or below the optimum, low minimum temperatures, and storms. Any departure from the normal climate increases insect mortality, the degree of effectiveness being largely dependent on the amount of variation and the rapidity of the change.

After the insect emerges from hibernation the beginning and rate of reproduction are susceptible to the influences of temperature and humidity. In the first place such conditions may have a great influence on the presence or absence of acceptable food plants, and beyond this the weather conditions have an important influence on the rapidity of multiplication of the insect itself. Cool weather or unfavorable moisture conditions may greatly delay the emergence of the pest from hibernation, may retard growth, or delay the deposition of eggs. Moisture requirements for different insects vary greatly, but there is generally less difference as regards the temperatures necessary for insect development. Insects closely related may require very different climatic conditions for their greatest increase, as is shown by the melon aphis and pea aphis. Both insects are primary pests of their respective crops, the former attaining its maximum injurious abundance in the South whereas the latter occurs in destructive numbers in the northern half of the country. Hot, dry weather enables the melon aphis to multiply rapidly, and when such weather conditions occur for a period at a time when colonies of the pest are generally distributed, plant injury is sudden and sure. The pea aphis, on the other hand, prefers moist and slightly cool weather, and several weeks of such weather are usually the prelude to injury in the pea fields, provided, of course, the early infestation has been general.

The effect of weather on delaying or retarding insect multiplication may partially determine insect abundance, but in addition to this, it has a direct influence in killing the insects which may be present in the fields. Excessive summer temperatures may kill the eggs or young larvæ of some insects, and heavy precipitation is generally of great assistance, both in killing insects and in promoting plant growth, so the crop may recover from injury and resume growth. Heavy or regular rains are an important factor in the control of the onion thrips and most vegetable-feeding aphids, since many of these delicate insects, when washed from the plant and imbedded in sand or mud are unable to return to the plant.

Although the direct influence of climate on crop pests may be the determining factor in governing their possible injurious effects, these same weather conditions have an important secondary influence through their bearing on the abundance of parasitic and predacious insects and diseases which undoubtedly are among the most important factors in the suppression of vegetable insects.

In nature, where conditions are not upset by the cultivation of crops, an insect rarely gains ascendancy over its natural enemies, or when this does happen, it maintains its destructive abundance only for short periods. Yet even where cultivation has disturbed environmental conditions, the natural enemies of an insect are of primary importance. Parasitic and predacious insects are among the important natural checks to the multiplication of vegetable pests. The parasites include certain flies and many of the Hymenoptera,

a group to which the bees and wasps belong. The parasites deposit their eggs in or upon some stage of the injurious insect and the larval form of the parasite kills its host.

Predators of primary importance include representatives from several insect groups, as beetles (fig. 277), flies, and lacewings. It is often difficult to separate parasites and predators by a clear-cut line, since their activities may overlap. As a rule, however, the parasite in its development generally kills only a single host insect, whereas

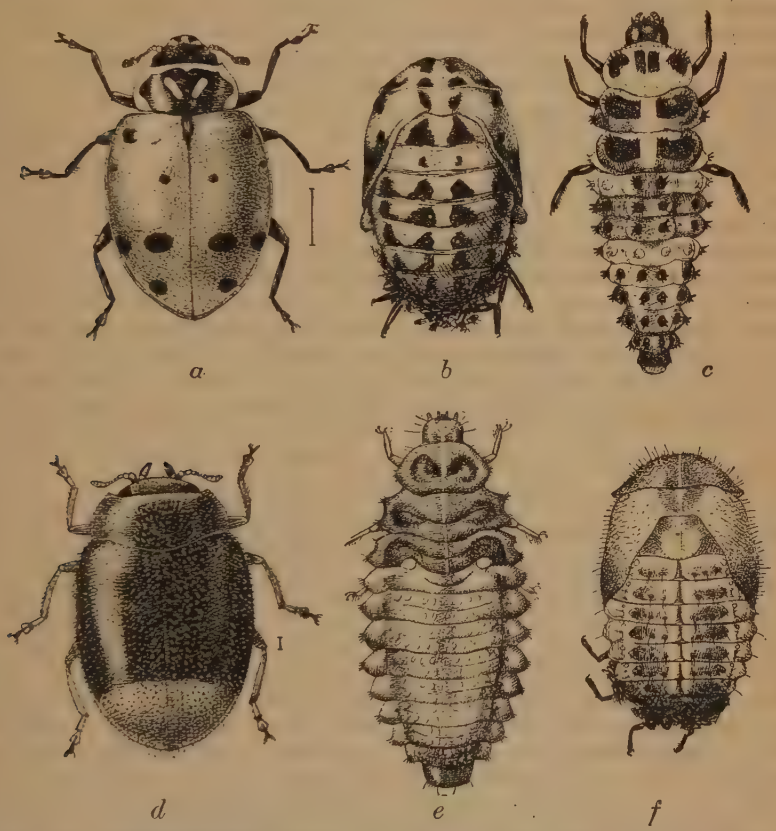


FIG. 277.—Useful ladybirds which prey upon the melon aphis and other plant-lice; *a*, Adult of convergent ladybird (*Hippodamia convergens*).; *b*, pupa of same; *c*, larva of same; *d*, adult of Scymnus terminatus; *e*, larva of same; *f*, pupa of same. All greatly enlarged. Size indicated by hair lines at right of adults. (Chittenden)

the predator requires a large number, depending on the length of its growing period and the relative size of predator and host. The parasite also kills its host slowly, while the predator kills and devours its prey in a short period. These facts do not necessarily mean that parasites are less effective than predators, for these conditions may be greatly affected by the insects concerned. The benefit to be derived from both parasites and predators is dependent upon a number of conditions, which include, among others, the relation between the development of the beneficial insect and its host, and

rapidity of multiplication of the beneficial insect, together with the number of its insect hosts. It is desirable to have several beneficial insects preying on each crop pest, so that it is exposed to attack from a succession of these insects throughout the season. As referred to under fruit insects the control of injurious vegetable insects by other forms is seldom perfect, since there are times when conditions may destroy the beneficial species and permit the injurious form to increase greatly. In such years vegetable pests which normally do little harm may attain injurious abundance and cause extensive crop damage, but fortunately such conditions are only temporary and the beneficial forms, having sufficient food, soon effect their suppression. The cutworms furnish an example of this type of biological control. In average years cutworms are only sporadic or pests on a small scale, but on occasions may be the cause of heavy injury over wide areas throughout a season. The pest is attacked by a large series of parasites in the egg, larva, and pupa stages, and in addition is subject to diseases and to attacks by predacious insects and birds. With such an efficient succession of natural enemies, it is small wonder that the cutworm is held to relatively unimportant numbers during most years. Even under such efficient checks, however, the cutworms are able at intervals to attain general abundance and be the cause of heavy plant damage until their natural enemies regain control and again reduce their numbers below the point of serious injury. Crop pests which are held in control by natural means are generally injurious only at intervals and in more or less regular cycles.

Diseases of Insects as a Means of Control

Insects are subject to attack by a wide variety of diseases, including those of bacterial and fungous origin, in addition to some more obscure disorders which are not yet fully understood. Although the disease organisms are apparently widely distributed, it is only when conditions are favorable that the value of diseases in insect control becomes apparent. The two most essential conditions appear to be favorable weather and overcrowding of the insect host. The first condition permits the growth of the disease organism and the second facilitates its spread from one insect to another. Thus, heavy infestations of cutworms may be practically wiped out in a few days by a bacterial disease, and the pea aphis or potato aphis may be almost eradicated over large areas by the attack of a fungous disease. The reduction of insects by disease may be a useful method of crop protection, but unfortunately in vegetable growing it is impossible to foretell the effectiveness of a disease epidemic far enough in advance to depend on it for the control of the pest. It is thus quite possible that one grower will go to the expense of treating his field for the potato aphis and, owing to the intervention of the disease, not obtain better final control than the grower who preferred to delay treatment.

Cultural Control

With the possible exception of such crude and direct methods of vegetable-insect control as hand picking, the suppression of pests by cultural methods is probably man's most ancient method of solving

this problem. Viewed in its broadest sense, cultural control includes all measures connected with the selection, planting, culture, and harvesting of the crop. A considerable latitude for the practice of cultural control of insects is offered in the case of annual vegetable crops.

Soil management a means of insect control.—The breaking of the soil for planting and the proper preparation of the seed bed contribute greatly to insect suppression. The former often may be very efficient in reducing the numbers of certain insects by mechanical means, and the latter contributes to prompt germination and quick plant growth, which would result in early and successful fruiting. Insects partially controlled by seasonal plowing include cutworms, certain wireworms, white grubs, the strawberry root borer, and any others which are in the soil in the larval or pupal condition. Many not killed outright are by this process exposed to unfavorable weather or to attacks by birds and other enemies. Most vegetable plants pass through the period of greatest susceptibility to injury during the time between germination and the formation of the first true leaves. During this stage they are so tender that either direct or indirect injury may prove fatal. When this period of danger is shortened by the proper preparation of the seed bed, the possibility of insect injury is lessened in proportion. In this way, possibly heavy injury by root maggots, springtails, cucumber beetles, and other common pests of seedling plants often may be avoided. Insects, such as mole crickets, which injure plants indirectly by tunnelling through the soil, may become of minor importance when the seed bed is prepared to produce rapid growth. In the same way the early development of heavy roots will reduce injury by such insects as wireworms and cucumber beetle larvæ.

Modification of planting dates.—Other steps in the control of insects by cultural means include the variation in the planting time in such a way that the susceptible period in the plant's development does not occur at the time of the greatest seasonal abundance of the injurious insect. Early planting of sugar beets for the reduction of wireworm injury is based on the fact that wireworms can only kill beets by severing the slender taproot. When this part of the plant gets below the usual "working range" of the wireworm, the plant is safe. Early planting of sugar beets for "curly top" control is also practiced in some localities, since it has been found that if the plants are large at the time the leaf hopper invades the field and transmits the disease, a commercial crop may still be produced. In the case of sweet corn in certain sections in the East, it has been noted that the early and late corn are in silk at times when the corn earworm adults are present at peaks of generations and are therefore liable to be more heavily infested than midseason corn.

It must not be supposed that, as a rule, all crops planted early are less susceptible to insect attack. Although it is true that fewer insects are generally present in the early spring, the early-planted crops make a slower growth and are therefore generally susceptible to injury over a longer period of time. In considering this factor, it must be borne in mind that the grower must understand both the growth habits of the plant and the life history of the insect under consideration as influenced by seasonal fluctuations in temperature and humidity.

Cultivation, fertilizers, and irrigation factors in insect control.—Fertilization, cultivation, and irrigation of crops are of value in at least two different ways; in the first place, some direct insect control is exercised, and in the second place, these methods, intelligently used, stimulate growth of the crop to permit it to keep ahead of the insect, or if injured, to recover. Very often a treatment with a rapidly acting fertilizer will so stimulate the crop that an otherwise serious infestation will cause little or no damage.

Irrigation is generally accepted as a remedy for the beet root aphis, a heavy irrigation being given as soon as the earliest wilting becomes apparent. Proper harvesting and otherwise treating the crop immediately afterward is one of the critical steps in cultural control. Early harvesting and the protection of freshly harvested potatoes is of great use in holding the infestation of the potato-tuber moth at a minimum in the stored crop. Prompt removal of sweet potatoes to a safe distance from infested fields will greatly reduce the subsequent infestation by the sweet-potato weevil, both in the harvested potatoes and in the succeeding crop.

Crop rotation and insect control.—Crop rotation is of fundamental importance in the supression of most soil-infesting forms and is of great value in controlling all insects which attack only a limited number of food plants. Since many of our general crop pests are somewhat restricted as regards food plants of major importance, it is readily seen that most of them would be affected to some extent by the application of such treatments. The greatest benefit will be derived where the insect is almost wholly dependent upon successive crops for its sustenance and is not carried on related crops or weeds. The onion thrips is an excellent example of this group, since the individuals which cause damage any one year are the descendents of those which were produced on the previous year's crop. Crop rotation would be an effective remedy for this insect, but, fortunately, clean culture alone is generally sufficient to largely prevent the insect from attaining injurious abundance. For the sweet-potato weevil, rotation is an excellent remedy, since the insects which might remain in the old field in left-over potatoes, stems, or volunteer plants do not migrate far to infest a new field. Although the mature insect has well-developed wings, it does not fly readily, and the selection of the new field, a quarter of a mile distant, will reduce infestation to a marked degree. In all rotations, plants of closely related botanical groups should be avoided, since the beneficial effects from rotation are attained by producing breaks in the food supply of the injurious insects.

Where insects have at least one generation a year, a rotation of alternating years is sufficient to show commercial control, but in the case of vegetable-feeding white grubs and wireworms with life cycles requiring two or three years, a more carefully planned rotation is necessary. Since some wireworms have a life cycle of three years and do most of their damage during their last larval season, a rotation of three years or less might result in only partial control. The wireworms belonging to the genera *Limonius* and *Pheletes*, which occur in the Pacific region and deposit eggs by preference in cultivated soil, come under this head.

Crop rotation is practiced primarily for the control of diseases and the preservation of soil fertility and, where practiced for

insect control, its final effectiveness will be dependent largely upon the size of the area involved and the rapidity of dissemination of the migratory form of the insect under consideration.

Cultural control is not only in line with good farming methods but does not require special and expensive apparatus and avoids such cash expenditures as the purchase of insecticides. The application of such control measures does not, therefore, add materially to the cost of producing the crop, a most important point in cases where the growers can bear only the expense of planting and growing the crops and have no funds for expensive protective measures. Cultural measures are of use also in the production of low acre-value crops which do not justify an additional outlay for the control of injurious insects. It must be remembered that cultural methods are mainly of use in avoiding insect damage rather than for protecting crops which are actually suffering from attack by pests in injurious numbers.

Plant Resistance to Insect Injury

Certain species or varieties of plants possess characteristics which enable them to show marked resistance to insect attack. These resistance qualities may be physical, chemical, or physiological, depending on whether the texture or nature of the plant makes it an unfavorable host, whether it contains chemical components which make it distasteful to the insect, or whether the character of its growth is such as to enable it to mature a crop under conditions of infestation which would be injurious to ordinary plants.

Physiological factors, such as vigor or character of growth, are useful in all plants, for these factors enable the crop to continue growth in the face of insect infestation and to recover readily from injury following suppression of the insect. The general value of this quality is intimately connected with good cultural practices, since the rapidity of plant growth is dependent upon both factors.

Other things being equal as regards edibility and market value, plants which are able to withstand unfavorable growing conditions are much to be preferred, since insect infestation may only be one of several of the contributing causes of crop failure. In this connection it has been shown that certain varieties of potatoes do not show the extreme type of injury from the potato leaf hopper, a quality which is supposed to be due to extremely vigorous growth. Experiments in the breeding of corn resistant to the corn earworm have indicated that varieties possessing greater length and thickness of the husk covering are freer from corn-earworm injury. Should further work bear out these indications, it should be possible to breed varieties of sweet corn which not only possess useful horticultural qualities but which would reduce injury from the corn earworm to a minimum.

The Control of Insects by Chemicals

In spite of the fact that insects are held in check by natural agencies and reduced by cultural means, it often becomes necessary to combat them with chemicals in the form of dusts, sprays, baits, or fumigants. Such methods, although expensive and not always satisfactory, are valuable in that they offer practically the only means of relief, once the crop or product becomes infested.

In undertaking the control of insects with insecticides, many factors must be considered. These include (1) the determination of the insect concerned; (2) selection of an effective insecticide; (3) satisfactory application; (4) total cost of control; and (5) probable return in added crop as the result of treatment. The first three factors are entomological, the last two economic. The first factors determine the possibility of controlling an insect, the last show if insect control will pay. Market conditions are of some weight in determining the possibility of obtaining dividends from insecticide application, but general crop values are of the greatest importance. Weather conditions and the stage of development of the crop must also be considered as carefully as the progress of the insect outbreak in the case of some pests. The application of insecticides may be impractical on some of the low-priced annual crops, while on others the insects if unchecked would not do sufficient damage to justify the necessary expenditures for their control. Finally, the general protective factor resulting from the treatment must be considered, for it is sometimes possible to protect crops over a much larger area than that actually treated.

In the case of stomach poisons the insect is killed by ingesting the poison with its food and such materials are effective only against insects which consume plants or plant products exposed to insecticide treatment. Contact poisons, which kill either through the trachea or by permeating the chitin (covering), with few exceptions are used for the control of sucking insects. Exceptions to these rules are found in the case of the striped cucumber beetles, some flea beetles, and leaf miners which yield in varying degrees to both contact and stomach poisons. Fumigants kill by entering the trachea in gaseous form and such materials are of most use in treating stored products in inclosed spaces and for the treatment of greenhouse insects.

The earliest insecticides usually consisted of sprays in which the toxic material was mixed with water and sometimes in combination with other materials which were added to augment the effectiveness of the treatment either by activating the toxic portion or by increasing its spreading and sticking qualities. Recent insecticide developments, however, have brought dusts into prominence, since these materials are more quickly and easily applied and the total cost of application is generally less than in the case of sprays and is gaining very rapidly in popularity and general use.

As a result of continued improvements the field of agricultural insecticides has been standardized until at present there is a fair choice of both contact and stomach poisons which are effective against a large proportion of insect pests and at the same time largely safe to use on foliage and in different situations and under varying conditions.

Stomach poisons.—Stomach poisons for vegetable insects include such materials as lead arsenate, calcium arsenate, Paris green, magnesium arsenate, zinc arsenate, derris, hellebore, white arsenic, sodium arsenite, sodium fluoride, and others. The last named has been used principally under western conditions as a poison in bait for cutworms and earwigs. White arsenic and sodium arsenite are more generally used in poison baits for grasshoppers and cutworms.

Hellebore and derris are not generally used. The remaining poisons consist of stable arsenicals which may be used in sprays and dusts and applied to growing crops. Lead arsenate practically has superseded Paris green and for many years has been the favorite arsenical for truck crops and fruits. Calcium arsenate is rapidly becoming popular for general use. Its chief advantages are low price, good stability, and satisfactory dusting qualities, but in addition to these it meets the other qualifications for a good stomach poison, which include (1) high insect toxicity; (2) favorable plant tolerance; (3) good spreading and sticking qualities, and (4) wide compatibility.

Although arsenicals are applied to kill insects, there are many groups which are repelled rather than killed. These groups include active insects, such as flea beetles, blister beetles, and others which can move readily from plant to plant. Foliage is susceptible to injury by some arsenicals, and plant tolerance to the spray must always be considered. This factor varies largely with the quantity of soluble or uncombined arsenic in the material, but undoubtedly there are other factors which have some influence on plant injury. The stage of growth of the plant, presence of new foliage, and other factors may be of importance in connection with spray injury and climatic conditions, including both humidity and temperature, also have a definite relation to foliage injury by sprays.

Contact poisons.—Among contact poisons are included nicotine, soaps, oil emulsions, sulphur preparations, pyrethrum, Bordeaux mixture, corrosive sublimate, derris, and a few others. Oil emulsions and soaps are used only in sprays, but the other materials may be employed either in the spray or dust form. Bordeaux mixture is useful as a control for the potato leaf hopper. Corrosive sublimate is valuable for the control of root maggots and as a repellant for ants. The sulphur preparations are utilized in mite control and sulphur dusting is a successful treatment for these pests where temperatures are high enough to release the sulphur fumes in toxic concentration.

Nicotine, soaps, and derris are used against soft-bodied sucking insects, such as aphids. Derris is an organic material and although efficient is not yet in general use. The contact insecticides in most general use include nicotine and soaps, in addition to the sulphur compounds. Soap may be used with the nicotine spray mixtures and undoubtedly adds to the toxicity, in addition to improving the spray from a mechanical standpoint. Soaps are of greatest use against the soft-bodied insects, like plant lice, but are used mainly in small-scale operations. Contact insecticides have been generally used in spray form but the recent development of nicotine dust has given great impetus to the use of dusts. Nicotine solutions in high concentrations (40 per cent) added to some carrier, as hydrated lime, make a dust which has shown a high toxicity for many sucking insects, such as aphids and nymphs of the plant bugs. In addition to this, some chewing insects, such as flea beetles and the striped cucumber beetle, are readily controlled with such material. The dusts range in strength from 1 to 4 per cent of actual nicotine, but the 1½ and 2 per cent dusts are favored for general use.

Sprays vs. dusts.—Although some of the recent improvements in the insecticide field have been due to the development of new com-

binations which either increase the toxic effect or lower the cost, the greatest development has undoubtedly been due to the wider utilization of insecticides in the form of dusts. This step has greatly popularized insecticide application and has led to the wider application of chemicals. This point is of paramount importance since the final value of an insecticide depends on its general use by the growers.

The popularity of dusts is based largely on the following points: (1) Rapidity of application; (2) water not necessary; (3) lighter weight of working equipment, and (4) no delay to fill tank and mix stock solutions. For a long time sprays maintained their popularity because of the belief that they assured better distribution of the poison material under all conditions. Although sprays may penetrate better than dusts in some instances, this factor is not alone responsible for insecticide distribution, and it has been found that electrically charged or finely divided dusts may reach to protected parts of the plant not covered by sprays.

Fumigants.—Fumigants are used principally to kill insects in inclosed spaces. The compounds generally used include the cyanides of sodium, potassium, and calcium, carbon disulphide, carbon tetrachloride and nicotine. Hydrocyanic-acid gas is used in killing insects in stored products and green houses. Hydrocyanic-acid gas is generated from sodium and potassium cyanides by means of dilute sulphuric acid. Calcium cyanide releases hydrocyanic-acid gas on exposure to moist air, no apparatus being required for its use. Although the latter material is a new development, it is being tested for many insects not inclosed, and under these conditions may be called an "open air" fumigant. Many satisfactory kills have been obtained in preliminary outdoor tests, but since it is extremely difficult to build up toxic concentrations of hydrocyanic-acid gas under these conditions and maintain them over a killing period, the use of calcium cyanide for the control of vegetable insects outdoors may be said to be still in the experimental stage. The high toxicity of this material to various plant bugs, which are highly resistant to most insecticides, indicates that it may find a field for usefulness in this direction. Calcium cyanide used as a soil fumigant has already proven its usefulness for the control of some of the soil-infesting insects under certain conditions.

Carbon disulphide is one of the oldest and best-known fumigants. Its action is slower than that of cyanides and it is impossible to build up a killing concentration at temperatures much below 65° F. With the exception of the fire hazard, it is not as dangerous to use as the cyanides and is still in great favor for the treatment of many stored products. The liquid volatilizes and the carbon-disulphide gas, being heavier than air, penetrates material readily. Exposures generally last from 12 to 48 hours, depending on the insect and the material to be fumigated. The principal objection to carbon disulphide is that the liquor is inflammable and the gas when mixed with air is explosive in the presence of fire. Carbon tetrachloride is of relatively low toxicity and is used as a fumigant to only a small extent but has the advantage of being nonexplosive.

Nicotine is still a popular fumigant for greenhouses in spite of the fact that dosages for sodium cyanide have all been worked out and that the latter is more effective in killing insects. Nicotine is favored

by some greenhouse men because of its safety, but recent tests with calcium cyanide have definitely demonstrated the usefulness of the material for greenhouse work. Nicotine is volatilized by heat, and exposures generally last about 12 hours.

New and Promising Insecticides

During the last few years the attention of entomologists and chemists has been directed toward the development of new insecticides and improved methods for the application of all insecticides. Some success has resulted and several promising compounds have been developed. Carbon-disulphide emulsion has given excellent control of soil-infesting forms, like May beetles and wireworms, but with present methods this treatment is only promising in cases where the returns from vegetable crops will permit a heavy expenditure for insect control. Recent experiments in search for cheaper contact insecticides have shown that certain of the fatty acids (capric, etc.) have a definite and rather high toxicity to some sucking insects. The acid is made up into a stock emulsion with soap, glue, and benzol gasoline. In preliminary tests sodium fluosilicate has shown promise in the control of a wide variety of vegetable insects. This material is effective as a stomach poison with the additional advantage of cheapness and low toxicity to higher forms of life.

Future Outlook for Vegetable Insect Control

With a greater concentration of the vegetable industry, under average conditions, such development would tend toward heavier insect losses. On the other hand, large-scale vegetable production permits of wider practice of cultural control and the consequent reduction of pests. Under such conditions, it is also possible to provide the necessary materials and equipment for prompt treatment of such insects as do appear. The trend of treatment of vegetable insects in the future therefore seems to be more in the nature of sound farm practice to prevent the appearance of insects and at the same time to insure the development of vigorous plants with resultant good crops. These methods can be made a part of crop production without material increase in cost and their value lies in the fact that the cheapest and most effective way of controlling vegetable insects is to avoid their presence.

Combination Disease and Insect-Control Measures

Frequent reference has been made in the foregoing pages to the close relationships existing not only between the life history and activities of the various diseases and insects of fruits and vegetables, but also as to their methods of control. Many horticultural crops are subject to disease and insect enemies that respond to the same control methods and materials. Certain chemicals used in the control of insects and diseases may be combined without changing them chemically, and thereby effect dual control resulting in a saving of time in making the application. There are, however, numerous chemical and physiological relationships and limitations that must be considered in connection with combination insect and disease-control measures. It is obviously desirable wherever practicable to combine

the materials used for two or more phases of control in order to reduce the expense and to obtain timely application of the necessary materials. This is especially important in view of the fact that the labor required in the application is frequently the largest item of expense. In cases where the disease and insect infestation do not occur simultaneously, dual application is impracticable. The chemical relationships of the materials employed, however, are of vital importance as combinations of certain chemicals in a single spray or dust may result in the production of compounds that are injurious to the plants or which may modify the effect of the individual ingredients. In order that the grower may not injure his crops or fail to obtain control, it is essential that he have accurate information as to the combinations that may be made safely and effectively.

Table 1 gives the more important insecticides and fungicides which are ordinarily combined, together with the limitations in their application.

TABLE 1.—*Spray and dust combinations* [1]

FUNGICIDES

Basic material	Contact sprays	Stomach poisons	Stickers, spreaders, or neutralizers	Remarks
Bordeaux mixture.	Nicotine sulphate			Not on peach.
	do		Soap	Do.
	do	Lead arsenate		Do.
	do	do	Soap	Not on truck crops, except cabbage; not on peach.
	do	Calcium arsenate		Not on fruits, especially stone fruits.
		Lead arsenate		Not on peach.
		Calcium arsenate		Not on fruits, especially stone fruits.
		do	Soap	Not safe on tender foliage.
Lime-sulphur concentrate.	Nicotine sulphate			Not on truck crops; not on peach.
	do	Lead arsenate		Do.
		do		Do.
Self-boiled lime-sulphur.	Nicotine sulphate			Use on stone fruits, not on vegetables.
		Lead arsenate	Casein	Do.

CONTACT POISONS

Basic material	Contact sprays or fungicides	Stomach poisons	Stickers, spreaders, neutralizers	Remarks
Lime-sulphur concentrate.	Nicotine sulphate			Not on truck crops; not on peach.
	do	Lead arsenate		Do.
		do		Do.
	Lime-sulphur concentrate.			Do.
	do	Lead arsenate	Casein	Do.
	do	Calcium arsenate		Do not use.
	Bordeaux mixture		Casein	Not on peach.
Nicotine sulphate.	do	Lead arsenate		Do.
	do			Do.
	do	Calcium arsenate		Not on fruits, especially stone fruits.
		Lead arsenate	Milk of lime	
		do	Casein	
			Soap or casein	
		Calcium arsenate	Milk of lime	Not on fruits, especially stone fruits.

[1] Combinations containing soap and lime-sulphur, lead arsenate, Paris green, or calcium arsenate should be used with caution on tender foliage. The addition of casein does not alter any combination spray.

TABLE 1.—*Spray and dust combinations*—Continued

CONTACT POISONS—Continued

Basic material	Contact sprays or fungicides	Stomach poisons	Stickers, spreaders, or neutralizers	Remarks
Nicotine sulphate dust.	Sulphur			Contact insecticide and repellent.
Kerosene emulsion.	Bordeaux mixture			Not on truck crops; not on peach.
Lubricating oil emulsion.	do			Combined dormant scale treatment and fungicide.
Lubricating oil emulsion.	Lime-sulphur Nicotine sulphate.		Casein	Dormant or delayed dormant treatment for scale, aphids, and fungi.

STOMACH POISONS

Basic material	Fungicides	Contact sprays	Stickers, spreaders, neutralizers	Remarks
Lead arsenate	Bordeaux mixture	Nicotine sulphate		Not on peach.
	do	do	Soap	Not on tender vegetables.
	do		do	Do.
	do			Not on peach.
	Lime-sulphur concentrate.		Milk of lime	Not on truck crops; not on peach.
	do	Nicotine sulphate		Do.
		do	Soap	Not on truck crops, except cabbages; not on peach.
			do	Use on cabbage; not on peach.
			Milk of lime	
		Nicotine sulphate	do	
	Finely ground sulphur.[1]			Used as dry dust.
Calcium arsenate		Nicotine sulphate	Milk of lime	Not on fruits, especially stone fruits.
	Lime-sulphur	do		Not on fruits, especially stone fruits; not on truck crops.
	Bordeaux mixture	do		Not on fruits, especially stone fruits.
			Milk of lime	Do.
Paris green	Bordeaux mixture			Not on fruits, especially stone fruits; not on tender vegetables.
	do	Nicotine sulphate		Do.
		do	Milk of lime	Do.
			do	Do.
		Nicotine sulphate		Do not use.

[1] Hydrated lime or gypsum are also used as diluents. They have no fungicidal value.

In the application of the table for determining safe combinations for spray treatment, it is first necessary to make a careful diagnosis of the separate troubles which must be treated. With this information the necessary chemicals for the treatment can be determined and the table shows whether or not these chemicals can be combined and put on at one application.

In most instances combinations of chemicals must be made to effectively control both insects and diseases or even different combinations of insects or diseases, but in a few instances it has been found possible to control both insects and diseases by the use of a single substance. In such instances a material primarily used as a fungicide has also insecticidal or deterrent properties which at the same time make it the best-known means of controlling certain insects. In such a category would come the use of Bordeaux mixture

for the control of potato leaf blights since it acts also as a deterrent to a flea beetle and is the best-known remedy for the potato leaf hopper, which is the cause of hopperburn.

Another example of the dual-purpose treatment is found in the case of lime-sulphur which acts both as a fungicide and a contact insecticide when applied during the winter to dormant trees for the control of San Jose and certain other scale insects, pear-leaf blister mite, peach-twig borer and others, and at the same time destroys spores of various disease producing fungi. Lime-sulphur in a dilute form is used as a summer spray for the control of various leaf and fruit diseases. In the summer spray lead arsenate may be added to control the later broods of codling moth and other chewing insects.

In some cases the insects bear an essential relation to the disease in their being the most important, or often the sole agent of transmitting the disease organism or virus from plant to plant and from field to field, as is the case with cucumber wilt and the striped cucumber beetle, and potato virus diseases and the plant louse. In such cases the successful control of the insects furnishes at the same time a high degree of control of the disease as well, the value of this treatment depending upon the timeliness in controlling the insects, which are the contributing cause before the disease becomes a factor in crop production.

In most instances, however, insects and diseases occurring on a plant have no special known relation to each other, as, for example, in the case of the Colorado potato beetle, and the potato leaf blights, or the codling moth, and apple scab, bitter rot, and blotch.

Materials for Combination Treatments

Sprays.—Bordeaux mixture is the most widely used fungicidal spray for the control of leaf diseases of truck crops and of many fruits. When properly made with reliable chemicals and applied at the proper time with efficient spraying appliances which deliver fine sprays, many leaf diseases are effectively controlled and disease losses markedly reduced. Different strengths are used on various crops but the 5–5–50 formula (5 pounds bluestone and 5 pounds lime in 50 gallons of water) is commonly used for most truck crops including potatoes, tomatoes, and watermelons. A weaker solution, such as 4–4–50, is used by some on celery, or 2–4–50 for the earlier applications on crops like cucumbers and muskmelons which under certain conditions are sometimes injured by the stronger spray. As a rule the 4–4–50 or 3–3–50 strengths are used on fruits.

As shown in Table 1 Bordeaux mixture may be combined with many of the standard insecticides such as lead arsenate or calcium arsenate to act as a complete spray for leaf and fruit diseases, as well as for any chewing insects such as Colorado potato beetle or codling moth.

To be effective for sucking insects also, the addition of nicotine sulphate in some form is essential and may be included without injury to the crops or reduction of the efficiency of any ingredient.

Resin fish-oil soap may be added to any of these combinations if desired to increase the spreading and sticking of the spray, but the addition of soap to an arsenical should only be made where the

plant is hardy, for a combination of soap with an arsenical raises the soluble arsenic content of the spray mixture and makes it more injurious to foliage. The addition of soap is especially important in sprays for crops like onions and cabbage, and only slightly less so on the fruit of cranberries and grapes on which it is difficult to get the spray to stick.[20]

Dusts.—As a result of renewed experiments with various dust fungicides and insecticides during the last few years, marked improvements in the materials available for use, and in the methods and equipment for applying them have been made. It is recognized that there are certain definite advantages in dusting over spraying which make it highly desirable that methods and materials be devised for overcoming the offsetting disadvantages and thereby making possible a larger substitution of dusting for spraying. The advantages are chiefly speed of application, lightness of equipment needed, and lower initial cost and operating expense. The offsetting disadvantages are lower efficiency of most fungicidal dust materials at present available and the considerably increased cost of these materials, which in many cases is not balanced by the greater speed of application. Dusts are, however, being used in some instances as supplementary to sprays and in others as substitutes for them, and it seems probable that their use will increase in the future in direct proportion as their efficiency is increased and their cost reduced. Where fungicidal dusts have proved effective for disease control it is frequently possible and highly desirable to combine with them the required insecticides.

Sulphur and copper-lime combinations are among the most important fungicidal dusts now available and where these give satisfactory disease control they can be combined with insecticides to furnish insect control at one operation.

Powdered arsenate of lead is the leading dust insecticide for chewing insects on tree and small fruits and on truck crops. Calcium arsenate where it can be used is cheaper and is as effective as lead arsenate, but can not be used with safety on most horticultural crops, especially the stone fruits. Insecticidal dusts are available for control of insects and are coming into more general use than fungicidal dusts. They can be combined where desirable.

Nemic or Nematode Pests of Fruits and Vegetables

Nemas or nematodes, often called eelworms or roundworms, owing to their abundance and wide distribution, bear an important economic relationship to practically all phases of fruit and vegetable production. There are many species and millions of individuals of plant-infesting nemas occurring in soils everywhere, many species living in plants, some being very injurious. Nemas are slender, round, and threadlike and often so small as to be invisible to the naked eye; if visible, they look like small, whitish threads, rarely more than one-sixteenth of an inch in length. Their bodies are usually transparent so that with the aid of a microscope their internal, as well as external structure can be seen (fig. 278). Oc.

[20] See Farmers' Bulletins 1060, 1081, and 1220.

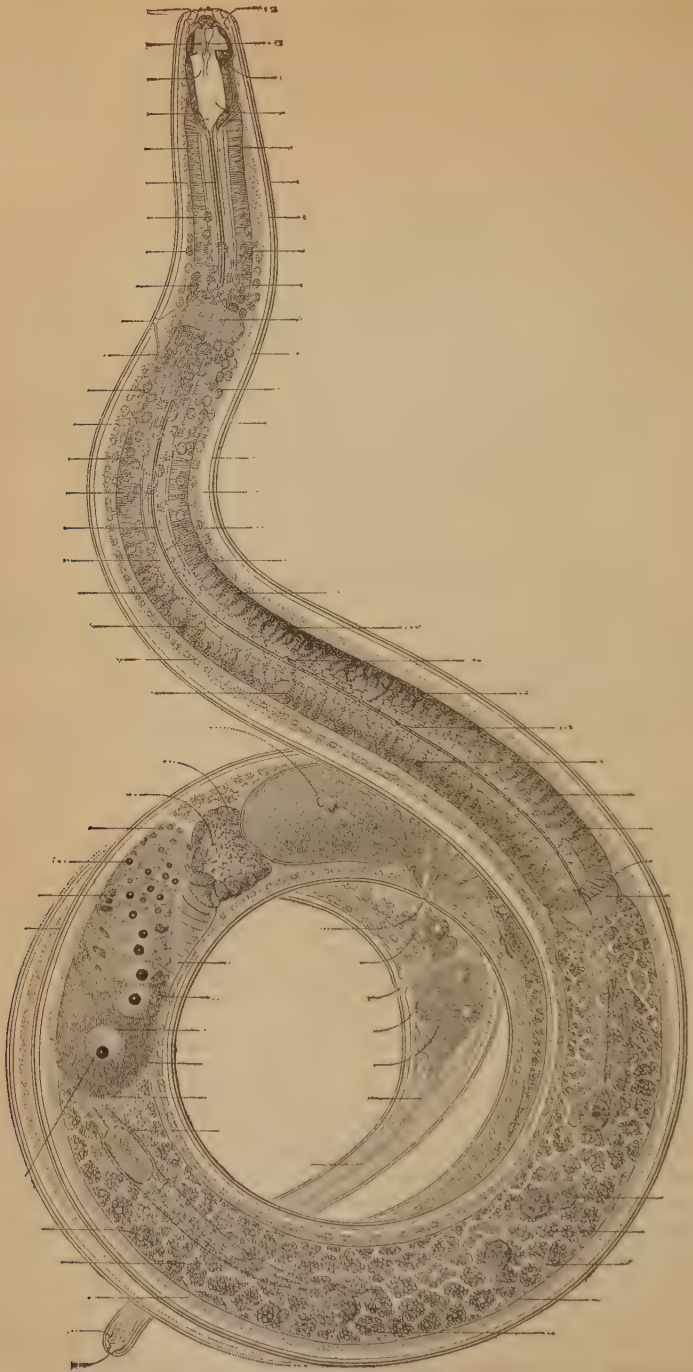


FIG. 278.—Female of a typical mononch, *Mononchus longicaudatus*, a syngonic form. This individual had been feasting on other nemas, the remains of which are shown inside the intestine. Only the anterior half of the sexual organs can be seen in the illustration; an entirely similar branch is hidden on account of the coiled attitude of the body

casionally tiny earth worms (technically known as *Oligochaetes*) are mistaken for nemas, but are easily distinguished by their larger size. In addition, nemas practically never contract their bodies longitudinally as do all earth worms; also, nemas are not segmented and do not have movable locomotor bristles along the body.

The illustrations accompanying this article show the nemic life cycle, including adult nemas, the egg, and the larva. The egg (fig. 279) is minute, ovoid or spheric, and its shell is usually smooth; it is sometimes very resistant to dryness and cold. The egg is easily transported by water, wind, or animals, or attached to almost any moving thing to which it may adhere. The larval nema (fig. 280) has the general appearance of the adult but is without sexual or-

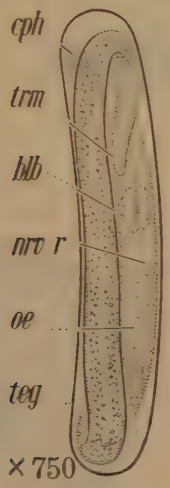


FIG. 279

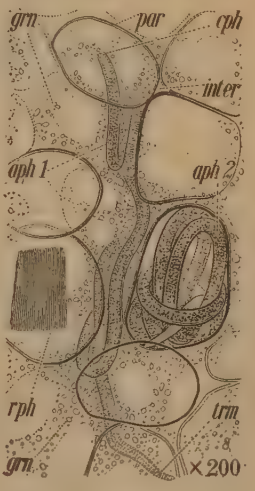


FIG. 280

FIG. 279.—Egg of *Aphelenchus cocophilus* as found in the tissues of the trunk of coconut palm. *cph,* head of embryo; *blb,* oesophageal bulb; *nrv r,* nerve ring; *oe,* oesophagus; *teg,* shell of the egg

FIG. 280.—Manner in which *Aphelenchus cocophilus* occurs in the parenchymatous tissue of the trunk of the coco palm. *aph* 1 and 2, two individual nemas as fixed in formalin; *cph,* head of a nema lying in the intercellular space; *term,* tail end of same; *par,* parenchymatous cell of palm; *rph,* rhaphides in another cell; *grn,* one of the granules in the more or less disintegrated contents of one of the cells. All the palm cells shown are dead. The material here shown could be contained in a particle of trash only one one-hundredth of 1 inch long.

gans; while growing it sheds its skin (cuticle), usually four times. The larvæ are sometimes very resistant to cold and drought. The sexual organs mature at the fourth moult or shedding of the skin, after which reproduction occurs.

The larvæ of some species of nemas have the faculty of forming cysts; that is, of transforming the skin or cuticle into a protective cover, and, if need be, remaining inside in a dormant condition, highly resistant to changes of temperature, dryness, etc. In this condition nemas may be easily transported. Some nemas encyst themselves attached to insects and are thus protected and transported. Their small size, their slender form and snakelike way of moving, combined with their ability to resist unfavorable conditions adapt nemas for life in the soil and for a parasitic life in plants and animals.

Nemas are one of the important factors in soil life, and influence soil changes in various ways. They live in wet and dry lands, in clayey as well as sandy soils, and thrive wherever plants grow or animals can live, from snow-covered mountains in the Arctic regions to the warmest parts of the Tropics. Nemas are numerous in the soil—the richer the plant life, the greater their number. This interrelationship between plants and nemas finds expression also in

FIG. 281

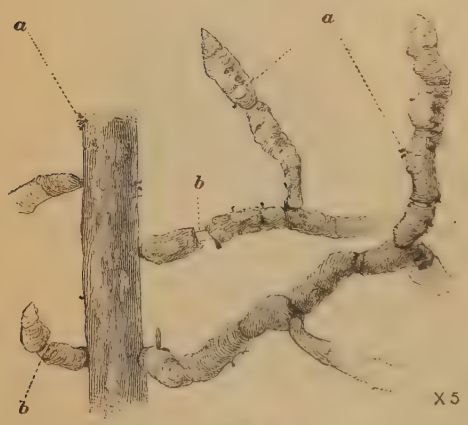


FIG. 282

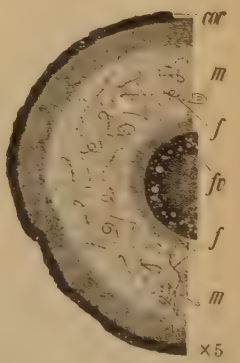


FIG. 283

FIG. 281.—*Tylenchulus semipenetrans*. Mature and half-grown females, with their head ends permanently embedded in the feeding root of a citrus tree. This is a plant parasite similar in many ways to the notorious gallworm *Caconema radicicola*. *a*, Tail end; *b*, vulva; *c*, excretory pore; *d*, *e*, egg in uterus

FIG. 282.—Citrus root attacked by the parasitic nematode *Tylenchulus semipenetrans*, magnified five diameters. The parasites are shown at *a*. They are shown black, but in reality are yellowish or brownish. Owing to the presence of the parasite the feeding roots may become somewhat enlarged and irregular and the outside portion of the root somewhat separated from the axial portion, as shown at *b*. When the roots are agitated in water the outside portion sometimes becomes loosened in segments which will slide on the axial portion *b*, somewhat as beads slide on a string

FIG. 283.—Half of a cross section of a root of coco palm infested with the nema *Aphelenchus cocophilus*. *cor*, bark or cortex of root; *m* and *f*, male and female nemas infesting the root; *fv*, central fibro-vascular bundle of the root

a denser nema population in and about the roots of the plants. With increasing depth and decrease in the number of roots, fewer nemas occur, but following long roots nemas penetrate many feet into the soil, in fact as far as do the roots (figs. 281 to 283). The surface layer of the soil with its large quantity of dead and living organic material is especially rich in nema population. Estimates showed their minimum number in the top 6 inches of an acre of a Missouri corn field to be 648,000,000; of a Rhode Island field 610,000,000;

of a Minnesota field 121,000,000. The maximum numbers would, undoubtedly, be multiples of these figures. They live in and on plants throughout the year, their number being largest in the summer. Frozen as well as dry soil may contain them, and thawing or moisture will bring them back to active life.

Nemas play various rôles, some being factors in the change of organic matter to humus, thus influencing the life associations of the soil. Sprouting seeds often attract large numbers of nemas, but often resist their attack if none of the especially injurious forms are present. Kati Marcinowski counted on three apparently healthy sprouting wheat kernels the following: On No. 1, 15 nemas belonging to 8 different species; on No. 2, 31 nemas of 6 different species, and on No. 3, 75 nemas of 7 different species.

Certain of the nemas feed on only one or at most a small number of plant species; others feed on almost any plant, while still others feed on animal as well as plant food. Quite a number of nemas feed on other nemas, these being useful to man where they feed on injurious parasitic forms. (Fig. 278.) Soil fungi, soil algæ, and soil bacteria are the chosen food of other nemas. On the other hand, while nemas have their diseases fungoid, protozoic, and bacterial—certain of the nemas are carriers of soil microorganisms and in this way may spread diseases of plants and indirectly do much harm. They also do good by fostering the growth of the microorganisms connected with the formation of humus. Nemas not directly injurious may become indirectly so, because when feeding on plants they break the protective surface tissues and thereby create an entrance for diseases. The general effect of nemas on the soil, especially on its plant life, is manifold and of far greater economic importance than is commonly realized. Soil nemas spread by their own activities. These wanderings take place radially from the original center of infestation. For this reason field infestations, large or small, are, as a rule, more or less circular areas which increase year by year. The spread of nemas by means of carriers, however, is more important. Man is the most important carrier, spreading the nemas in the soil adhering to his footwear, tools and machinery, nursery plants, bulbs, seeds, packing materials, hay, manure, and, in fact, in almost any material that may be moved from one point to another on the farm. Animals and birds of many kinds, both domestic and wild, as well as insects, are carriers. Wind and water, especially irrigation water, are important distributors of nemas.

The heavy losses in the fruit and vegetable industry owing to the work of nemas are often attributed to other causes. Nemas work invisibly and it is difficult to estimate their annual damage which in the aggregate amounts to many millions of dollars, though absolute failure of crops because of nemic diseases is exceptional. Losses of 4 or 5 per cent are extremely common and very often are much higher. Poor stands, reduced harvest, and nonmarketable crops are caused by nemic pests. The effect of a nemic disease upon the crop varies from reduced vitality and lower resistance to other pests to complete loss. Young plants suffer more than do the older ones; nearly all parts of plants—roots, stem, foliage, flowers, and fruit—have their specific nemic diseases. Nemas occur in all parts of the

country, but flourish especially where the climate is mild. During recent years nemas have become very important greenhouse pests.

The presence of nemas may manifest itself in various ways, often in the form of swellings called galls (fig. 284) which may occur on the roots, stems, leaves, flowers, or even on the seeds. Owing to the fact that their parasitic organisms such as fungi and bacteria may induce plants to form galls, the presence of these latter are not a characteristic of nemic diseases only. In other cases nemas cause an abnormal growth in plants, mainly distortions, dwarfings, and cauliflowerlike growths. Heavily infested roots sometimes form an abnormally large number of fine rootlets or become "bearded." Other nemas living in stems, leaves, or flowers may give rise to spots of yellow, brown, or red color. Seeds containing nemas are sometimes dwarfed, but often enlarged. Potatoes infested by nemas usually have a rough, warty, and somewhat discolored surface.

FIG. 284.—Roots of tomato, showing enlargements caused by the gall nema *Caconema radicicola*. Tomatoes sometimes suffer severely from this disease. (After George F. Atkinson.)

To determine the cause of any trouble of this character beyond a doubt, it is necessary to determine the presence and species of the associated nema by the aid of a microscope. Some plants are more or less immune to nemic attack, while some are to a certain degree protected against nemic attack by the toughness of their bark or, seems likely, by specific substances contained in their tissues. Such resistant varieties may often be used to advantage on soils that are heavily infested. It is interesting that the same crop may be effected by nemic pests in one locality but appear nonsusceptible in another locality. Nemas appear to have developed different tastes, the explanation of which seems to be as follows: Nemas have sense organs which enable them to locate the host plant they prefer, even at considerable distance. They move through the soil toward the preferred plant, seeming to neglect other possible host plants closer by. Although some injurious nemas attack a large number of different crops, any given nemic population may prefer a particular crop or a small group of crops. This preference seems to be acquired. Thus the nemic populaiton may be said to specialize more and more on a particular species or variety of plant. If the latter is present, the nemas will promptly attack it in large numbers; but if absent they may hesitate, or, at least, not promptly take to

another host plant, even if right at hand. This explanation shows why nemic pests increase where the same crop is grown year after year—the nemas seem to adapt themselves to the particular crop, and for that reason their attacks become more and more deadly.

Although there is at present no possible way of determining accurately the economic loss to the fruit and vegetable industry owing to nemic infestations, these losses are so broadly distributed and affect so many different crops as to render this class of pests one of the most important with which the fruit and vegetable grower has to deal. Their spread has been rapid and it is only within recent years that any real knowledge has been gained relative to either their life history or control measures. At present the losses to nurserymen and plant growers from root knot (fig. 284) resulting from nemic attack are enormous. The vegetable grower, especially in the milder climates of the country, has in many cases, been compelled to abandon the growing of certain crops because of nemic infestation. The greenhouse-vegetable growers of the North have spent millions of dollars in steam and other forms of sterilization, and in the various methods that have been adopted for the control of nemic pests. With the establishment of the bulb-production industry in the United States there has arisen an important economic problem in the control of nemas (fig. 285). In fact the persistence in spread of nemic pests has already indicated certain geographic limitations in the development of the bulb industry.

Remedies

No thoroughly direct control for nemic diseases of plants has been found. The chief measures to be taken are of a preventive nature. Crop rotation is one of the most effective measures and is based on the behavior of the nemas in the selection of host plants, and on the fact that nemas in general do not at once readily adapt themselves to new and different hosts. In crop rotation special attention must be paid to weeds which, if not destroyed, frequently carry nemic pests over long rotation periods. In order to minimize a nemic pest through rotation, the causative nema must be determined and for this purpose it is desirable to have as much as possible of the previous crop history of the infested field. Nemic pests in greenhouses and nursery beds can often be controlled by sterilization by means of steam, hot water, or dry heat. Numerous chemicals have been tried from time to time, including calcium cyanimide, formaline, and carbon disulphide, which have received a limited amount of approval. The quantities of these chemicals, however, that are necessary in order to obtain satisfactory results make this method expensive, and thus far chemical treatment has not been extensively adopted. For certain plants which have dormant stages such as bulbs, seed dasheens, and others, a hot-water remedy has been found by which the bulbs are submerged for three to four hours in water which is kept at a constant temperature of 122° F. No nema, including the eggs and the larvæ has been known to survive a hot-water treatment of 130° F. for more than a few minutes, and a 3 to 4-hour treatment at 122° F. is generally considered effective. In certain cases, temperatures as low as 110° have been recommended as sufficient. Prevention in the nursery, greenhouse and propagating beds is best ob-

tained by using clean, uninfested soil, clean seed, clean nursery stock, and by avoiding contamination by the careless spreading of the nemas as previously referred to. Rotation of crops is, undoubtedly,

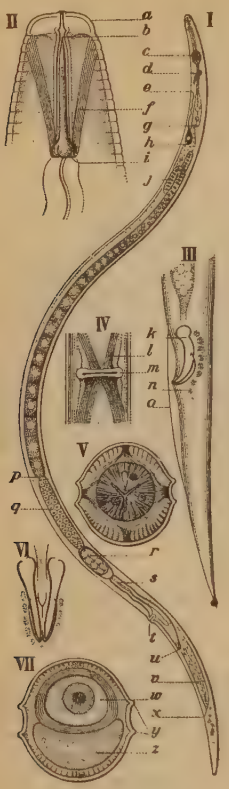


FIG. 285

FIG. 286

FIG. 285.—The devastating nematode of the onion and other bulbous crops (*Tylenchus dipsaci*). This nematode has caused enormous damage in the Netherlands and other parts of Europe, where it attacks the onion, hyacinth, and numerous other plants. It has been known for a long time in Europe and Australia; no means have yet been devised by which it can be eradicated. Recently it has been found doing great damage to bulbs in the United States. It is one of the species which puncture the tissues of plants by means of a long, narrow, tubular sting, or spear, located in the mouth. *I*, a female; *II*, head of the same more highly magnified, the spear is most clearly shown; *III*, tail of a male; *IV*, vulva from below; *V*, cross section of the neck passing through the sucking bulb; *VI*, front view of the spicula and accessory parts; *VII*, cross section through the middle of a female, showing how the body cavity is filled completely by the ovary (*w*) and the intestine (*x*). *a*, lip region; *b*, tip of spear; *c*, medium sucking bulb; *d*, nerve ring; *e*, excretory pore; *f*, muscles for protruding the spear; *g*, posterior esophageal swelling; *h*, excretory gland; *i*, hind end of spear; *j*, loop in ovary; *k*, spiculum, or penis; *l*, muscles for opening the vulva; *m*, the vulva; *n*, glandular (?) bodies; *o*, bursa; *p*, hind end of ovary; *q*, uterus containing spermatozoa and a segmenting egg (at *r*); *r*, segmenting egg; *s*, vagina; *t*, the vulva or female sexual opening; *u*, blind end of posterior rudimentary ovary; *v*, intestine, showing its cellular structure; *w*, cross section of an egg; *x*, anus; *y*, wings of the cuticle; *z*, cross section of the intestine

FIG. 286.—Roots of cucumber, showing enlargements caused by the gallworm. Nearly all other common garden plants are similarly attacked. There are many thousands of the worms in the nodules upon such a root system. (After Kati Marcinowski)

the best known method of controlling nemas in the open ground. A golden rule as applied to nemas is to "always be suspicious of any swelling on the seed, plant, or cutting, or on the root, unless this

swelling is well known to be natural to the plant." This rule, if followed, would have doubtless saved agriculture in the past from enormous losses.

Over 500 different species of plants are already known to be attacked by the gall nema which is the worst nemic pest known (fig. 286), if not the worst pest known to agriculture. Many fruits and most vegetable crops are attacked by the gall nema (*Caconema radicicola*) which produces galls, swellings, and deformations on roots and on tubers, where it is known as "big root" (fig. 284). The sugar beet nema (*Heterodera schachtii*) lives on a score of host plants, including beets, beans, peas, spinach, cabbage and its relatives, potatoes, corn, etc., in addition to the sugar beet (fig. 287). This pest

FIG. 287.—Sugar-beet field near Lewiston, Utah, containing a small area very severely infested with nematodes. Photographed by Gerald Thorne

is sometimes rather difficult to recognize. In extreme cases on beets the roots have a bearded appearance because of the large number of small rootlets formed.[21] The stem nema (*Tylenchus dipsaci*) attacks numerous host plants, among which are alfalfa, clover, onions, potatoes, beans, peas, strawberries, and others. It produces decay in bulbs of hyacinth, narcissus, and onions, one effect being the occurrence of brown rings on a cross section through the bulbs; by warty, discolored surfaces on potatoes; and distortions and dwarfings on the stems, leaves, and flowers, and even on the seeds of various plants. The affected parts of the plants frequently, but not always, contain the nemas in large numbers.[22] The citrus nema (*Tylenchulus semipenetrans*) occurs on citrus trees (figs. 281 and 282), including the sour and sweet orange, the grapefruit, and the three-leaf citrus fruit

[21] See Farmers' Bul. No. 1345 and Dept. Agr. Cir. No. 297.
[22] See Farmers' Bul. No. 1248.

known as *Citrus trifoliata.* It attacks the rootlets, which become enlarged and irregular, the outside portion becoming easily loosened.[23] Strawberry bunch (*Aphelenchus fragariae*) occurs in the stems and leaves of strawberries. A plant that is heavily infested produces an abnormal growth; in the spring the leaves become deep red and there is also a reddening of the under sides of the unfolded young leaflets.

The above are but a few of the important nemic pests that have an important economic bearing upon the horticultural industries, but those enumerated will be sufficient to indicate the vast importance of this class of pests. The present state of our knowledge of nemas is such as to render it impossible to furnish all the information that would be necessary in order that the average grower could determine either the kind of nema present or the remedy, and wherever there is a doubt active measures should be taken or a specialist who has studied nemas consulted.

Birds, Mammals, and Other Animals in Relation to Fruit and Vegetable Production

Birds

The relation between bird life and the production of fruit and vegetable crops is a complex one. Birds of many species and in incredible numbers prey not only on insects that are a menace to horticultural industries, but themselves take toll at times from the farmers' crops. There are those that render conspicuous service at all times in the destruction of scale insects, tent caterpillars, cutworms, or leaf beetles. There are a few whose presence in the orchard during the fruiting season or in the garden earlier in the year is generally looked upon with suspicion. Others distinguish themselves as benefactors to the farmer at one season, while at another, either through a concentration of numbers because of failure of natural food supply, or simply through an acquired food preference, they become so destructive that measures for crop protection or even local reduction in numbers may be required.

An outstanding fact revealed by the study of the relation of birds to agriculture in this country has been the close association of instances of severe damage with the operations of the pioneer farmer, or the one situated in close proximity to conditions that may still be looked upon as primeval. The substitution of orchards, gardens, and fields of grain for areas that formerly afforded ample food in the shape of wild fruits and the seeds of weeds naturally invites damage by birds. The cultivated fruits and grains in some cases seem even more attractive than the original food supply, and certain birds not only thrive greatly but also tend to concentrate where the new and abundant food supply gives assurance of easy living.

As time went on and the agricultural development of the country progressed, small isolated holdings increased in number and in time joined with others to make great areas of improved farm land. By this process not only were the birds diminished in numbers through continued encroachment upon

[23] Jour. Agr. Res., vol. 2, No. 3, June 15, 1914.

their breeding grounds but the corresponding expansion of crop areas tended to spread the damage inflicted by the remainder over so wide an area that losses to individual farmers were materially lessened.

What took place on the Atlantic seaboard in early Colonial days is now being continued, under somewhat different environmental conditions, on farms in the foothills of Colorado and California, on plantations bordering the virgin marshes of the Gulf Coast, and at numberless points throughout the country where man upsets the long-established relations of things. He takes away that upon which bird life has fed from time immemorial and often sets forth in its place a veritable banquet table. The result is inevitable, and there are reasons to believe that on the narrow borderland of agricultural advancement the interests of certain birds and man will long conflict.

Occasionally factors other than those mentioned account for bird damage in orchard and garden. A sudden increase in numbers and a resultant concentration of bird population are conditions productive of trouble even though the species involved may as a whole be a most commendable one. Within recent years there has occurred a marked increase in the robin population, owing doubtless to the protection now afforded the species in the Southern States during the winter months. Where formerly the raids made on winter robin roosts of the South served as an effective check, absolute protection has resulted in a remarkable increase, with the result that the producers of cherries and other small fruits in some sections of our Northern States have suffered damage of increasing seriousness. The worth of the robin at other seasons of the year and in areas where it is normally abundant is universally recognized. When it concentrates in great numbers, however, during the ripening season small fruits may be seriously damaged.

Sudden failure of a natural food supply may also lead birds, ordinarily harmless to prey on cultivated crops. Apparently such a circumstance was the cause of the influx of robins into the olive orchards of California in the winter of 1900–1901 and it may also account for some of the erratic wanderings of the pinyon jay resulting in visits to cultivated areas where ordinarily few are seen. Drought also plays an important part in guiding the wanderings and food preferences of birds, especially the fruit eaters. There are indications that the occasional depredations of the Cape May warbler on grapes has as its stimulus a desire for water, and in the arid regions of the Southwest, such birds as thrashers, orioles, and verdins are at times driven to fruit eating by a scarcity of water. The Lewis woodpecker of Oregon and Washington has a liking for fruit, which is unduly emphasized on certain farms that happen to lie in the direct route of migration of these birds from their breeding home to their wintering range. Here the species may become a serious pest, whereas in other sections its presence may scarcely be noticed.

No species has shown itself to be so universally destructive that it must be combated at all times, and it is manifest that bird damage in the orchard or garden is a local problem. Peculiar environmental conditions may so emphasize some minor preference that even the

most commendable of birds may occasionally be an offender. However, the number of species that become objectionable with any degree of frequency is relatively small.

Crows have been the source of considerable trouble in cherry, apple, prune, and apricot orchards and in the almond groves of our far-western States. Persian (English) walnuts and pecans, as well as such garden crops as melons and sweet corn, are not immune to their attack. Several species of jays have shown similar proclivities, and grackles have made inroads on crops of Persian walnuts, green peas and sweet corn. The robin of the East is our outstanding cherry thief, and the introduced starling has shown proclivities of the same kind. Grapes and other small fruits are at times attacked by the same two birds. The Bullock oriole, the magpie, and the house finch may become troublesome in the irrigated sections of the West and Southwest, and also occasionally such birds as thrashers and verdins. Sapsuckers of three species have been known to damage fruit trees by their feeding operations on the bark and cambium layer of growing wood, and that crowlike member of the woodpecker family, the Lewis woodpecker, has revealed marked frugivorous habits during its post-breeding migration. The ubiquitous English sparrow frequently becomes a garden pest, especially early in spring, when the tender sprouts of truck crops are an attraction, and, in the irrigated West, such normally harmless species as lark buntings and horned larks may become similarly troublesome.

In spite of such incriminating evidence one must not lose sight of the fact that not only may the farmer successfully combat some of these attacks and thus materially lessen or even avoid losses, but that many of these same offending birds have redeeming qualities that may more than compensate for the damage inflicted. There is also that great host of other species that seldom or never inflict damage to the products of the orchard or garden, many of which are continuously at work holding in check insect pests that, if not checked by birds and other natural enemies, would literally destroy agriculture.

Of the defenders of orchards few birds excel the cuckoos in their useful services. These birds, primarily caterpillar feeders, are special enemies of such pests as the tent caterpillar and the fall webworm. Woodpeckers, of which there are 24 species in the United States, specialize on wood-boring larvæ and hibernating insects secreted beneath bark. Ants, generally looked upon as close allies of plant lice, are preyed upon by practically all the woodpeckers, and flickers have shown a marked preference for them. Flycatchers of many species are common residents of orchards—these with the swallows, make continuous warfare on all flying insects. Nuthatches, titmice, and chickadees search diligently over the bark and smaller limbs for scale insects and plant lice, and vireos and warblers form the outer guard in the tree tops where a variety of insect life falls as their prey.

As protectors of the garden we must look to our ground-feeding species. The starling, itself an offender at times in both orchard and garden, is conspicuous because of its unrelenting war on cutworms and grasshoppers. Even the crow is a notable enemy of the wire-

worm and white grub. Meadow larks, grackles, and the multitude of native sparrows are largely ground-feeders that come in contact with garden-insect pests during the breeding season and exert a powerful restraining influence.

Birds of prey through their persistent warfare on rodent pests must also be looked upon as protectors of both orchard and garden. The barn, long-eared, and barred owls, and the red-tailed, red-shouldered, and Swainson hawks are conspicuous enemies of meadow mice, rats, pocket gophers, and rabbits.

To obtain some idea of the general influence of bird life upon agriculture and horticulture, one need only recall the number of avian enemies of certain important insect pests of orchard and garden. No less than 36 species of birds are known to feed on the codling moth. Their combined work has resulted, in some localities, in the destruction of from 66 to 85 per cent of the hibernating larvæ, good work that has had a pronounced effect in curtailing the spring broods of this pest. In the Southeastern States alone, 128 birds are known to prey on wireworms, destructive enemies of a number of crops, especially corn. Fifty-seven feed on white grubs, known in their adult stage as May beetles. Cutworms have to contend with more than 75 bird enemies, and such notorious garden pests as the cucumber flea beetle, and related forms, the Colorado potato beetle, and plant lice of many kinds, all must contend with numbers of bird enemies that are quick to detect any unusual abundance in such food supplies.

The many cases on record of effective insect control by the concerted efforts of birds can not but convince the prudent farmer that it is to his interests to encourage the presence of useful birds. Shelter, nest boxes, a water supply, and protection from enemies cost little and may yield much. With such things in mind the orchard may be made an admirable bird sanctuary, and its products as well as those of the garden will be benefited.

Rodents

Both the friends and the enemies of the horticulturist are included in the general group of rodents. Practically every kind of fruit, nut, and vegetable grown by the horticulturist is subject to damage by one or more species. Injury done in orchards and vineyards is especially serious because of their value and the long-time investment and culture which they represent. For example, over 1,000 apple trees 18 years old were killed in a single orchard by pine mice. Generally damage done by rodents is more or less seasonal, being associated with a shortage of the usual food supply caused by snows, or periods of drought and, in some cases, with special attractiveness of cultivated products to rodents. The general distribution of species of rodents injurious to fruit trees, bushes, and vineyards, and to crops produced on truck farms and vegetable gardens, the character of the injury done, and the determination and application of practical means of prevention, have been the subject of study by the Bureau of Biological Survey from the earliest organization of this work.

The root systems of fruit-bearing plants and vegetables are attacked chiefly by pocket gophers and pine mice. In a Texas

nursery 90 per cent of the pecan seedlings were killed by pocket gophers.

The trunks or branches of trees and vines and the surface portions of vegetable crops are attacked by meadow mice, cotton rats, kangaroo rats, woodchucks, mountain beavers, porcupines, and the various species of rabbits, such as jack rabbits, snowshoe and cottontail rabbits, and the European hare. Fruits and nuts on the tree may be destroyed by tree squirrels, chipmunks, and various species of ground squirrels. House rats, while at times doing damage in the field to various fruit and vegetable products, are especially destructive to horticultural products stored in cellars, root houses, and warehouses, during shipment in freight and express cars, or when held in market places. Damage may be continued in the individual homes, even to cupboard and pantry shelves. Inspection to detect the presence of destructive rodents or to note the first signs of injury to the plants, and application of suitable control measures should be regular features each year of the care of orchards, vineyards, truck farms, and gardens.

Pocket gophers.—Pocket gophers dig their runways extensively under ground, throwing up mounds of dirt at intervals. These animals must be guarded against at all seasons as they are active throughout the year. They attack the roots of practically all fruit and nut trees and also vines. In California, one hundred 3-year-old apricot trees were thus killed in a 40-acre orchard. Damage to citrus, apple, and date trees has proved serious wherever these pests occur. In one county in California 25,000 orange stocks were required during one season to repair trees girdled by pocket gophers. They may cut off practically the entire root system before passing on to another plant. Sometimes only a portion of the roots will be cut off, which deprives the plant to this extent of its fruit-producing possibilities and opens wounds for the entrance of disease-producing organisms. Pocket gophers are also exceedingly fond of vegetables, such as sweet potatoes, carrots, and parsnips, and may destroy row after row of root and tuber products. The only hope of preventing losses from their subterranean attacks is by the use of traps or poisons to destroy all pocket gophers found at work in orchards, nurseries, vineyards, truck farms, or vegetable gardens and to see that none gain entrance from the outside. In irrigated areas, the burrows of pocket gophers cause breaks in canal banks and laterals. On an irrigated project in New Mexico, 95 per cent of the breaks in laterals were caused by pocket gophers. They also divert water during distribution so that some trees receive insufficient water and others are killed by an excess.

Control measures.—Pocket gophers are readily caught in special traps commonly found on the market, and a few of these set in the entrance of burrows serve to keep small areas free of the pests. For ridding large orchards, and long stretches of levees or irrigation ditch embankments of these pests, a more practical method is to poison them by use of baits of sweet potato, carrot, parsnip, clover, alfalfa, or oats placed in their underground runways. The vegetable baits should be cut in pieces about 1 inch long and one-half inch square. The poison preparation recommended consists of powdered strychnine alkaloid and an equal quantity of baking soda, the two

ingredients being thoroughly stirred to insure a uniform distribution of the poison. In using it, one-fourth ounce of the mixture is sufficient for treating 3 quarts of freshly cut bait. A pepper box can be employed in sifting the poison over the bait. Good results may often be obtained by using oats poisoned as for ground squirrels, a tablespoonful being placed in the pocket-gopher runway in the same manner as the vegetable baits. One ounce of powdered strychnine alkaloid dusted over 10 pounds of fresh green clover or alfalfa leaves is effective against some species, a quantity equal to 2 or 3 dozen leaves being used for each bait.

The runways, which are usually 4 to 8 inches beneath the surface, can be located by means of a probe made of a strong handle an inch in diameter and 30 inches long. One end should be bluntly pointed. Into the other should be fitted a piece of ¼-inch iron rod, protruding about 15 inches, and bluntly pointed. A foot rest aids in probing in hard soils. By forcing down the iron rod near gopher workings or a foot or two back of fresh mounds, the open tunnel can be felt as the point breaks into it. The blunt end of the instrument is then used carefully to enlarge the hole so that the bait may be dropped into the main runway, not in the laterals, and the probe hole closed. A shovel or trowel may be used to open the runway, but care must be exercised not to disturb it unduly or cover up the bait when closing the hole.

One soon becomes expert in locating the runs and can treat 300 to 500 pocket-gopher workings in a day. Baits need be placed at only two points in each separate system of 10 to 30 mounds, which is usually the home of a single pocket gopher. Some trapping may be required to kill animals that refuse to eat the poison.

Pine mice.—Pine mice which are small, reddish colored, short-tailed, burrowing forms, gnaw the bark from the roots and cut off smaller rootlets, thus reducing the bearing capacity and killing great numbers of trees. They kill young trees in nurseries, but their attacks are not limited to these, as great numbers of trees in full bearing, even those 40 years old, are killed by the attacks of these animals. (Fig. 288.) They are also fond of practically all tuber and root crops, such as potatoes, sweet potatoes, beets, carrots, and turnips, while numerous bulbs are also destroyed by them. They usually start their attack upon tree roots early in the fall, but under somewhat unusual conditions may do this even during the summer. Usually, the principal damage occurs after inclement weather and snowfall when they find it more difficult to obtain their natural food of grass roots and the bulbs of various wild plants.

Control measures.—For these mice, mechanical protectors placed above ground are of no value, for only by destroying the mice can protection be obtained. Placing poisoned baits in orchards should be a regular part of their care, especially during times of drought and in the fall. Poisoned grain should be distributed in containers so constructed of wood, glass, tile, or metal as to protect the grain from storms and moisture, but permit mice to enter and feed readily. (Figs. 289 and 290.)

For this purpose mix together, dry, one-eighth ounce each of powdered strychnine alkaloid and baking soda. Sift the strychnine-soda mixture over 1 quart of rolled oats, stirring constantly to insure

even distribution of the poison through the grain. Thoroughly warm the poisoned rolled oats in an oven and sprinkle over them 6 tablespoonfuls of a mixture of 3 parts of melted beef fat and 1 part of melted paraffin, mixing until the oats are evenly coated. When the grain is cool it is ready for use.

For larger quantities use (in the proportion) 1 ounce of strychnine, 1 ounce of soda, 8 quarts of rolled oats, 1¼ pints of the beef-fat-paraffin mixture. Teaspoonful quantities of the poisoned rolled oats should be placed in the small containers or stations and distributed near the base of the trees to be protected or over the infested areas. Teaspoonful quantities may also be scattered along runways and within the entrance of the burrows. The starch-strychnine paste

FIG. 288.—Usual type of pine-mouse injury to large fruit trees. The soil has been removed before photographing in order to show the otherwise hidden injury by this mouse

described for ground squirrel control may also be used to advantage by applying this to 12 quarts of wheat or 20 quarts of whole oats or steamed crushed oats, mixing thoroughly, so that each kernel is coated.

An effective vegetable bait may be prepared by cutting sweet potatoes into ½-inch cubes and treating them with the same poison mixture and used at the same rate as described for the control of pocket gophers (p. 588). Use the bait while it is fresh by dropping one or two pieces into mouse tunnels through natural or artificial openings. It may also be scattered at the base of trees or in other places frequented by mice.

Meadow mice.—Meadow mice of several kinds occur. They are found usually in surface runways and nests. Mechanical devices made of fine-mesh wire netting, wooden veneer, and other wrap-

pings and washes are often employed with good effect to protect trees. Elimination of cultural practices favorable to the increase of mice by affording them food and shelter and the regular use of

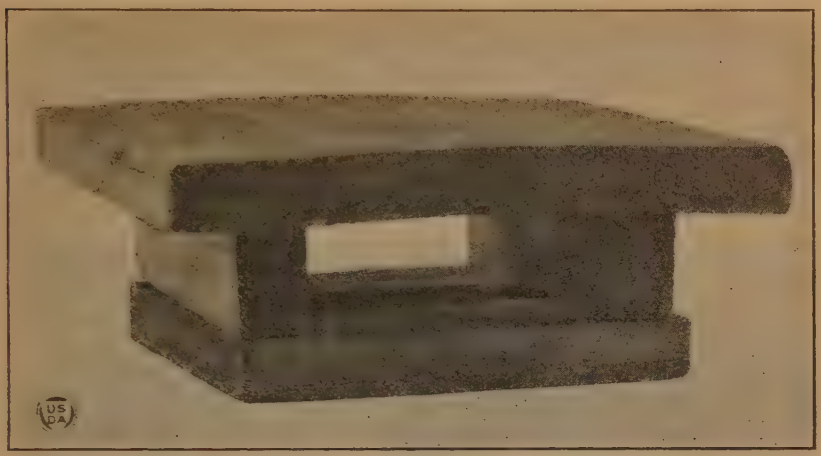


FIG. 289.—Simple wooden poison station for field mice, made of 1-inch material, the top 8 inches and the bottom 6 inches square, and the side strips 1½ inches high. An important feature of this station is the one-half inch depression or groove to hold the poisoned bait, shown (darker) in the floor

poisoned baits as described for pine mice are the most satisfactory methods of preventing damage by these rodent pests.

Rabbits.—The various kinds of rabbits are usually controlled by shooting, trapping, poisoning, and drives. The traps mainly em-

FIG. 290.—Poison stations made (*A*) of glass and (*B*) of tile. Others may be made by utilizing wide-mouthed glass bottles, glass jars, or tin cans, although wooden stations seem to be entered more freely

ployed for cottontails are the old-fashioned box traps, such as those set with a figure-4 trigger, with cord attached to hold up the box lid. A number of modifications of this trap have been made and a considerable number of other traps have been designed for this pur-

pose. Rabbit-proof fences made of a netting of galvanized wire of 1½-inch mesh and about 3 feet high are probably the most effective means of excluding these animals from nurseries, orchards, truck farms, and vegetable gardens.

Mechanical protectors placed about the trunks of the trees in orchards often afford a considerable measure of protection, but snows may cover these, permitting the rabbits to feed on the trunks and limbs above. For cottontails, poultry netting of 1-inch mesh and 18 inches wide is used. The wire is cut in about 1-foot lengths, rolled into cylindrical shape about the trunk of the tree and fastened by bending over projecting ends of the wire where they interlock. (Fig. 291.) Veneer and other wooden protectors are found useful, as well

FIG. 291.—Wire screen of ¼-inch mesh for protection from mice and rabbits, showing also method of clearing shelter away from trees

as heavy building paper, gunny-sack, or other cloth wrappings used to make a sheath about the base of the tree of sufficient height to prevent rabbits from gnawing the bark. For jack rabbits and in regions of heavy snow fall, a height greater than 18 inches for the mechanical protector is required.

Protective washes are often dangerous to young trees and many of them are not sufficiently permanent to afford protection for an entire winter, thus necessitating further applications. One of the most satisfactory mixtures consists of 1 part of creosote oil to 2 or 3 parts of coal tar. This may be applied to the trunk of the tree by means of a brush. It is injurious to the soft bark of seedlings up to about 2 years of age and may also injure larger trees if allowed to extend below the ground surface. Undiluted lime-sulphur solu-

tion is useful, but it is effective only a short time and must be renewed several times during an average winter. Addition of a pound of glue to a gallon of the concentrated lime-sulphur adds somewhat to its durability.

Control measures.—The following poison preparations have proved effective in destroying rabbits:

Poisoned alfalfa leaves: Dissolve 1 ounce of strychnine sulphate in 2 gallons of hot water and sprinkle over 10 pounds of alfalfa hay leaves, mixing the leaves thoroughly until all moisture is absorbed. The poisoned leaves should be distributed in small handfuls in lines a few feet apart across portions of fields where observations made at night show the rabbits to be feeding. Poisoned alfalfa should be distributed only in places from which stock is excluded. Such places should be baited with a small quantity of clean alfalfa hay a few nights previous to poisoning in order to get the rabbits accustomed to feeding there. In localities where alfalfa is not raised, rye, wheat, barley, and emmer heads or sheaves of the grain may be substituted. (CAUTION.—Great care must be exercised in using these materials as they are likely to be eaten by livestock.)

Poisoned oats: Mix 1 tablespoonful of starch in one-half cupful of cold water and stir into 1 pint of boiling water to make a thin, clear paste. Mix 1 ounce of powdered strychnine with 1 ounce of powdered bicarbonate of soda (baking soda), and stir with the starch to a smooth, creamy mass. Stir in 1 teacupful of table salt. Apply to 12 quarts of good, clean oats and mix thoroughly to coat each kernel. Distribute as in directions for use of poisoned alfalfa leaves, using a large tablespoonful at each place. Each quart should make 25 to 30 doses. A clear, cold night, when snow is on the ground and the natural food supply of the rabbits is scarce, is the best time to expose this poison.

Poisoned salt: When rabbits are feeding chiefly on succulent green crops such as growing grain or alfalfa, there is considerable craving for salt and good results may be obtained by a mixture in proportion of 1 ounce of strychnine alkaloid to 16 ounces of fine salt. Teaspoonful baits may be placed on clean, hard surface, in jar lids spiked to the ground, or in pieces of 2 by 4 joist in which 1-inch auger holes have been bored for a short distance. Care should be exercised in the use of poisoned salt to prevent domestic animals from having access to it. Rabbits may also be poisoned by inserting crystals of strychnine in pieces of apple or melon rind and placing these baits at intervals along their runs or paths.

Where fruit trees have suffered root or trunk injury as by rabbits or pine mice, bridge grafting [24] or the use of nurse trees planted at the side of the injured tree and grafted into it by inarching above the injured area will usually enable the tree to recover (figs. 292 and 293.)

Ground squirrels.—The various species of ground squirrels may be most readily controlled by the use of poisons and fumigants. For poisoning, dissolve 1 heaping tablespoonful of dry gloss starch in a little cold water and add three-fourths of a pint of hot water; boil and stir constantly until a thin, clear paste is formed. Mix together 1 ounce each of powdered strychnine alkaloid and baking soda, sift

[24] Bridge grafting is fully described in Farmers' Bulletin No. 1369.

into the hot starch paste and stir constantly to a smooth, creamy consistency. Add one-fourth pint of corn sirup, 1 teaspoonful of glycerine and one-tenth ounce of saccharine, stirring thoroughly. Pour this mixture over 10 to 20 quarts of oats, barley, oatmeal, or steamed rolled oats, and mix until the poison is evenly distributed through the grain. Other grains may be used instead of those suggested, where available and the animals show a preference for them.

FIG. 292.—An apple tree two or three years after it was bridge grafted as a means of saving it following rabbit girdling

FIG. 293.—A girdled apple tree with small seedling or nursery trees planted at its base, and the tops grafted by inarching to the trunk of the tree above the girdled area. The view shows the grafting completed except applying wax thoroughly to all cut surfaces that are exposed to the air. The tops of the small trees above the points of contact with the trunk of the girdled tree are left until after the parts have grown together, when they are cut off close to and immediately above the union

In poisoning Columbian ground squirrels and other species which hull the grain very skillfully in eating, 3 tablespoons of flour made into a creamy paste by adding a little cold water and stirring thoroughly may be used in place of the starch paste. About 1 teaspoonful of this preparation should be put in a place, either on hard ground near their burrows or along their runways. These poison preparations are also effective against cotton rats and kangaroo rats in the South.

Carbon disulphide may be used as a fumigant to destroy the animals in their burrows. About 1½ tablespoonfuls of this ma-

terial should be poured on a small piece of cotton waste, shoddy wool, or other cheap absorbent material and placed well down into the burrow. The mouth of the burrow should be immediately closed with a shovelful of earth or sod, thus asphyxiating the occupants of the burrow. Every burrow showing evidence of being used should be treated with an application. About 1 gallon will be required for 200 holes. Crude calcium cyanide, used in the form of dust or flakes, is effective in fumigating burrows of certain ground squirrels, such as the Columbian. An ounce of the dust may be blown into the burrow by the use of a portable blower. The same quantity of the flakes may be placed down in the mouth of the burrow by the use of a long handled spoon. With this method it is usually not necessary to close the holes.

Woodchucks or ground hogs.—Woodchucks, or ground hogs, may be destroyed most readily in the Eastern States by fumigating their burrows with carbon disulphide or crude calcium cyanide. About 1½ ounces (3 tablespoonfuls) of carbon disulphide should be poured on a piece of cotton or other absorbent material and placed as far down into the burrow as possible, after which the entrance should be tightly closed with sod or damp earth. In using calcium cyanide flakes, place 1 tablespoonful well down into the mouth of the burrow, after which it may be closed or left open. Either procedure is very effective, but an occasional animal may escape the first fumigation and, if the holes are closed when treated, those reopened will indicate the ones that should be retreated.

In many sections of the West fumigation is not practicable owing to the character of the places in which woodchucks live. Under these circumstances the animals may be controlled most readily by the use of poison prepared and distributed in the following ways:

Poisoned grain: Mix 1 tablespoonful of gloss starch in one-half teacupful of cold water and stir into one-half pint of boiling water to make a thin, clear paste. Mix together 1 ounce each of powdered strychnine alkaloid and baking soda and stir with the starch into a creamy mass, beating until the mixture is free of lumps. Add one-fourth pint of heavy corn sirup, 1 tablespoonful of glycerin, and 1 teaspoonful of saccharine dissolved in a little warm water. Beat the starch mass again and then pour it over 12 quarts of oats in a tub or tight box, mixing thoroughly or until there are no dry kernels. Four tablespoonfuls of salt added to the boiling water before making the starch will increase the effectiveness of the poison during the crop-growing season. Only good, heavy, recleaned oats should be used for this bait. In distributing the poisoned grain, place a handful in a place, on a clean, hard surface close to the den or burrow. These marmots pay no attention to scattered grain.

Poisoned green alfalfa: A very satisfactory bait can be made by the use of green alfalfa. Mix dry, 1 ounce powdered strychnine alkaloid with one-eighth ounce of powdered saccharine and place in a pepper box, properly labeled. Dust this mixture over about 20 pounds of freshly cut alfalfa tops which have first been moistened with a solution made of 2 parts corn sirup and 1 part water. Place the baits (a handful to a place) near burrows, trails, and lookout points.

Poisoned salt: Mix 1 ounce of strychnine alkaloid with 12 ounces of table salt. Place salt on clean, hard surfaces, a teaspoonful to a bait, or in jar lids spiked to the ground. The bait is best exposed in fields where ground hogs are feeding.

CAUTION: Care must be taken to place all of these baits out of the reach of livestock.

Porcupines.—Porcupines may be most readily controlled by shooting individual animals that are found doing damage. They may also be trapped readily by using steel traps baited with bits of meat, fruit, vegetables, or other material of which they are known to be fond.

Mountain beavers are also controlled readily by trapping and poisoning. No. 1 steel traps should be baited with apple and be set well down the hole or burrow. In poisoning, sliced apples or apple peelings dusted lightly with powdered strychnine alkaloid are placed at the entrance of holes or along runways.

House rats and mice.—Means for the control of house rats and mice consist of the use of traps, poisons, fumigants, deterrents, and rat-proof construction and repair of buildings so as to exclude them. Many effective traps are on the market, but those commonly known as "snap" or "guillotine" traps have proved most generally adapted for use against rats and mice. Traps should be baited with attractive food, such as bread, fried bacon, raw or cooked meats, fish, nut meats, cheese, apples, or carrots. Sprinkling rolled oats over and about the trap adds to its effectiveness. Traps should be set along runways and at points where the animals seek concealment and in such a way that they are likely to run over the trigger of the trap even when not attracted by the bait. Many artifices in concealing traps may be adopted, and intelligence and persistency are required to outwit these animals. Be sure to use sufficient traps.

Where it is practicable to employ poisons, the use of barium carbonate in the following way is recommended. Select a bait from each of the following three classes and mix powdered barium carbonate with it in the proportion of one part (by weight) of poison to four parts of bait (adding water when necessary to make baits moist): (1) Meat, such as hamburg steak, sausage, canned salmon, sardines, etc.; (2) fruits or vegetables, apple, tomato, melon, etc.; (3) cereals, bread, rolled oats, etc.

Wrap teaspoonful quantities of the three kinds of poisoned baits separately in small paper bags or in small squares of newspaper and put one of each kind in places where rats are apt to feed. Remove and destroy uneaten baits each morning and put out fresh ones in the evening. Continue this until all rats are gone. Other foods should be removed or made inaccessible to rats before poisoned baits are distributed.

Where rats occur in burrows, as around garbage dumps and similar places where fumigation is practicable, they may be destroyed in large numbers by the use of carbon disulphide or calcium cyanide applied as in the case of woodchuck burrows, or the calcium cyanide dust may be forced into their burrows by means of a dust blower.

A ready means of destroying rats in burrows is to direct the exhaust gas from an automobile or other gas engine into the burrows by means of a hose. The opening should be filled in around the hose

with moist earth and the engine operated at moderate speed for 10 minutes or more. In houses or other places where the odor will not prove objectionable the use of flake naphthalene scattered about liberally has a tendency to prevent infestation with rats and mice.

Among the most important measures in obtaining relief from these animals is the employment of means to exclude them from buildings and from food or other supplies likely to be damaged by them. Fine-meshed wire netting may often be employed to encase storage places. By means of tight-fitting doors and the use of cement, metal strips, and wire netting at points where these animals may gnaw through or otherwise gain access to a building, their entrance can be prevented at very moderate cost.[25]

Predatory Animals

A certain amount of interest attaches to the various species of predatory animals in connection with fruit and vegetable production. Species such as coyotes and foxes frequently do excessive damage by feeding upon grapes, muskmelons, and other succulent products. Skunks, though usually beneficial, at times feed upon fruits, especially berries.

It has been very generally believed that considerable reliance could be placed upon predacious species such as coyotes and foxes to prevent damage by injurious rodents. It is well-known that they feed to a considerable extent upon mice, ground squirrels, and rabbits, thus exerting a repressive influence. It is a mistake, however, to place reliance upon these animals as a means of protection against rodents. If they are feeding chiefly upon rodents, this very fact implies the occurrence of rodents in dangerously destructive numbers, which makes it necessary to resort to positive measures such as the use of poisons or traps in order to prevent them from doing excessive damage while the predacious animals are feeding upon a relatively small proportion of those present.

Where predatory animals are found to be doing damage, they may be most readily disposed of by the use of traps and poison. Steel traps of suitable size and design are usually preferred. For small animals such as skunks, No. 1 or No. 2 traps are satisfactory, while No. 3 traps should be used for animals the size of the fox or coyote. Traps are usually fastened securely by a chain to a wooden or iron stake driven into the ground or the chain is equipped with drag hooks. They are usually set along trails, runways, or other places known to be frequented by the animals sought.

Traps should be concealed with a light coat of dirt, care being taken to cover and support the pan so that its action will not be interfered with and to see that there is nothing to prevent prompt action of the spring and jaws of the trap. After completing the set, the ground should be brushed very lightly so that the place will have a natural, undisturbed appearance. Care must be exercised not to leave anything about that will arouse the suspicion of the animals and cause them to avoid the place.

Baits consisting of small animals or other attractive foods are often employed, but scent baits are usually more effective. A scent

[25] See Farmers' Bulletin No. 1302, "How to Get Rid of Rats."

bait that is attractive to many animals is made of fish, the oily varieties such as sturgeon, eel, trout, sucker, and carp being preferred. The flesh should be ground in a sausage mill, placed in a strong tin or iron can, and left in a warm place to decompose thoroughly. The can must be provided with a small vent to allow escape of gas, otherwise there is danger of explosion. The vent must be screened with a fold of cloth to prevent flies from depositing eggs. This scent may be used within three days after being prepared, but is better after standing about 30 days. Addition of new material from time to time serves to improve the mixture.

For poisoning predatory animals, strychnine is generally preferred. It may be used in capsules, in the form of tablets, or in the granular or paste forms prepared by the Bureau of Biological Survey. About 1½ grains of strychnine are used for animals the size of a coyote, the quantity being correspondingly smaller for smaller animals. Pork fat, beef suet, and fat from horses and sheep make attractive baits. Lean and dried meats may also be used. These may be ground and molded into pellets or cut into chunks small enough to be swallowed without chewing. The poison should be placed in the bait, either by making a pit in the side or by splitting open sandwich fashion. After putting the poison in place, the opening should be closed securely with scrapings of fat. The baits should be carefully distributed about "feeding stations," consisting of small carcasses or places known to be frequented by the animals sought. Special trails may be made by dragging a piece of carcass, fresh meat, or similar substance along the ground, the bait being dropped along the trail as made. Utmost care must be exercised in distributing these poisoned baits to avoid killing dogs or other domesticated animals or the unintentional destruction of valuable fur bearers. Baits not taken by the animals should be gathered up and destroyed.

Other Animals

Moles, which are small, soft-furred animals with long slender snout and front feet conspicuously flattened as digging tools, frequently invade gardens, truck farms, and lawns, doing extensive damage by lifting up the soil as they excavate their runways and burrow about in search of food. Their food consists principally of earthworms and insects but they may also eat softened and sprouting seeds, such as peas and corn. Gnawing vegetables, roots, and bulbs by mice or other rodents is often wrongly attributed to moles. Trapping moles with traps specially designed for this purpose is the most reliable way known to prevent damage by them.

Land crabs and crawfish do extensive damage by cutting off young plants, especially tomatoes. Fumigation of their burrows with carbon disulphide is the most practical way to destroy them. Ten drops of carbon disulphide should be placed well down the opening, which is then closed by a sharp pressure with the heel or use of a small piece of sod where the soil is hard. A small-mouthed can or bottle may be used to carry the liquid, which is applied with a medicine dropper, a glass syringe, or a long-nozzled oil can. Where the oil can is used the nozzle should be flattened so that the liquid will drop slowly. When carefully applied, a gallon of car-

bon disulphide will treat about 5,000 holes. As carbon disulphide is highly inflammable and explosive, due care should be exercised in using it to keep fire away.

The gopher turtle, Florida gopher, or salamander occurs over a wide range in the Southern States, but is most common on sandy ridges in central Florida, and often does considerable damage to crops such as beans, peanuts, and sweet potatoes. Pit traps have been employed in efforts to destroy them, but this method is slow and laborious. Recent investigations indicate that these animals also may be destroyed in their burrows by introducing from 2 to 3 ounces of carbon disulphide well down the burrow, which is then tightly plugged about 18 inches below the surface.

Certain reptiles and amphibians deserve notice as enemies of garden and fruit insects. These animals are not directly injurious to orchards and gardens, and in most cases all will be found to have a useful relation to the fruits and vegetables. Some of the snakes are the most relentless foes of those meadow and other mice which are serious enemies of trees. Other snakes, lizards, frogs, and toads include considerable proportions of insects in their diet and daily prove themselves friends of man. The common toad, especially, is a voracious feeder on garden insects, and has a splendid record against such pests as the potato beetle, cucumber beetle, flea beetle, squash bug, and others. Toads are so appreciated that they are sometimes introduced and confined in gardens to obtain the advantage of their destruction of insect pests.

HORTICULTURAL MANUFACTURES

L. C. Corbett, J. S. Caldwell, William Stuart, and W. R. Beattie, *Bureau of Plant Industry, and* L. B. Flohr, *Bureau of Agricultural Economics*

THE MANUFACTURE of horticultural food products in the United States has two fairly distinct phases: (1) As a basic industry occupying the entire time of those engaged in it and employing selected raw materials grown specifically for the purpose, and (2), as a secondary industry engaged in by growers and others, individually or in groups, as a means of conserving surplus products grown for the general market.

Canning and other phases of horticultral manufacture as a basic industry had its beginning during the early seventies, but its greatest growth has occurred during the last 20 years (fig. 294.) The manufacture of horticultural food products has become highly specialized and is located primarily in areas that are adapted to the production of the materials used in the various manufacturing processes. Horticultural manufactures as a basic industry has in a measure grown out of market production as it first utilized surplus products grown for the market, later developing into basic production primarily for manufacturing purposes. The development of horticultural manufacturing as a secondary industry has covered a larger area and may be found in any district in which fruits and vegetables are extensively grown, and it develops as soon as production has outgrown the absorbing capacity of the accessible markets. Increased attention to standards of appearance and quality of the raw product then begin to leave upon the hands of producers a portion of the crop which has undiminished food value but which does not meet market standards in size or appearance, together with varying quan-

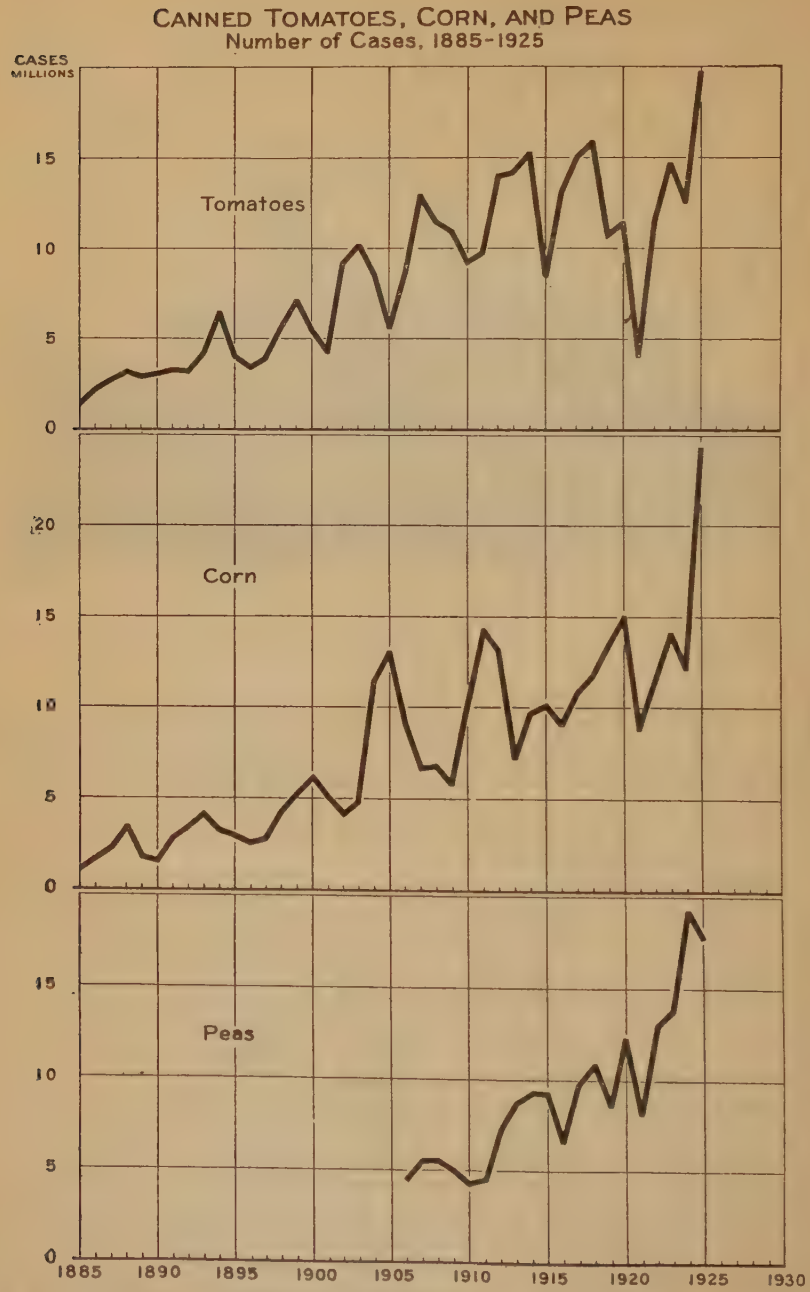


FIG. 294.—Increase in production in number of cases of tomatoes, corn, and peas during the period from 1885 to 1925, inclusive

tities of standard grades. The margin of profit realized from the marketable portion at the same time becomes narrower. In consequence, various means of obtaining some financial return from the unsalable portion of the crop begin to engage the attention of the growers. Small manufacturing establishments are built and operated by individuals or small groups of growers as an incidental part of their business, primarily to obtain a cash return from the unmarketable portion of their own crops. Much disappointment and financial loss usually attend the initial ventures of growers into this field, since the material available for use consists of a large number of varieties of widely varying character, so that the making of uniform, standardized products is an impossibility.

As experience accumulates the materials grown in the territory are subjected to a rigid selective process, and manufacturing effort is centralized upon such varieties as have been found especially adapted to the making of commercially acceptable products. These varieties may, and indeed generally do, differ markedly from those which are favorites with the public as fresh products. "Canning quality" or "drying quality" is a very different thing from table or dessert quality; the material must be one which will pass through the manufacturing processes with the retention of satisfactory physical appearance and flavor, and many of our choicest table and dessert varieties are unable to endure this test.

For this reason the development of the manufacture of fruit and vegetable products to a position of importance in any territory results in a sharp differentiation between the growing of materials for manufacturing purposes and the growing of fruits and vegetables for market. This is especially true for the canning industry, in which the selective process just mentioned has been longest in operation. From the multiplicity of varieties of a given fruit or vegetable grown in his district, the canner selects a small number, sometimes a single one, possessing the combination of characters which he regards as most desirable in the finished product, employing these selected varieties to the exclusion of others. In the case of vegetables, many canneries grow their stocks of seed from selected strains with as much care to prevent contamination as is exercised by the best seedsmen. These selected seeds are supplied under contract to growers who deliver the crop to the cannery.

In fruits an equally rigid selection of varieties is made, with the result that in a region in which canning becomes an important industry, the newer plantings of tree or bush fruits are made with reference to the requirements of the canners. As a consequence of the employment of selected varieties, the growing of crops for canning is so far divorced from the growing of fruits and vegetables for market that only in exceptional cases can the grower choose between placing his crop on the market for fresh products and delivering it to the cannery. For the same reason, the establishment of a cannery in a district can offer little immediate relief for the problem presented by a surplus of miscellaneous perishable crops. The cannery encounters very strong competition in a field in which standards of appearance and quality are constantly being elevated, and it would be business suicide to pack materials as they came to hand without reference to maintaining uniformity in the product.

Horticultural Manufactures as a Basic Industry

Horticultural manufactures as a basic industry includes drying, canning, preserving, pickling, the making of fruit juices, vinegar, and the manufacture of potato starch.

Drying as a basic industry has been most highly developed in California where the possibility for employing the sun's heat gives a unique advantage in developing this industry. With conditions permitting the profitable large-scale production of a wide variety of fruits, some of which are not grown elsewhere in the continental United States, the distance from great consuming centers has necessitated considerable specialization upon varieties suited to drying or other methods of preservation. California has a monopoly upon the production of raisins, dried apricots, peaches, and pears; it also furnishes much the larger portion of the dried prune crop, smaller quantities originating in Oregon, Washington, and Idaho. Table 1 shows the development of the dried fruit industry from 1899 to 1921. By reason of the simple and relatively inexpensive equipment required, sun-drying of these crops is practically wholly carried on by the growers. In the last three or four years heavy losses of raisins and prunes, owing to unfavorable weather during the drying season, have led to much interest in methods of dehydration by means of artificial heat and to a rather rapid increase in the number of dehydrating plants, but they are as yet mainly confined to the larger ranches and to commercial concerns which purchase fruit from growers or do custom drying at a fixed rate per ton.

TABLE 1.—*Distribution and extent of the drying industry by 10-year intervals, 1899–1919, with figures for 1921*

	1899	1909	1919	1921
Apples:	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Arkansas	1,402,000	1,571,945	6,720,070	
California	3,087,220	6,860,170	15,477,039	15,075,644
Illinois	1,424,149	201,200	274,354	
Indiana	101,000			
Iowa	26,100			
Kentucky	90,000			
Michigan	4,418,453	1,982,611		
Missouri	116,900			
Nebraska	6,600			
New Hampshire	53,750			
New York	21,542,897	33,652,115	13,524,019	3,069,925
Ohio	269,500			
Oregon	37,250		1,577,441	1,378,244
Pennsylvania	570,490	298,750		
Tennessee	13,000			
Virginia	53,000		1,274,125	
Washington			4,044,090	1,924,742
West Virginia			203,000	
All other States		5,553	3,529,461	
Total	33,213,209	44,568,244	46,623,599	21,448,555
Apricots:				
California	5,310,217	29,205,569	23,944,612	21,812,008
Illinois	155,000			
All other States			248,016	
Total	5,465,217	29,205,569	24,192,628	21,812,008
Prunes:				
California	24,102,329	118,917,876	114,324,446	107,138,122
Oregon	360,100	14,009,597	19,980,935	14,039,179
Washington	286,000	5,445,017		
All other States	665,334	126,000	2,121,685	3,264,375
Total	25,413,763	138,498,490	136,377,066	124,441,676

TABLE 1.—*Distribution and extent of the drying industry by 10-year intervals, 1899–1919, with figures for 1921*—Continued

	1899	1909	1919	1921
Peaches:	*Pounds*	*Pounds*	*Pounds*	*Pounds*
California	5,502,390	46,827,391	73,268,010	35,406,706
Illinois	160,000			
All other States		16,000	111,183	
Total	5,662,390	46,843,391	73,379,193	35,406,706
Raisins: California	10,734,221	111,774,767	293,300,581	275,282,354
Dried vegetables			10,345,821	3,766,240

Dried fruits.—Drying as a basic industry, in the sense that the material employed is grown specifically for the purpose, is practically confined to the five crops—apricots, raisins, prunes, peaches, and pears (figs. 295 and 296). The material employed in the manu-

FIG. 295.—Gathering prunes for drying. The prunes are hauled and spread on trays to dry in the sun or are handled in an evaporator

facture of other dried or evaporated materials is for the most part composed of the lower grades, and the business is on a strictly by-product basis as the volume and the quality of the raw material employed varies from year to year with the size of the crop and the range of prices to be realized in the fresh-fruit market.

The statistics upon the production of evaporated apples show a general reduction or discontinuance of production in the Eastern and Southern States, with the exception of New York and Arkansas, and an accompanying increase in California and the Pacific Northwest. Lessened demands from foreign markets since 1919 have resulted in very considerable reduction of commercial production

of evaporated apples during the last five years in all the producing States. The same condition has operated to prevent increases or to bring about actual decreases in production of other dried fruits, with the single exception of raisins. The rapid increase in production and value of the raisin crop is noteworthy (Table 1 and 2); in 1919 the value of raisins alone considerably exceeded the total value of all dried fruits in 1914, and in 1919 it had a value of 66.8 per cent of the total.

FIG. 296.—Prune evaporator in which the fruit is dried by means of heated air

TABLE 2.—*Value of principal dried products by five-year intervals, 1899 to 1919, with figures for 1921*

	1899	1904	1909	1914	1919	1921
Apples	$1,906,642	$1,758,610	$3,098,095	$2,889,406	$6,772,100	$2,799,891
Apricots	455,394	1,410,836	2,277,177	3,615,857	6,034,697	3,385,044
Peaches	312,495	1,702,205	2,423,083	2,915,595	12,109,624	4,165,932
Prunes	970,927	3,299,628	5,130,412	9,004,348	18,253,691	10,097,515
Raisins	1,062,268	6,349,381	6,912,533	13,938,645	35,544,262	47,561,535
All other	49,279	1,144,122	2,073,695	2,408,061	6,686,911	3,162,891

Dried vegetables.—The drying of vegetables had been carried on in a small way for many years, but figures upon production were not gathered by the Bureau of the Census until 1919. In that year 10,345,821 pounds of dried vegetables having a value of $2,642,655 were reported. In 1921 the production was only 3,766,240 pounds, with a value of $453,149. The drying of vegetables was promoted as a war measure but was largely discontinued following the year 1919.

Canning Fruits and Vegetables

The period 1899 to 1919 was one of rapid and uninterrupted growth in the canning industry, particularly the canning of fruits and vegetables as shown in table 3. Expansion went on very rapidly during

the World War, maximum production being attained in 1919, the year of the last decennial census. A period of industrial depression followed, its climax coinciding with the unfavorable crop conditions and partial failure of the fruit crop in 1921, in which year the last available census of manufactures was taken. Neither year is typical, one showing production considerably above, the other materially below the average. (Table 4.)

TABLE 3.—*Value of principal canned products by five-year intervals, 1899 to 1919, with figures for 1921*

	1899	1904	1909	1914	1919	1921
Asparagus			$1,975,775	$2,790,817	$6,571,629	$5,137,372
Beans	$2,025,123	$4,133,810	7,931,737	16,565,021	39,408,603	30,711,958
Corn	8,191,383	15,952,386	10,332,136	13,923,057	35,532,007	19,549,766
Peas	4,405,673	7,928,791	10,247,363	15,089,047	25,073,220	22,953,181
Sweet potatoes	124,245	284,385	531,651	736,750	2,477,719	1,807,735
Spinach			294,414	736,686	2,338,497	2,086,839
Tomatoes	13,666,560	14,020,846	18,747,941	25,532,217	38,067,999	12,508,654
Apples	1,125,119	738,013	1,898,720	2,392,289	9,081,598	7,747,923
Apricots	1,583,252	1,641,919	1,825,311	3,060,626	25,167,767	4,314,132
Cherries	307,788	825,522	1,019,013	1,628,975	8,451,029	4,481,083
Peaches	4,283,165	3,902,441	3,753,698	9,585,773	46,516,225	23,865,076
Pears	2,188,201	2,192,910	1,833,214	3,853,700	14,202,963	7,538,673
Berries	1,092,975	1,058,659	1,754,927	3,102,245	16,449,126	5,783,116

The development of the industry during the last quarter century has been accompanied by a great expansion in the number of products packed and by considerable shifting of the centers of greatest production. The rapid development of the fruit-growing districts of the Pacific coast has transferred the center of production of canned fruits from the Atlantic seaboard to that territory. At the same time considerable changes have occurred in the relative rank of the States producing the more important vegetable-canning crops. Tomatoes, corn, and peas have always been the most important of the canning vegetables, whereas peaches, apples, and pears have held first rank among fruits.

In 1899 the outstanding characteristics of the industry were the small size and wide distribution of the plants canning these staples. The census of that year reports production in pounds instead of cases. If only those States reporting at least 100,000 pounds of a given product are considered as commercial producers, 32 States were canning tomatoes, 21 corn, 18 peas, 18 beans, 13 pumpkin, 24 apples, 14 peaches, and 11 pears. In a word, most canning plants were small and were engaged in putting up small quantities of practically all materials produced in near-by territory. The differentiation of the production of varieties or strains specifically for canning purposes from general fruit and vegetable growing was under way, but there were few areas in which intensive production of canning crops had begun.

In 1899 Maryland led in the packing of tomatoes, beans, sweet potatoes, and berries; Illinois and Iowa led in the canning of sweet corn; New York in the canning of apples, and California in the packing of peaches and cherries. At this time bean packing was chiefly centered in Maryland and New York, with Illinois, Ohio, and Indiana the only other important bean-packing States. It will be clear from the foregoing that the canning industry at the beginning

of the present century was mainly located along the Atlantic seaboard with Maryland and New York the most important States and extending inland to include Michigan, Iowa, Indiana, Ohio, and Illinois as producing territory of secondary importance.

TABLE 4.—*Packs of the more important canned fruits and vegetables in 1909, 1919, and 1921*[1]

ASPARAGUS

State	1909	1919	1921	State	1909	1919	1921
	Cases	*Cases*	*Cases*		*Cases*	*Cases*	*Cases*
California	197,592	994,669	733,428	New York	17,565	4,109	----
Illinois	1,630	----	----	All other States	4,876	7,826	6,425
Maryland	2,475	----	----	Total	228,559	1,006,604	739,853
New Jersey	4,421	----	----				

STRING BEANS

California	36,135	173,490	----	Oregon	12,383	27,902	----
Colorado	46,031	100,309	----	Pennsylvania	61,298	86,900	----
Indiana	31,948	11,088	----	Tennessee	----	17,079	----
Louisiana	----	10,821	----	Utah	10,500	51,028	----
Maine	18,812	89,241	----	Virginia	6,660	14,286	----
Maryand	142,877	395,649	----	Washington	5,204	25,975	----
Michigan	51,787	88,445	----	Wisconsin	54,576	305,142	----
Minnesota	58,700	----	----	All other States	43,271	54,991	----
North Carolina	9,567	4,630	----				
New York	452,634	722,535	----	Total	1,025,324	2,199,825	----
Ohio	32,941	20,314	----				

LIMA BEANS

Illinois	8,032	----	----	New York	21,406	24,056	----
Indiana	19,795	----	----	Ohio	12,306	21,606	----
Maine	7,299	36,648	----	Virginia	7,698	----	----
Maryland	8,808	91,778	----	All other States	7,145	81,613	----
Michigan	20,980	43,690	----				
New Jersey	136,064	169,168	----	Total	249,533	468,569	----

CORN

Delaware	94,697	198,728	----	New York	771,475	901,368	530,507
Illinois	1,619,897	2,291,948	1,767,517	Ohio	893,054	1,400,793	954,270
Indiana	520,401	608,515	698,043	Pennsylvania	44,722	387,664	232,201
Iowa	987,038	2,888,706	1,106,963	Vermont	163,446	146,372	163,300
Maine	792,185	1,548,120	745,559	Virginia	5,204	970	----
Maryland	772,828	2,342,359	1,145,620	Washington	----	1,779	----
Michigan	47,680	139,520	125,435	Wisconsin	306,999	745,296	602,530
Minnesota	193,807	516,347	622,778	All other States	49,811	63,654	130,257
Missouri	18,111	----	----				
Nebraska	169,910	177,915	139,454	Total	7,451,265	14,402,725	9,010,660
New Hampshire	----	42,671	46,226				

PEAS

California	123,349	213,857	95,789	New York	1,438,059	919,612	1,178,117
Colorado	150,505	85,714	176,848	Ohio	205,089	337,887	238,561
Delaware	190,261	222,832	373,229	Pennsylvania	48,202	71,161	67,695
Illinois	171,212	446,908	341,876	Utah	61,156	409,834	392,312
Indiana	521,764	387,387	153,844	Virginia	15,466	----	----
Iowa	15,879	----	----	Wisconsin	1,990,558	5,022,630	4,092,529
Maryland	381,894	623,527	661,109	All other States	30,259	50,925	88,713
Michigan	412,734	406,980	282,819				
Minnesota	25,367	68,513	61,609	Total	5,901,703	9,325,727	8,222,181
New Jersey	119,949	57,960	17,531				

[1] All figures are given in standard cases.

TABLE 4.—*Packs of the more important canned fruits and vegetables in 1909, 1919, and 1921*—Continued

PUMPKIN

State	1909	1919	1921	State	1909	1919	1921
	Cases	*Cases*	*Cases*		*Cases*	*Cases*	*Cases*
California	10,941	38,493		Missouri	5,044		
Colorado	8,814			New Jersey	12,835		
Delaware	3,247			New York	106,127	30,412	
Illinois	73,773	42,093		Ohio	40,624	49,547	
Indiana	119,965	116,310		Pennsylvania	5,075		
Iowa	7,087	64,501		All other States	24,027	36,573	
Kentucky	9,950						
Michigan	10,151	5,282		Total	440,303	383,211	
Minnesota	6,043						

SWEET POTATOES

Alabama	5,702			New Jersey	22,833	6,115	
Arkansas		15,649		Texas		14,371	16,942
California		52,077	94,957	Tennessee	8,147	14,487	9,504
Delaware	20,633	74,954	24,014	Virginia	95,067	155,038	189,732
Georgia	21,167	25,503	48,948	All other States	25,302	34,836	86,785
Louisiana	11,667	26,915					
Maryland	136,768	167,274	106,648	Total	347,286	745,861	622,827
Mississippi	158,642	45,747					

SPINACH

California		370,075	372,951	Ohio	4,504	13,010	7,289
Maryland	110,882	256,627	152,399	All other States	13,707	15,715	19,521
New Jersey	6,488						
New York	13,614	20,961	28,870	Total	149,255	676,388	581,030

TOMATOES

Arkansas	27,980	140,054	50,533	New Mexico		13,289	
California	536,837	3,627,473	500,204	New York	347,714	437,341	209,156
Colorado	142,008	292,140	59,757	Ohio	444,034	189,403	73,635
Connecticut	24,700	20,066	11,564	Oregon		10,736	
Delaware	1,262,635	285,127	155,275	Pennsylvania	120,919	170,492	159,879
Illinois	100,491	67,668	23,029	Texas	9,645		
Indiana	916,755	917,235	490,754	Tennessee	92,173	239,005	46,122
Iowa	111,692	83,434	61,140	Utah	332,372	578,323	127,009
Kentucky	139,678	31,623	31,525	Virginia	998,354	860,800	123,250
Maryland	5,757,811	3,055,516	1,631,303	West Virginia	148,319	82,821	39,752
Michigan	990,075	120,781	34,445	Wisconsin	9,761	23,083	
Missouri	260,246	459,520	124,182	All other States	42,203	43,050	56,435
North Carolina	7,574	8,083					
New Jersey	977,010	79,413	124,705	Total	12,909,986	11,836,476	4,133,664

APPLES

Arkansas	48,062	213,230		New Jersey		5,384	
California	67,710	146,458	68,092	New York	429,180	482,140	601,237
Colorado	3,992	38,377	50,987	Ohio	8,674		
Connecticut		2,676		Oregon	8,557	230,555	279,751
Delaware		52,263		Pennsylvania	149,398	183,827	100,426
Idaho			38,078	Utah		43,252	27,383
Maine	75,540	253,993	301,855	Virginia	11,870	94,075	18,600
Maryland	111,347	109,504	93,959	Washington	22,533	313,084	430,969
Michigan	163,079	191,755	141,705	All other States	33,331	76,704	77,386
Missouri	28,224	4,054					
North Carolina	5,609	5,943		Total	1,205,742	2,447,927	2,239,428
Nebraska	6,636						

APRICOTS

California	627,701	3,912,404	1,056,857	All other States	2,484	4,044	
Utah		23,320					
				Total	630,185	3,939,768	1,056,857

TABLE 4.—*Packs of the more important canned fruits and vegetables in 1909, 1919, and 1921*—Continued

BLACKBERRIES

State	1909	1919	1921	State	1909	1919	1921
	Cases	*Cases*	*Cases*		*Cases*	*Cases*	*Cases*
California	78,024	118,832		Oregon		230,205	
Idaho	16,687			Texas		52,490	
Maryland	29,883	48,589		Tennessee		26,449	
Michigan	6,312	81,022		Virginia	6,524	2,961	
North Carolina	14,464	32,645		Washington	24,052	252,620	
New Jersey	18,629	15,963		All other States	24,226	11,927	
New York	8,424	9,309					
Ohio		7,958		Total	210,538	910,657	

CHERRIES

California	224,084	618,210	226,190	Utah		33,079	7,699
Colorado	8,470	51,929	36,859	Virginia		1,812	
Maryland	10,092	6,757		Washington		146,782	50,945
Michigan	20,572	184,472	81,693	All other States	13,918	129,276	156,997
New York	90,445	30,636	20,301				
Ohio		10,676		Total	390,351	1,362,832	779,602
Oregon	22,770	149,203	198,918				

PEACHES

Arkansas	7,980	46,402		Ohio	5,199		
California	1,149,590	6,869,152	5,332,153	Oregon		22,303	
Delaware		68,411		Tennessee	7,235		
Georgia	71,931	144,609		Utah		16,633	7,630
Maryland	80,489	239,790		Virginia		12,121	
Michigan	74,595	170,758	24,218	Washington		26,352	
North Carolina	7,370			All other States	21,097	21,571	41,259
New Jersey		20,700					
New York	41,727	48,053	11,953	Total	1,467,213	7,706,855	5,417,213

PEARS

California	433,796	1,049,922	780,791	Oregon	14,598	164,733	145,245
Delaware		95,275		Virginia		12,077	
Maryland	67,427	185,610	6,766	Washington	11,549	179,878	159,412
Michigan	8,066	39,774	15,805	All other States	6,910	18,064	4,017
New Jersey	43,750	105,090					
New York	51,686	171,187	53,168	Total	637,782	2,021,610	1,165,204

PLUMS

California	138,996	363,024		Washington	4,100	10,830	
Michigan	11,420	75,980		All other States	2,847	16,701	
New York	52,853	88,320					
Oregon	9,841	16,666		Total	220,057	571,521	

PRUNES

California		87,653		All other States		16,797	
New York		1,954					
Oregon		114,683		Total		273,710	
Washington		52,623					

RASPBERRIES

California	3,891			Ohio	3,924		
Illinois	2,555			Oregon	9,658	37,416	
Maryland	14,052	27,385		Washington	10,109	103,986	
Michigan	27,384	131,223		All other States	6,005	18,835	
New Jersey		19,478					
New York	169,486	213,096		Total	247,064	551,419	

TABLE 4.—*Packs of the more important canned fruits and vegetables in 1909, 1919, and 1921*—Continued

STRAWBERRIES

State	1909	1919	1921	State	1909	1919	1921
	Cases	*Cases*	*Cases*		*Cases*	*Cases*	*Cases*
California	13,137	21,414		Oregon	3,490	21,107	
Louisiana		43,063		Pennsylvania	4,983		
Maryland	106,724	75,215		Washington		25,426	
Michigan	9,754	87,892		All other States	7,681	48,174	
New Jersey	30,758	19,717					
New York	32,159	32,089		Total	208,406	374,097	

The passage of 25 years has produced extensive changes in the relationships of the States not only as a whole but also with reference to individual crops. Illinois and Iowa have for years contested for leadership in the packing of corn, Iowa having led five years, during the period 1916 to 1925, Illinois three years, with Maryland in third place. During this period, Ohio held fourth place of importance, with Maine and Indiana about equal in production. Wisconsin has taken first place in the canning of peas, packing substantially half of the total output, New York and Maryland having dropped to second and third places respectively.

Tomato packing in the various States is subject to such wide fluctuations that assignment of States to definite rank is difficult, even when average production for a term of years is considered. Maryland is still in first place, with California second, while Delaware and Indiana have alternated in third place for some years, but the annual production of Indiana has considerably exceeded that of Delaware since 1918. Missouri, Utah, Virginia, Tennessee, and New Jersey follow in the order named. The packing of tomatoes increased fairly steadily to a total of 15,220,000 cases in 1914, but exceeded this figure during the war year of 1918 and again during the season of 1925.

Asparagus, spinach, sweet potatoes, and beets have been packed in increasing quantities during recent years. The canning of asparagus is practically confined to California, with a few hundred acres grown for canning in New York and one or two other States. California and Maryland packed most of the spinach with small quantities in New York, New Jersey, and Ohio. The canning of sweet potatoes has reached the largest proportions in Virginia, Maryland, and California, with Georgia, Mississippi, Delaware, Texas, and Tennessee packing considerable quantities. The packing of beets has become important only in Wisconsin and New York.

In the canning of fruits, also, a marked shifting of centers of production has occurred. Apples were canned in 1899 in considerable quantities in 24 States. Half of these no longer produce commercial quantities. New York still leads in quantity canned, but is followed in order by Washington, Maine, Oregon, and Michigan. Production has remained stationary in Pennsylvania, has been greatly decreased in Maryland, and has almost or quite ceased in Indiana, Illinois, Missouri, New Jersey, Ohio, and West Virginia.

California is now far in the lead in the canning of peaches and pears. At present there are small packs of peaches in Michigan, New York, Utah, and Delaware. Washington and Oregon have be-

come large producers of canning pears, greatly surpassing New York, while Michigan alone of the Eastern States has a small increased production. California and Oregon have also become the most important States in the packing of cherries, with Michigan, Washington, New York, and Maryland in the order named as the other producing States.

Prior to the census of 1909, all berries canned were reported collectively, and the quantities of the separate items blackberries, raspberries, dewberries, and strawberries canned can not be ascertained for 1899. At that time Maryland produced 11,205,000 pounds of canned berries; New York, 7,457,000; California, 4,201,000; Michigan, 1,600,000; Oregon, 714,000; and Pennsylvania, 258,000 pounds. At the present time Oregon is the largest producer of canned berries, with Washington second. Maryland, Michigan, and California produce approximately equal quantities. New York has fallen considerably below the States last named, and Pennsylvania no longer produces commercial quantities. With respect to individual fruits, Washington leads in the production of blackberries, followed rather closely by Oregon. California stands third, Michigan fourth, Texas fifth, and Maryland sixth. Considerable quantities of blackberries are also being produced in Tennessee, New Jersey, Ohio, and Virginia. In the production of raspberries for canning New York is far in the lead, followed by Michigan and Washington. Oregon, Maryland, and New Jersey are less important producers. Strawberry canning is the most developed in Michigan and Maryland. Louisiana has recently come to rank third, followed in order by New York, Washington, Oregon, and New Jersey.

From the foregoing outline it will be apparent that the rapid increase in volume of the products of the canning industry in the last quarter century has been due in part to increases in production of corn, tomatoes, peas, beans, peaches, apples, and pears, which have been staples since the establishment of the industry, and in considerable part to the large present-day production of canned products which were unimportant or unknown 25 years ago. Asparagus, spinach, sweet potatoes, apricots, prunes and plums and berries are examples of such products. The fact that some of the fruits just named are produced almost entirely upon the Pacific coast and in Idaho has made that territory predominant in the production of canned fruits, while the existence of large areas especially adapted to the production of vegetables has made California a prominent factor in vegetable canning.

The industry has as a whole grown most rapidly in those States in which there has been largest growth in agricultural population through the bringing into cultivation of new land. The absence of new land to be brought into cultivation, together with the greater absorbing capacity of the fresh-fruit and vegetable markets of the near-by centers of population, has prevented growth of the industry at a comparable rate in the Atlantic Seaboard States, has led to a decline in production in some of them, and has restricted the output of others to certain special crops. The industry as a whole has therefore become decentralized. General canning, in the sense of employment of any and all materials which could be grown in near-by territory, has markedly decreased. More intense competi-

tion has necessarily restricted canning in any particular district to those products which can be produced at minimum cost or which have such outstanding quality as to find purchasers despite additional cost. Cost and quality are both involved in determining whether a given product can be produced in a certain canning area, sometimes one, sometimes the other, being the predominant factor. Large-scale production permits reduction of costs, so that the tendency toward regional specialization has operated to increase the size of the individual plant and to eliminate the small plant. Thus increasing stress of competition in the industry tends to operate in the same manner upon production of raw materials and upon their manufacture, eliminating producing districts in which low yields or other factors result in high costs of raw material, at the same time that small plants with their high manufacturing costs are forced to suspend operations even when located in districts having high yields. While a large number of factors have been operating to produce the changes apparent in the industry in the last 25 years, the factor playing the dominant rôle is the fundamental economic factor of production cost.

The packing of baked beans has increased so rapidly in recent years, reaching a total of 11,142,331 cases in 1919, that it is worthy of mention. It stands apart from the canning of other products in two respects by reason of its employment of mature dry material. It is not a seasonal occupation nor it is necessarily confined to the immediate territory in which its raw material is grown. The employment of equipment which is of a special type further differentiates the work from that of general canning. In consequence, while the packing of baked beans is to some extent engaged in as a slack-season occupation by plants engaged in general canning, there are an increasing number of plants making it their sole or principal business. The location of plants of this character is determined by other factors than nearness to bean-producing districts, and the present tendency is toward the differentation of baked-bean packing into an occupation distinctly apart from general canning. The small white pea bean, or "navy" bean, used for the purpose is grown mainly in Michigan, Wisconsin, New York, and California, while Indiana, Michigan, California, Illinois, New York, and Iowa, in the order named, are producers of the finished product.

The aggregate total value of various manufactured fruit and vegetable food products is reported collectively by the census as pickles, preserves, jellies, sauces, and kindred products, the quantities and value of each item not being separately stated. In 1899, these products had an aggregate value of $35,725,257, in 1909 of $45,105,129, and in 1919 of $145,784,530, of which $65,122,667 is preserves, $80,661,863 being made up of pickles and sauces. The value of raw materials employed was $91,851,287. Detailed data as to the distribution of manufacture in the various States are not available prior to the Fourteenth Census. In 1919 Pennsylvania led with a total value of $26,189,134, followed in order by New York, $25,096,637; Illinois, $19,046,228; California, $11,840,150; Ohio, $10,451,455; Indiana, $8,924,581; Kentucky, $8,223,431; and Massachusetts, $6,253,818.

Vinegar and Fruit Juices

The manufacture of cider and vinegar as a farm method of utilization of fruits shows a progressive decrease since 1899. In that year the census reported farm manufactures of vinegar to a total of 12,363,656 gallons and of cider of 55,280,199 gallons. In 1909 the quantities were 7,242,632 gallons and 32,583,998 gallons respectively. In 1919 a further decline in production to 6,470,060 gallons of vinegar and 13,365,805 of cider had occurred. Wine and grape juice were combined and reported as a whole by the census of 1909 and earlier years, so that comparative figures upon grape-juice production can not be given; the farm production in 1919 was 2,202,848 gallons.

FIG. 297.—Barrels of vinegar in the process of fermentation on a farm

The decline in the farm manufacture of cider has been most pronounced in the Middle Atlantic and East North Central States, but occurs in varying degree in all geographic divisions except the Mountain and Pacific States, which show increases, although their total production is only 4.1 per cent of that of the country as a whole. The divisions just named, with the addition of the New England States, are the only areas in which farm production of vinegar increased between 1889 and 1919; in all other divisions there was a decrease which was most pronounced in the East North Central and Middle Atlantic States. The decrease in these areas is concurrent with a decrease in the number of trees in home orchards in this territory, but it seems probable that the decline in total farm production of cider and vinegar (fig. 297) is to be largely accounted for by the development of the commercial vinegar industry, by increasing production of malt and spirit viegar, and in

the case of unfermented fruit juices, by the multiplication in volume and variety of synthetic beverages.

The commercial production of vinegar and cider is reported as having a total value of $5,932,000 in 1899 and $8,448,000 in 1909. In 1919, the value of vinegar was reported as $17,480,319, that of cider as $7,242,291. New York was the leading State, reporting products valued at $7,227,741, followed by Illinois with $2,445,197, Pennsylvania $1,806,432, Massachusetts $1,263,902, Michigan $1,238,732, Virginia $1,226,840, and Missouri $1,022,673. Washington, Texas, Kentucky, California, New Jersey, Oregon, and Connecticut were the only other States producing important quantities of these commodities.

FIG. 298.—A large commercial cider vinegar factory in West Virginia

Canning of fruits and vegetables, and the making of jams, yellies, marmalades, preserves, and pickles in the home, either for use by the immediate family or for local sale, are old and well-established household arts which were well understood and diligently practiced by the housewives of past generations. With the development of commercial canning and the transfer of an increasing percentage of our population from the open country to villages and cities, the preparation of supplies of foodstuffs for the winter came to play a less important rôle in the activities of the housewife.

In the entire absence of statistical data obtained from individual housewives, general statements based upon what is known as to the increase in sales of containers and equipment used in home canning and preserving are all that can be made. Definite statements are impossible for the reason that the facts collected by the census do not include data as to the quantities of foods preserved in the home and for home use, but it is probable that the quantities of material so preserved reached a minimum about the beginning of the present century. With the establishment of home-canning clubs by Federal and State agencies the quantities of food preserved in various ways

in the home began to increase, attaining a maximum during the intensive efforts for food conservation attending the World War.

Consideration of the various phases of horticultural manufactures would be incomplete without reference to a number of specialized industries that have grown up during recent years, many of which have centered around some particular individual who has had a vision, born of necessity, out of which there has developed an industry that has become of nationwide importance. One of the most outstanding industries of this character is that of the manufacture of Tabasco sauce, which is made from a special pepper grown largely in southern Louisiana. This industry, which started on a small scale at New Iberia, La., has increased greatly, and the Tabasco sauce now sold on our markets is largely manufactured at New Iberia.

The manufacture of candied figs, although largely a product of the home evaporator, has become quite an industry in sections where figs may be grown readily and is being engaged in mainly by women as a means of earning spending money. This work was started under the direction of the extension service and has grown into a secondary industry of considerable importance. One of the most important of the lines of horticultural manufacture is that of fig drying in California. The total production of dried figs in that State is estimated at from 9,000 to 10,000 tons, about two-thirds of which are of the Adriatic type. Although the latter fig is inferior to the Smyrna type as a dried product, the Adriatic varieties were introduced before the Smyrna and were extensively planted, especially as border trees along the vineyards. The Adriatic is still produced in larger quantities than the Smyrna, notwithstanding the fact that it is far inferior, the skin being tougher and the color defective and requiring to be bleached, which results in giving the dried figs an acid taste, which is undesirable. One thing that has handicapped the dried-fig industry of California is the labor costs, as the figs dried in this country have to compete with those produced with the cheap labor of Asia Minor. The canning of figs has become very important in this country for the reason that canned figs do not have to compete with the cheap Asiatic labor. For this purpose the Smyrna and Dottato (*Kadota*) varieties, being superior in flavor, are largely used.

The manufacture of Muscadine grape jelly and grape paste, an industry which has been developed in the Carolinas and elsewhere in the south Atlantic seaboard where the Scuppernong and Thomas varieties thrive, has become of considerable importance during the last seven or eight years. This, however, would be considered one of the minor horticultural manufacturing industries, but one which offers greater possibilities for expansion and development. The increasing demand for preserves and manufactured products, especially those of a candied or confection nature, has created an opportunity for the development of a large number of minor or secondary manufacturing industries. Some of these have developed into what might be termed basic manufacturing industries.

The growth of horticultural manufactures, including drying, preserving, pickling, and other phases, has practically kept pace with the increased population and market requirements. In some lines in certain years it has exceeded the demand with the result that low prices have prevailed for a time, requiring readjustments

of the industry. The adoption of standards, and the adherence to more definite rules of sanitation and quality in the pack of manufactured goods, together with judicious advertising, has to a considerable degree increased the demand for the product of horticultural manufacturers. The placing upon the market of simple and inexpensive equipment for canning in tin, including the use of the full opening or sanitary cans, has made possible canning on a small scale on farms and in consumers' households, thus popularizing the use of canned goods. The teachings of the home demonstration agents and nutrition specialists have brought to the attention of housewives the many ways of utilizing surplus fruits and vegetables on farms and of turning these into attractive and wholesome products which increased the variety of the diet for the family. The manufacture of horticultural products on a large scale, however, has become more and more specialized and has developed primarily as a basic industry.

Potato Utilization

The manufacture of potato starch and potato flour are important factors in the utilization of surplus potatoes in certain of the European countries, but of comparatively minor importance in this country. The stability of any industry is dependent upon the variety of uses which may be made of its products and by-products, and its range of economical distribution. In the case of the potato its bulk and relatively low value per pound, except in short-crop years, ordinarily confines its distribution to a radius of approximately 500 miles. Exceptions to this general statement must, of course, be made in the case of high-quality, hand-selected stock from the West. For example, it is not at all uncommon to find Idaho or western Colorado baked potatoes served in high-class New York City hotels and restaurants, and quite the common thing to find well-graded sacked Idaho potatoes offered for sale by commission firms in Chicago and elsewhere. Seed potatoes also have a wider distribution than common table stock. At the present time the utilization of the potato crop of this country for other than table purposes is almost negligible, as aside from that portion of the crop which is required for seed purposes and that which is unfit for table purposes, either as a result of decay, undersize, or other defects only about 1 per cent of the crop is used in the manufacture of potato starch and potato flour. In fact, in ordinary years this 1 per cent consumption is largely, if not wholly, of unsalable stock. In Germany it is estimated that about 10 per cent of the crop is used for industrial purposes such as the manufacture of alcohol, starch, flour, dextrin, and dehydrated products. This is well illustrated in the following figures taken from Skinner's report [1] in which he states that 2,500,000 tons of potatoes are used in the manufacture of spirits; 1,400,000 tons for starch; 400,000 tons for dried potatoes; 13,000,000 tons for human consumption; 6,000,000 tons for seed purposes; and the balance of about 4,000,000 tons is credited to loss from decay and other causes.

[1] SKINNER, R. P. UTILIZATION OF POTATOES IN EUROPE. Dept. Com. Consular Rept. No. 64; p. 9, 1914.

Potato Starch Manufacture

Although the manufacture of potato starch is of relatively slight importance from the potato crop standpoint it does represent in certain sections, particularly in Aroostook County, Me., a rather important adjunct to the potato industry, as it affords a convenient outlet for the disposition of cull and surplus stock, which in the usual absence of livestock in that section would otherwise have no value to the grower except for their plant food content when applied to the soil.

Early history of the potato-starch industry in the United States.—The earliest reference to the manufacture of potato starch in this country that has been noted is that of a brief article in a farm journal,[2] in 1831, in which an account is given of the utilization, in a small New Hampshire town, of 45,000 bushels of potatoes for starch purposes. In volume 14, page 405, 1836, of the same journal reference is made to an article published in the Troy (N. Y.) Whig, relative to the manufacture of potato starch in Vermont. In 1842[3] a small starch factory was erected in the town of Columbia, N. H., where starch was manufactured for two or three years. A second factory was erected in Colebrook, N. H., in 1846. At that time potato production in this section was limited to the home consumption of the town. The purchase of potatoes by the starch-factory operator at from 10 to 15 cents per bushel was sufficient to induce farmers to devote a larger acreage to the production of potatoes. The profitable operation of the starch factory led also to the erection of others. In 1869, according to the Coos County historian, competition among potato-starch manufacturers became general and many new factories were erected. At the same time the price of potatoes had advanced from time to time until some years the growers received as high as 50 cents a bushel for their crop. At the same time starch sold as high as $180 a ton, or more than twice its present average price. Colebrook was then one of the great potato-starch centers, as one-twentieth of all the starch produced in the United States was made in that community. The farmers soon learned, however, that the continuous cropping of their land with potatoes was causing a rapid depletion of their soil and they very materially decreased their acreage, with the result that instead of an annual output of 1,500 tons of starch it was reduced to 500 tons.

According to Hall[4] the first potato-starch factory in Aroostook County, Me., was erected at Caribou in 1871. This was followed in 1874 by another at Presque Isle. By 1899, T. H. Phair of Presque Isle had acquired the title of "starch king" of Aroostook County. At the height of the starch business there were 40 factories in operation in the county. The prevailing price received by the growers for their potatoes was 25 cents per bushel. About 20 years after potato growing for starch purposes had become a staple industry, the quality of the Aroostook potato for table purposes began to be recognized, with the result that their production for starch purposes rapidly dwindled to an almost negligible quantity until at the present time they are grown exclusively for table and seed purposes. The

[2] N. E. Farmer and Hort. Jour. 10: 141, 1831.
[3] Merrill's History of Coos County, N. H., 1888, pp. 733–734.
[4] Hall, J. E. Letter under date of Feb. 19, 1926.

starch-factory supply is now confined to cull potatoes and in overproduction years to the surplus stock plus the culls.

The 1860 and 1870 census reports give some interesting data relatively to the potato-starch factories in operation in the then leading potato States. The following data from the United States census reports indicate the rise and fall of the potato-starch industry in this country and afford an interesting example of the effect of changing economic conditions brought about as a result of cheaper sources of starch, of which cornstarch serves as a good illustration.

The 1860 census report shows that Maine had 8 starch factories, 2 of which were located in Franklin County, and 3 each in Oxford and Somerset Counties. Massachusetts was credited with 3 factories in Norfolk County, but it is not very clear whether they were potato or corn-starch factories. New Hampshire had 32 factories, New York 61, and Vermont 48. Illinois had 2 factories, one each in La Salle and Peoria Counties, and Indiana was listed as having 3, 1 in Wayne and 2 in Jefferson Counties. There is every reason to believe, however, that the Illinois and Indiana factories were not potato-starch factories. Ten years later, or in the 1870 census report, Maine had 10, New Hampshire 66, New York 72, Vermont 37, and Wisconsin 1. In the 1880 report Maine had 19, New Hampshire 17, New York 58, and Vermont 8. In 1890, Maine had 18, Minnesota 6, and New York 16. New Mampshire and Vermont are not credited with any factories. The 1900 census report lists Maine as having 45 factories, Minnesota 8, Wisconsin 6, and New Hampshire 4. In the 1910 census report the data presented is for glucose and starch production, and in the 1920 census report data is given relative to the pounds of raw potatoes used in the manufacture of potato starch, and their cost for the years 1909, 1914, and 1919. These data, as will be noted, indicate quite a fluctuation in quantity and price.

Raw potatoes used in 1909: 210,608,127 pounds, or 3,510,135 bushels.
Raw potatoes used in 1914: 169,878,784 pounds, or 2,831,313 bushels.
Raw potatoes used in 1919: 129,505,745 pounds, or 2,158,429 bushels.

The average cost per bushel of these potatoes in the three years mentioned was 15.4, 17.6, and 35.4 cents, respectively. An interesting feature of these data is the curtailed production of starch in 1919, and the greatly increased cost per bushel during that season as compared with 1909 and 1914. The reason, of course, is obvious—war prices still prevailed in 1919 and practically nothing but the unsalable stock could be used for starch. The crop being below the average as well as of normal requirements the high price of starch made it possible to pay more for the raw product. Ordinarily the prevailing price paid for starch potatoes in Maine is from 35 to 50 cents per barrel of 165 pounds or from 12.7 to 18.2 cents per bushel. Usually 25 cents per bushel is regarded as the outside figure that can be paid for potatoes intended for starch manufacture. According to data published by Sanders and Stevens[5] the average quantity of potatoes used for starch manufacture in Aroostook County, Me., for the years 1905 to 1924 inclusive, was 1,868,641 bushels. The

[5] Sanders, V. A., and Stevens, C. D. New England Crop Reporting Service. July 22, 1925.

yearly consumption during this 20-year period varied from 100,000 bushels during 1919, a year of short production and high prices, to 5,500,000 bushels in 1914, a year of heavy production and low prices. The bulk of the potatoes used for starch were unsalable and, therefore, had little, if any, value to the grower, other than for conversion into starch.

In a report prepared in 1912 by a committee of men interested in the potato-starch industry of this country the following statement is made:

> The industry is confined to 70 potato-starch factories in the county of Aroostook, Me., and 17 in the two States of Wisconsin and Minnesota, having an approximate value of $10,000 each or a total investment of $870,000.

During the years 1902 to 1911 inclusive it was estimated that the total of starch produced amounted to 200,000,000 pounds or an average annual output of 20,000,000 pounds, valued at 3.8 cents per pound. The total consumption of potatoes for the 10-year period was 10,000,000 barrels, having an average value per barrel of 45 cents. The manufacturing costs per ton of starch was itemized as follows:

100 barrels potatoes at 45 cents per barrel	$45.00
Overhead charges	15.20
Operating expenses	10.00
Total	$70.20
Per pound of starch	3.51

The average profit for the 10-year period based on a selling price of 3.8 cents, and a manufacturing cost of 3.51 cents, left a profit to the producer of 0.29 cent per pound or.29 cents per 100 pounds. The average price of foreign potato starch during the same period was 2.4 cents per pound plus duty of 1.5 cents or a total of 3.9 cents as compared with 3.8 cents the average price of domestic starch, leaving a margin of 10 cents per 100 pounds in favor of the home product. Recent figures obtained from one of the largest starch dealers in the United States indicates a heavy consumption of the 1924 potato crop for starch purposes as compared with the three preceding years. The 1921 starch production is estimated at 20,000,000 pounds. The 1922 starch production is estimated at 18,000,000 pounds. The 1923 starch production is estimated at 13,400,000 pounds. The 1924 starch production is estimated at 33,000,000 pounds. Of the last mentioned figure Maine is credited with having produced 30,000,000 pounds, and Minnesota and Wisconsin the remaining 3,000,000 pounds. The large starch production in 1924 is, of course, the direct result of an overproduction of potatoes and a very low market price for table stock. The same firm states that there are no starch factories now in operation in New Hampshire, Vermont, or New York and that in the West there are not over five or six factories which operate only when conditions are favorable.

The factors which operate against a more extensive development of the potato starch industry in this country are (1) an undependable supply of cheap potatoes, (2) the narrow margin of profit between domestic and foreign-made starch, and (3) the tieing up of capital in an investment which can function profitably only when the price of table stock is relatively low, and which under the most

favorable conditions can operate only throughout a limited portion of the year. The persistence of the potato-starch industry in Aroostook County, Me., is largely, if not wholly, due to the extent of the crop produced which in any season provides a goodly supply of cull potatoes for the starch factories. Even under these conditions many starch factories do not open their doors in seasons when the price of table stock is high and the percentage of culls is relatively small. The tendency to-day seems to be to concentrate the industry in a fewer number of factories in order to reduce operating costs.

Equipment.—The equipment necessary to the manufacture of potato starch is relatively inexpensive. The first requirement is that the structure must have ample floor space and an abundant supply of pure water. Usually the starch factory is located on the bank of a stream of water, which in addition to insuring the necessary water supply enables the owner to take advantage of the sloping character of the site in order to provide different floor levels. By having the storage bins on the upper level of the structure the potatoes may be moved by gravity to the washing tank with little or no hand labor. The equipment proper consists of a washer for the removal of dirt and the trapping of small stones and other refuse, a grater or grinder for the pulping of the tubers, sieves for removing the refuse or pulp from the starch, large settling tanks for the washing and purification of the starch, and a drier for drying the starch. Although none of the equipment mentioned is relatively expensive the yearly deterioration is an appreciable one, thus adding materially to the overhead costs, especially if the period of operation is a short one.

Starch uses.—The commercial demands for starch from any source may be roughly divided into three classes: (1) For edible or culinary purposes; (2) for laundry purposes; (3) for manufacturing purposes. The chief use of potato starch in class 1 is as a filler or stiffener in sausage and blood-pudding making, for which it is preferred to other starches on account of its greater "swell" or expansive power. Potato starch is seldom used for laundry purposes. In the manufacture of fabrics, especially of high-grade fabrics, the higher viscosity of potato starch makes its use for sizing purposes preferable to cornstarch. It is also preferred in the manufacture of high-grade dextrine. In point of value potato dextrine commands the highest price and corn dextrine the lowest. The consumption of potato starch in the manufacture of dextrine is relatively slight as compared with its use in the sizing of high-grade fabrics.

Potato flour.—During the years 1918 to 1920 considerable attention was given to the possibility of supplying the home demand for potato flour which had been previously taken care of by imports from European sources, chiefly Germany and Holland. Prior to the World War potato flour was laid down at our ports at from 3 to 4 cents per pound. These importations were made to satisfy a rather limited demand from German bakers in the Middle West who used small percentages of it in the manufacture of wheat breads. As a result of the urgent plea of the United States Food Administration to conserve wheat flours a determined effort was made to induce the American housewife to add from 5 to 10 pounds of potato flour to each barrel of wheat flour. This served to stimulate an interest in the possibility of developing a stable potato-flour industry.

Potato flour may be described as a cooked desiccated, and finely pulverized substance from which the outer skin of the potato has been removed. It differs from potato starch in that it is a cooked product containing all the mineral elements of the raw potato as well as its starch and cellular matter—in other words, the whole potato minus the skin and a large percentage of its moisture. Approximately 5 pounds of potatoes are required to produce 1 pound of potato flour and 2 pounds of potato flour contains a little more nourishment than two 1-pound loaves of wheat-flour bread.

As a result of the United States Food Administration's appeal in 1918 several potato-flour factories were established. One of the most active agencies to engage in potato-flour production was that of a firm located at Pittsburgh, Pa. This firm established factories in Michigan, Wisconsin, Minnesota, Colorado, and Idaho. The five factories were claimed to have capacities of from 40,000 to 125,000 pounds of raw potatoes daily. These factories, if operated to full capacity for a period of seven months, would produce approximately 15,000,000 pounds of potato flour. With the termination of the war and the subsequent resumption of normal conditions, the competition from foreign imports and a plenteous supply of wheat flour, very materially lessened the demand for potato flour. At the present time, so far as known, only one potato-flour factory is in operation and the industry is in anything but a flourishing condition.

MARKETING FRUITS AND VEGETABLES

By A. W. McKay, H. W. Samson, R. R. Pailthrop, and L. B. Flohr, *Bureau of Agricultural Economics*, and L. C. Corbett, L. A. Hawkins, J. R. Magness, H. P. Gould, and W. R. Beattie, *Bureau of Plant Industry*

THE DEVELOPMENT of the fruit and vegetable industry in the United States has been characterized during the present century by large increases in production. Consequently, there has been severe competition in marketing. This has been expressed in a constant effort to expand the market territory for fruits and vegetables of all kinds. It has appeared also in organized and unorganized efforts to stimulate consumption, in the development of by-product manufacture, in spasmodic efforts to develop foreign markets, and, finally, in the efforts of growers and shippers to keep marketing and transportation costs at a minimum. From 1920 to 1924, according to the records of the Bureau of Agricultural Economics [1], United States Department of Agriculture, car-lot shipments of all fruits increased over 30 per cent (fig. 299) and car-lot shipments of vegetables approximately 33 per cent (fig. 300.)

The growth of specialized producing areas has been the second outstanding development in the fruit and vegetable industry. Apples, for example, were formerly produced in small farm ochards. In 1889, only one county in the United States produced as much as a million bushels. By 1899, production had become somewhat more specialized in western New York, and by the end of the next decade the large areas in Washington and Oregon (fig. 301) had come into prominence. The 1919 census figures show that over 6,000,000 bushels of apples were produced that year in both Yakima and Chelan Counties, Wash. Approximately, 2,400,000 bushels were

[1] Statistical Bulletin 8, "Carload Shipments of Fruits and Melons from Stations in the United States," 1920–1923; and Statistical Bulletin 9, "Carload Shipments of Vegetables from Stations in the United States," 1920–1923."

produced in the Hood River Valley, Oreg. Orleans, Niagara and Wayne Counties, N. Y., each had a production exceeding 1,500,000 bushels, and Frederick County, Va., produced over 1,000,000 bushels.

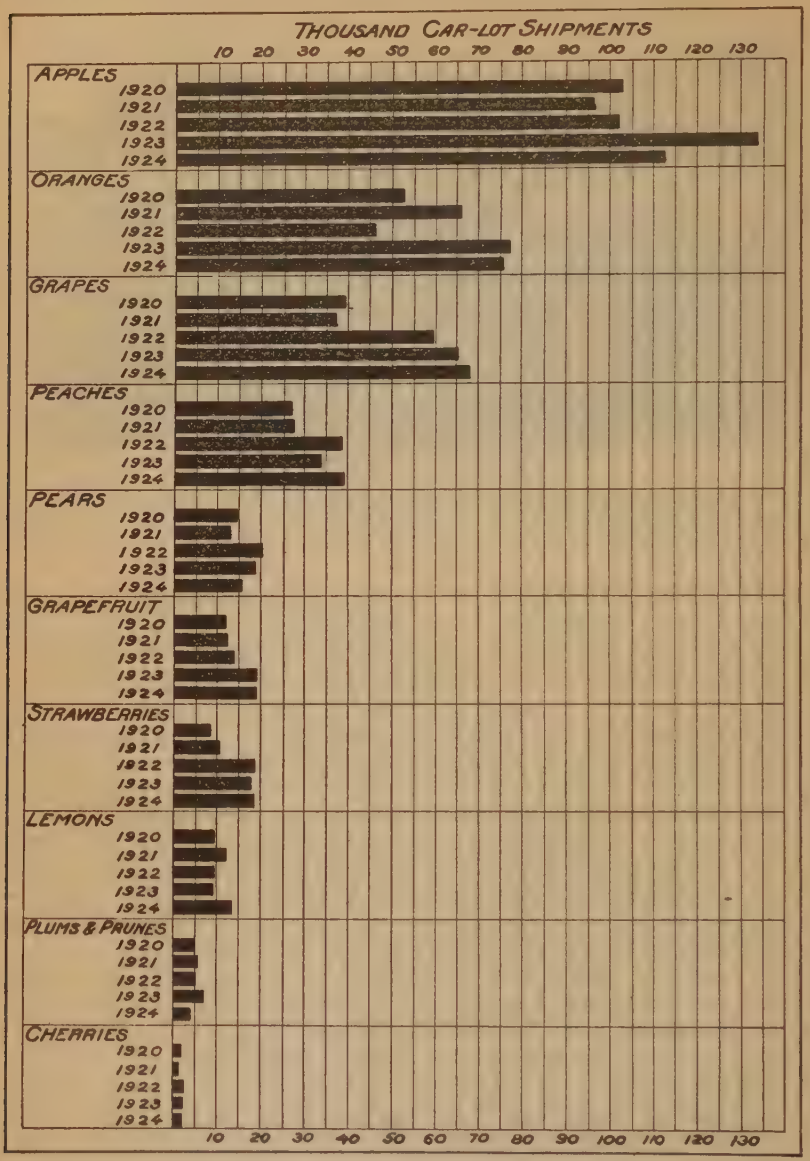


FIG. 299.—Car-lot shipments of fruits, expressed in thousands of cars, for the years 1920 to 1924, inclusive

This by no means exhausts the list of million-bushel counties, but it is sufficient to indicate the centralization which has taken place.

What is true of apples is true to a greater or less degree of other commodities. Early potatoes are produced in definite areas, Hast-

ings, Fla., Charleston, S. C., and Norfolk, Va., are well known early-potato sections on the Atlantic coast. Main-crop potatoes are grown more generally, yet the principal commercial areas are well defined.

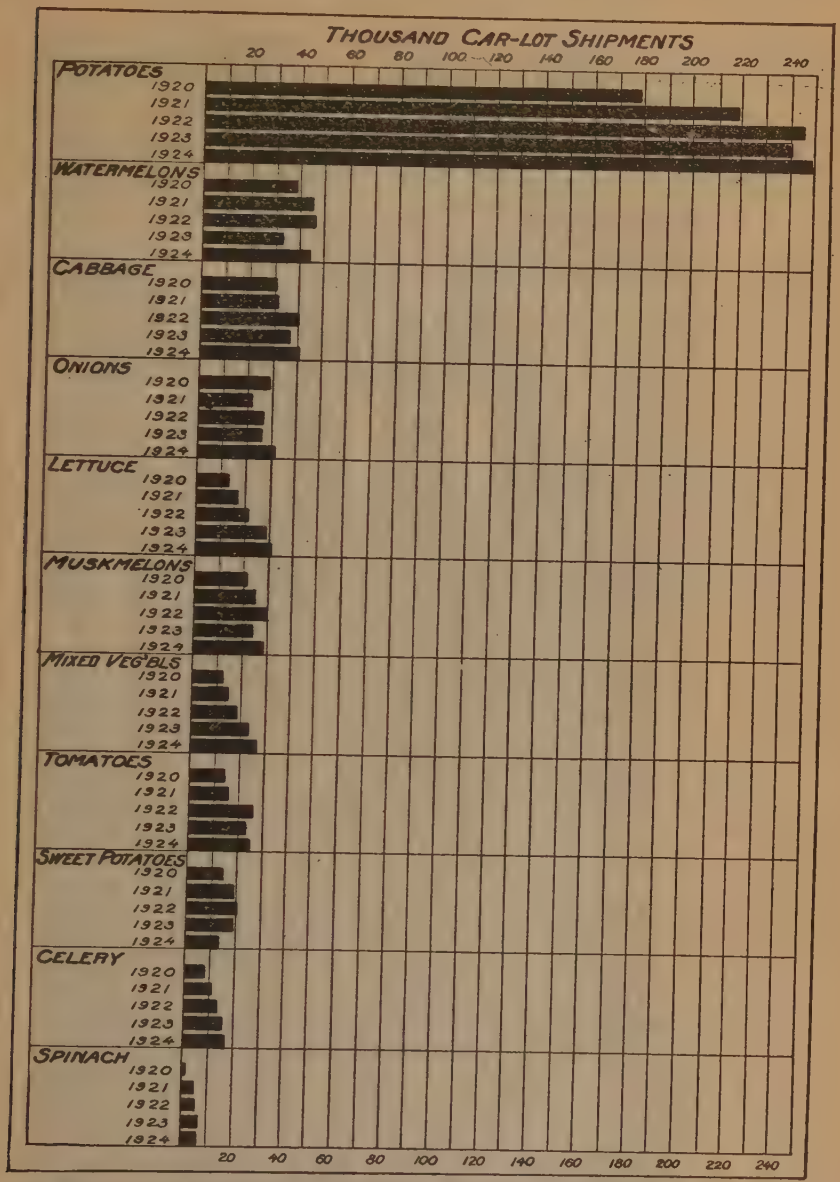


FIG. 300.—Car-lot shipments of vegetables, expressed in thousands of cars, for the years 1920 to 1924, inclusive

Aroostook County, Me., shipped 40,603 cars in 1925; Weld County, Colo., 3,485 cars; Bingham County, Idaho, 3,772 cars; Clay County, Minn., 4,599 cars; Suffolk County, N. Y., 6,507 cars. (Fig. 302.) Peaches, pears, raisins, strawberries, cabbage, lettuce, celery, and

FIG. 301.—View in Hood River Valley, Oreg., showing specialized production of fruits, especially apples and pears

other fruits and vegetables are also produced commercially in definite specialized areas which are familiar to everyone engaged in the marketing of these products.

Increases in the production of fruits and vegetables, and other attendant marketing difficulties have been all the more acute because of specialization in production. The general farmer who grows fruits or vegetables primarily for home use, offering only a small surplus for sale, can easily curtail production. The specialized farmer can not so easily make changes in his production. The agriculture of Seminole County, Fla., for example, depends largely upon the production of lettuce, celery, peppers, and other vegetable crops. If market conditions are unfavorable, these growers must keep on in their own line, because they can not engage successfully in any other

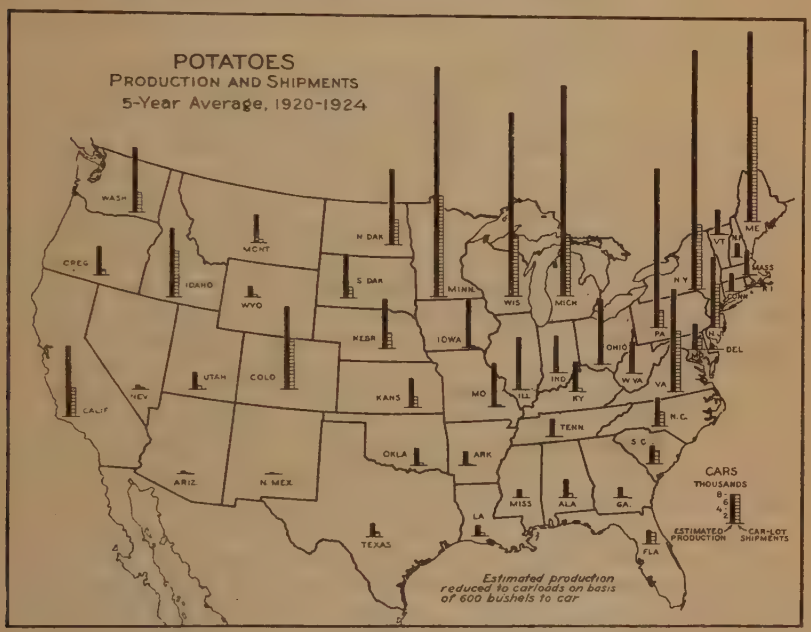


FIG. 302.—Average annual production and car-lot shipments of potatoes for the five-year period 1920 to 1924

type of farming. Similarly, the large fruit areas around Wenatchee and Yakima, Wash., are dependent primarily upon the apple industry. If the market for apples is good, the growers make money; if it is poor, they lose. But none of these specialized areas can abandon the production of fruits or vegetables without great losses.

Consequently, fruit and vegetable growers are interested in producting economically and in developing economical and efficient methods of marketing. Improvements in handling, storage, grading, transportation, and methods of distribution have come from the demands of the growers for better service, and in many instances have been accelerated by the organization of cooperative associations of growers for the purpose of performing services which the growers considered too costly when undertaken individually or which they were not receiving from existing agencies.

Standardization of Varieties

One of the first lessons the fruit and vegetable growers have learned is that not all varieties can be marketed successfully. A certain strawberry, for example, may possess excellent eating quality, but may deteriorate so rapidly in transit that it can not be marketed to advantage. A variety may be poor in quality or appearance, or it may too large or too small or otherwise undesirable. Furthermore, a variety may be undesirable because it is not known to the trade and consumers.

Added to these considerations is the fact that practical marketing demands a reasonably large volume of shipments uniform as to variety and grade. Mixed lots when made up of a number of varieties, a number of grades or both, are difficult to sell for the simple reason that any prospective customer is likely to object to one or more of the lots offered.

Necessarily there has been a decided tendency towards standardization of varieties. In the early-cabbage sections, for example, one variety, the Early Wakefield, makes up a large part of the commercial shipments. Two varieties of oranges grown in California comprise more than 90 per cent of the shipments. On the other hand, over 100 varieties of apples are shipped from western New York, although the number of importance commercially does not exceed 10. Formerly the producer set out a miscellaneous planting in order to offer his customers a number of varieties and to extend his marketing over the longest possible season. Through standardization many unsuitable varieties have been eliminated, yet most commercial orchards to-day contain a succession of varieties. For example, a grower of peaches in the Middle Atlantic States has been accustomed to plant a succession of varities such as Uneeda, Carman, Hiley, Belle, Elberta, and Salwey. This practice has many advantages and some disadvantages. It assures a continuous supply for the market and also enables the grower to handle the crop with fewer temporary laborers and with the minimum investment in his packing house and equipment, but the development of the peach industry in the Southern States has resulted in bringing some of the more desirable late varieties in direct competition with the early maturing varieties of the more northerly districts, with the result that the early crop in the later sections is less profitable than it was formerly.

The commercial grower to-day looks to a large territory for a market and in laying out a planting gives careful consideration not only to the local conditions but to competition, actual and potential, from other parts of the country.

Harvesting

Specialized production and large-scale operations have created harvesting problems and have resulted in the widespread adoption of new methods. Outside labor must be employed, and securing and supervising this labor is often difficult. Hired help will not exercise the same care in handling the product as will the owner, and with the increase of distances from market the necessity for care has become greater. One of the services local cooperative associations

can do for their members is to take over the work of harvesting. Labor can be assembled more easily and can be more efficiently trained and supervised in this way.

The question of careful handling in harvesting is very important when fruits and vegetables are shipped for long distances or stored for longer or shorter periods. The care that must be exercised varies, of course, with the perishability of the product. Cabbage and potatoes are less subject to deterioration owing to handling injuries than are strawberries or tomatoes. There is no fruit or vegetable product, however, the keeping quality of which is not injured by cuts or bruises. Such injuries permit the entrance of fungi which cause decay, and many of these fungi can not develop if the product is sound and its skin unbroken.

Among such organized groups as the California citrus growers, harvesting of the fruit is performed by crews employed by the local associations. The pickers are obliged to handle the fruit carefully; it is severed from the tree by special clippers so the fruit will not be injured in the operation, and the foreman of the crew inspects the work of each man several times during the day to make sure that he is not injuring the fruit unnecessarily.

In order that the output of the crews may not be unduly reduced by this insistence on care, the men are paid on a "quality-quantity basis"; that is, their wage depends on the quantity of fruit they pick and also on its freedom from harvesting injuries.

Another important factor to be considered in harvesting is the maturity of the product. The grower near his market can allow his apples or peaches to ripen on the tree because they can be delivered to the consumer before the ripening process has advanced to the point of deterioration. Products for long shipment or storage, however, must be picked before they are fully ripe. At just what maturity they should be harvested requires careful judgment not only on the part of the grower or crew foreman, but also on the part of the laborers employed. Apples should not be picked too green. If picked too ripe, deterioration in storage or in transit will develop sooner than would otherwise be the case.

Pears, peaches, muskmelons, and tomatoes are other products in which the maturity at time of harvesting has an important bearing on condition in the market. It is relatively difficult to determine by an external examination when these products have arrived at a proper degree of maturity.

A pressure tester has recently been developed for measuring the maturity of certain fruits. This device is based on the principle that as fruits ripen they become softer and yield more readily to pressure. The tester consists chiefly of a plunger and spring and an indicator which shows the pressure that must be exerted to force the plunger a given distance into the fruit. Typical specimens may be tested with the instrument, and it can thus be determined if they have reached the proper stage of maturity.

Methods for ascertaining the maturity of grapes have also been developed. The juice from selected specimens is tested with a hydrometer or sacchrometer—an instrument for determining the percentage of soluble solids in the juice. As the fruit ripens the sugar content of the juice increases, and, within certain limits the

reading of the sacchrometer may be taken as an indication of maturity. As the juice contains other substances beside sugar, the correct percentage of sugar in the juice will be from 0.5 to 2.5 less than the indicated "Balling" per cent or degree. A similar test is employed to determine the maturity of muskmelons.

Standards of maturity have been incorporated in the laws of several States, and in these States it is now illegal to ship or attempt to market fruit which does not meet the maturity requirements. Standards of maturity for citrus fruits have been observed for a number of years. The tests for maturity involve the determination of soluble solids and acid in the juice of oranges or grapefruit, and the maturity requirements are expressed as the ratio of solids to acid.

Usually, it is necessary to provide special equipment for harvesting fruits and vegetables. This may be homemade and extremely simple, or somewhat elaborate. Harvesting of deciduous fruit requires special ladders, picking sacks, or baskets and crates, or field boxes in which the product may be transported to the packing house. Citrus-fruit pickers must be supplied with clippers. All this equipment must be substantial, adapted to the purpose for which it is used, and of such a nature that it will not injure the fruit. For example, picking sacks, or baskets, are made with an opening at the bottom so that the fruit may be lowered carefully into the field crates instead of being poured out of the top.

The harvesting of vegetables also requires a certain amount of special equipment, and the costs and efficiency of the harvesting operations depend in part on the suitability of this equipment.

The grading and packing of fruits and vegetables are of utmost importance in marketing these products. There are, of course, wide variations in the practices employed in different parts of the country but in general during the last 10 years there has been marked improvement in methods in all lines. The difficulty of finding an outlet for the rapidly expanding production has centered attention on marketing efficiency, and the advantages of standardized and dependable commodities have been urged by extension and distribution agencies throughout the country. The requirements of the particular commodity, the distance from the market, the season of the year, the character and availability of labor, and the demands of the consuming public are all factors which exert an influence on the type of container and the methods of preparing the crops for shipment. It would be impossible within the limits of this discussion to describe in detail the operations involved in handling the various products. Grading and packing are carried on under a wide variety of conditions both in the field and in packing houses.

Grading in the Field

With the exception of sorting at storage warehouses, the grading of potatoes is done almost entirely in the field. In the Southern States considerable of the digging is done with forks and plows. Some growers use digging machines. (See fig. 133, page 359.) If the potatoes are sorted in the field the common method is to separate them into two or possibly three classes, the principal difference being the variation in size. More recently, however, since the mechanical

sizing machine has come into use, the potatoes are hauled to the machine in slatted crates. They are then emptied upon the sizing screen where sorters remove badly cut, scabby, grub-eaten or otherwise defective specimens. The best growers and shippers are now using a machine that is provided with a sorting table immediately ahead of the sizing screen, where culls and off-grade stock are removed. Machines are usually equipped with three sizing screens that separate the potatoes into sizes based on the requirements of the United States grades.—U. S. No. 1, 1⅞ inches and larger; U. S. No. 1, small, 1½ to 1⅞ inches; and No. 3, smaller than 1½ inches. The last size is shipped only under the most favorable market conditions. If the sizing machine is not equipped with a sorting table, the man who fills the sack, barrel, or other shipping container is

Fig. 303.—Method of grading and packing early potatoes in barrels in the Hastings, Fla., section

also required to remove the culls overlooked by the sorters stationed at the screen.

Among the packages in general use are the double-headed barrel used almost exclusively in the Hastings, Fla., section, (fig. 303) and the cloth-topped barrel in general use in the coast sections north of the Carolinas. The top of cloth or bagging is fastened by driving down over it the top hoop of the barrel and nailing through the hoop and cover. The veneer-slat barrel, a less substantial type, is also employed. Sacks are still used in the South Central States and more or less in other early sections. Hampers are often used for very early shipments from Florida and Texas.

Although the plow and fork are used to some extent in northern potato districts most of the work is done by mechanical diggers. There are several types of elevator diggers used on large areas. Some of the larger machines are drawn by tractors or by 2, 4, or 6 horses, depending upon the condition of the soil. These diggers are

very often equipped with small gasoline engines that operate the elevator, thereby ordinarily necessitating the use of only 2 horses. An elevator digger will turn out from three to five or more acres a day. Picking is done almost exclusively by hand. An average of five persons is required to pick up after one digging machine. A large amount of the grading is still done in the field and the pickers must therefore be thoroughly instructed in the requirements of the grades. Better growers in the South supervise the digging and picking operations very closely and have found that this attention to the harvesting has minimized injuries. Crates, baskets, and boxes are used for picking. The potatoes are then emptied from these containers into sacks or barrels for hauling to the warehouse or car or are hauled in

FIG. 304.—Grading and packing celery in the field

the picking containers. Some hauling is done loose in the wagon, but this method requires too much handling with a shovel or scoop.

Sizing machines have come into more and more general use in northern potato districts. As in other parts of the country the sizes are based on the requirements of United States grades. Stock smaller than permitted in U. S. No. 1 is seldom shipped. Unless these sizing machines are equipped with sorting tables an excessive percentage of culls are bound to be shipped. The belief of growers and shippers that running the potatoes over such a machine was all that was necessary to meet the grading requirements has accounted for a large part of the rejected shipments in the receiving markets.

The standardization of potato grades is a recent development. The investigations of the United States Department of Agriculture led to the recommendation of Federal grades in 1917. These grades were promulgated jointly with the United States Food Administration and all licensees of the latter were required to use them until

December, 1918. By that time they were fairly demonstrated and without Federal legislation of any kind they have continued in general use since that time. Many of the States have officially adopted the United States grades for potatoes. They are now the

FIG. 305.—Type of open shed used for the grading and packing of muskmelons in California and Colorado

State standard in 20 States and in addition are used as the basis for the official inspection services of 13 others.

The grading of other crops such as cabbage, celery, onions, and sweet potatoes is also done to a considerable extent in the field. (Fig. 304.)

FIG. 306—A well-designed apple packing house located near Hancock, Md.

Packing Houses

Where crops require careful and uniform grading and packing the work is usually done in packing houses. These structures range in type from the roughest sort of shelters such as are used in the muskmelon districts (fig. 305), to the large structures of brick, concrete, tile, or wood commonly found in fruit-producing sections

(figs. 306, 307, and 308). Packing houses are a more recent development in vegetable districts but are gaining in favor in sections specializing in tomatoes, lettuce, and cucumbers. Such establishments now handle a large part of the early-tomato crop of Florida, Tennessee, and California, and are in general use in the lettuce districts of Colorado and California.

Such houses have a number of advantages.

1. The centralization of the work permits the most efficient organization of labor avoiding the confusion and loss of time caused by moving the crew frequently.

2. They encourage the use of sizing machines and other labor saving devices which can not be used to advantage in the open.

3. They afford protection from the weather for the equipment, packages, and fruit.

4. They provide shelter for the packers and permit an accumulation of unpacked fruit so that the work may proceed without interruption in spite of unfavorable weather.

FIG. 307.—A very complete citrus packing house of permanent construction owned by one of the Florida citrus growers' associations

5. Community houses are regarded as essential in bringing about a satisfactory degree of uniformity between the packs of various growers. They are less common in the East, but growers in these regions have been experimenting for the last several years with the result that there has been a fairly rapid increase in the number of such establishments. Central packing houses are especially desirable in such districts as the Pacific Northwest, California, and Florida where the acreage is usually concentrated and where individual holdings with few exceptions are small—5 to 15 acres. A group of growers by joining forces may easily finance the erection of a modern establishment. In a community house it is possible to perfect an organization of trained men to bring their packing and grading operations to a uniformly high standard. The operations are generally on a large enough scale to warrant the employment of competent men to supervise the operations. The cost of inspection is also greatly reduced by having the work done at a central point.

Another important factor in favor of central houses, especially in northern districts, is better conditions for the employment of labor. Very few small orchardists have adequate houses and subsistence facilities for the care of temporary help during the packing season. In community houses it is also easy to provide for the comfort of employees in the packing room, an important consideration in retaining competent labor.

Community houses wherever possible are located on the railroad to eliminate the expense and possibility of damage in hauling packed fruit to the car, and to permit loading when weather conditions are unfavorable for hauling.

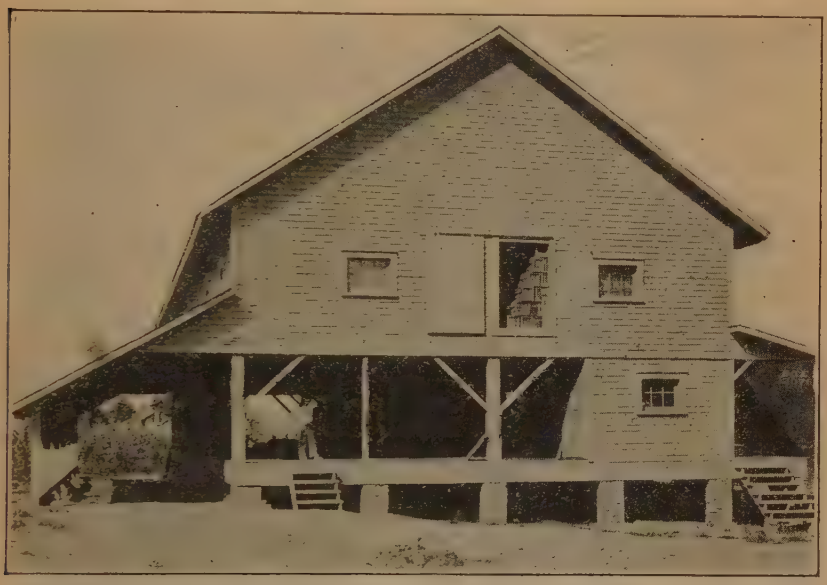


FIG. 308.—A peach-packing house of the type usually employed by the peach growers of Georgia and other Southern States. As the peaches are hauled from the orchard they are delivered under the shed, and after being graded and packed are loaded into the cars on the opposite side of the packing house. The large space above is for the storage of crates and packing materials

The equipment of citrus packing houses is probably the most elaborate and expensive. Machinery is provided for washing, removing frozen specimens, drying, sorting, and sizing the fruit. In addition, to this machinery there is special equipment for trucking, conveying, dumping, box making, pasting labels, and branding the individual fruit for advertising purposes.

The large well-equipped packing houses to be found in citrus sections (fig. 309) and the more highly specialized fruit regions are not characteristic of the vegetable-producing districts, or the older fruit districts. For some crops packing houses and storage warehouses are combined. This is true of potatoes, for example, which require only a limited amount of equipment for the grading and packing processes.

Packing houses may be owned by local dealers or by wholesale receivers located in city markets. Most frequently, however, they

are financed by local capital and in perhaps the majority of cases are owned and operated by local cooperative associations.

Certain factors are of prime importance in the design of packing houses for fruits and vegetables. Ample room for temporary storage of the product and for the storage of package material should be provided. The arrangement of the equipment should be carefully planned so that the product will move as nearly as possible in a direct line from the receiving platform to the car. Ample light should be provided. Skylights over the packing benches and grading belts are usually desirable. The location of the building is also an important feature.

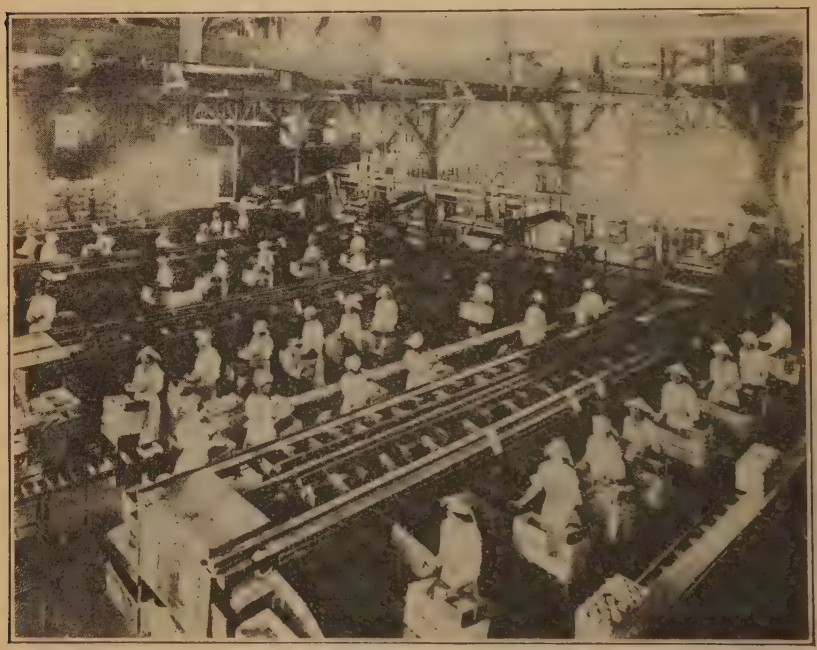


FIG. 309.—Interior of a well-equipped packing house designed primarily for packing oranges

A detailed discussion of packing houses, and the factors affecting their successful operation will be found in several bulletins issued by the United States Department of Agriculture.

Packing Processes

The processes involved in preparing fruits and vegetables for shipment vary, of course, with the nature of the product. In general they are (1) cleaning, (2) grading, (3) sizing, (4) packaging, (5) car loading.

Cleaning or washing of fruits is confined mainly to citrus fruit. (Fig. 310.) The fruit is delivered to a large tank filled with water, to which a cleaning or sterilizing solution is often added, and is carried by belts or roller conveyor under brushes which remove dust or other foreign substances adhering to the fruit. From the washing machine the fruit is carried by conveyors to an inclosed mechan-

ical dryer. Here it passes on slowly moving belts through a current of warm air circulated by large fans. The fruit, leaving the wide, slow-moving dryer conveyor, is carried by a narrow belt moving at a higher rate of speed to the grading belt.

Contrasted with this rather elaborate process lettuce or cabbage is merely trimmed in the field to remove unsightly or diseased leaves. Celery is washed before reaching the consumer, but this process usually occurs at the terminal market. Root vegetables may receive a small amount of trimming or cleaning before they are packed, bunch grapes are conditioned by removing decayed or injured berries, and apples and pears are sometimes wiped mainly to remove excessive dust or spray material.

FIG. 310.—Machine used for washing oranges and other citrus fruits

Grading includes the removal of unsalable specimens (fig. 311) and the separation of the remainder into various classes based upon color, shape, texture, freedom from disease or injury, and other similar factors. For certain vegetables but one commercial grade is needed for the greater part of the merchantable product. Lots not conforming to this grade are usually shipped as field-run or ungraded. In some cases this grade provides a minimum size, but in others the grade and size are dealt with separately. As a matter of fact in more recent years since the development of national grades there has been a definite attempt to separate the consideration of size from other factors influencing market quality. This policy

was found necessary in order to recognize the different requirements of various varieties and of different regions of production. For example, it is in line with good commercial practice to grade a smooth tomato of proper maturity as U. S. No. 1, but it is impracticable to require the same minimum size for the Livingston Globe, a relatively small variety popular in Florida, as for the Stone grown in northern districts. Fruits are usualy graded into three or four commercial classes. Various size groups are provided for each grade.

In a citrus-packing house the fruit which has passed through the drier proceeds on a moving belt in front of the graders, who remove the culls and place the various grades of merchantable fruit on belts which carry each grade to the proper sizing machine. Much

FIG. 311.—Common defects of potatoes which are considered sufficiently serious to bar them from U. S. No. 1 grade. Upper row, left to right, wire worm and scab injury; lower row, left to right, irregular second growth, late blight and tuber rot, and hollow heart

the same procedure is followed in northwestern apple-packing houses, except that the apples are transferred directly from the boxes in which they have been hauled from the orchard to the belt or conveyor that carries the fruit to the graders.

The importance of separating the fruits and vegetables into definite grades in conformity with market demands is now generally acknowledged. It is further realized that such grade must be standardized so that No. 1 apples, for example, from a certain section, will be consistently similar to other shipments of the same grade. The general subject of standardization is discussed in the following section.

Sizing, as a process preliminary to packing, takes place only in some of the more specialized fruits and vegetables, such as apples, peaches, citrus fruits, and tomatoes. Apples and citrus fruit, with

the exception of lemons, are sized by machinery. Oranges, for example, after being separated into the various grades, are carried directly to a machine which automatically separates the fruit into the recognized commercial sizes. Each size is delivered to a canvassed bin from which it is packed for shipment. Sizing machines are generally employed in the northwestern apple sections and are coming into use in the specialized producing sections of the East.

Packing of the fruit includes wrapping (for such products as are wrapped) packing, nailing the lid on the package, and strapping, or otherwise securing it to withstand handling in transit. Citrus fruit is wrapped and packed in boxes of a standard size according to a definite plan which varies for each size. Northwestern apples, pears, peaches, mangoes, avocadoes, figs, and the more perishable fruits are also wrapped except possibly the smaller sizes or poorer grades. Most other fruit and vegetable products are shipped without wrapping.

The important features of an attractive pack of fruits or vegetables are the neatness and firmness of the pack. It is usually necessary to pack the product with a decided bulge. The cover is nailed down tightly over this bulge and in this way a slack, unsightly pack at destination is avoided. The market value of attractive packs is well recognized by experienced growers.

The package unit is, as a rule, the size which is most acceptable to the wholesale trade. Attempts have been made, from time to time, to introduce so-called "consumer packages" of fruits and some vegetables. Such attempts have generally failed because it is impossible to guarantee the keeping quality of a perishable product. A consumer, from long experience realizes this fact and, consequently, will not readily purchase fruits or vegetables without seeing them. Unavoidable deterioration which is accepted by the trade as part of the risks of the business becomes a very troublesome question when the consumer is involved.

Bulk shipment is a general practice for certain vegetables. Watermelons are practically always shipped in this manner, as is most northern cabbage (fig. 312), and a considerable portion of the potato crop. Low-grade apples and citrus fruit are frequently shipped in bulk during periods of low prices. However, by far the greater portion of the fruit and vegetable shipments are transported in packages.

A shipping container for fruits and vegetables should combine strength with lightness, it should be attractive, and it should provide adequate ventilation for the commodity shipped. It should be light, because no one wishes to pay more freight charges than necessary. It should be attractive, because a large part of the buying public forms its judgments through its eyes and the favorable impression created by an attractive package is worth considering. To insure safe arrival at market, strength, adequate ventilation, and proper stowage in the car are necessary. If arrival in good condition is overlooked, the weeks or months of work and care which have gone into the growing of the crop may amount to nothing.

The public carriers of the United States say that in the handling of perishables the losses in one year amounted to $10,000,000. Among the many causes of these losses are rough handling, failure

to stow shipments properly in cars, delay in transit, lack of proper refrigeration, and frail containers. Such a tax on the fruit and vegetable business of the country calls for cooperation on the part of growers, shippers, container manufacturers, and carriers, in an effort to reduce the damage to the lowest possible point. (Fig. 313.)

As one step in this direction and as a protection to himself and his shipments, the intending buyer of baskets should require that the manufacturer furnish a definite statement of the specifications on which the baskets are made. Manufacturers should be glad to supply such information and undoubtedly will do so if they are

FIG. 312.—Carload of bulk cabbage, showing wooden ventilator through the center of the car

turning out a product of high quality. Many basket manufacturers are striving to put out an article which will stand up under heavy use, but there are also many baskets on the market of such poor quality that they should never be used in the shipping of fruits and vegetables.

Specifications insisted upon by the buyer should touch at least three points—capacity, material, and workmanship. In capacity, the container should be required to hold a designated number of United States standard dry quarts, struck measure. (Fig. 314.) This will insure compliance with the standard container act and will guarantee fairness to all.

A container for the shipment of fruits or vegetables, properly loaded and under normal traffic conditions, should be strong enough to carry the commodity intact from the grower to the wholesale

FIG. 313.—Damage to shipment resulting from the use of poor packages and of improper loading

market and thence to the retailer. Greater strength than this is unnecessary, but too much stress can not be laid on the importance of buyers insisting that their baskets be equal to the task imposed

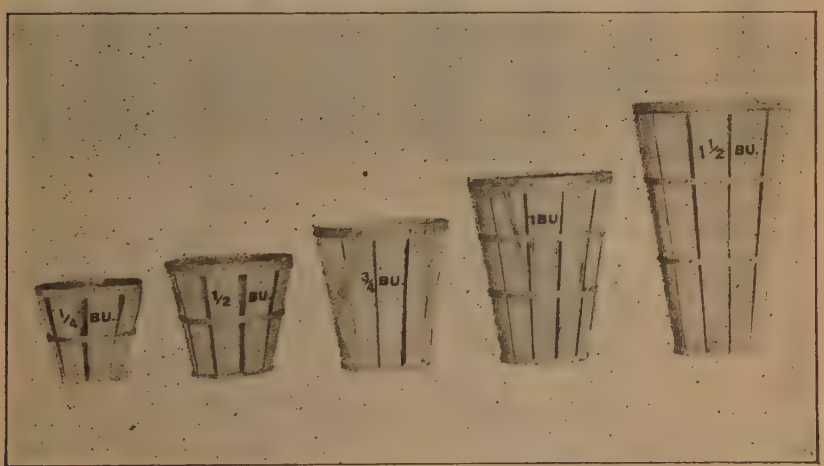


FIG. 314.—Typical containers holding a designated number of standard dry quarts, struck measure

upon them. Although such a container will be more expensive than a lighter one, it is better to pay more than to pay less and take the risk of broken packages and lost produce.

Strength specifications apply principally to the larger baskets which are not inclosed in crates for shipment. Strength is not so important a consideration in berry boxes and till baskets, which are placed in crates or boxes for shipment, but it is important that these small baskets should be of standard capacity.

Car loading is a particularly important consideration in the successful shipment of perishables. The packages must be loaded in the car in such a way that they will not shift while en route to market. Large losses from breakage, owing to improper loading and improper packages, occur every year. Crates and boxes can be loaded fairly easily, but various types of hampers and baskets make it more difficult to load a shipment in such a way that the packages will not shift in transit. However, there are methods of loading these packages which prove to be reasonably satisfactory.

FIG. 315.—A car of grapes packed in kegs, showing proper method of loading to insure circulation of air between the packages

Shipments moving under refrigeration must also be loaded in such a way that the circulation of cold air from the ice bunkers is not retarded. The load must provide for definite air passages between each row of packages. (Fig. 315.) Provisions for air circulation must also be made when a shipment is to be heated while en route.

Standardization

Standard grades constitute a common language between buyers and sellers. They facilitate grading, serving as a basis for (1) future contracts; (2) sales f. o. b. shipping points in transit and in other circumstances where the buyer can not exercise the privilege of inspection; (3) Government inspection, adjustments, and claims; and (4) the intelligent comparison of market prices.

In addition to these benefits which obtain by reason of a complete understanding between buyers and sellers as to the precise character of the product, there are other advantages which result from the actual sorting of the commodity, in so far as this is practicable, into classes which meet the particular requirements of the trade. Grading permits wider distribution because: (1) The more perishable lots may be sold without waste in near-by markets or utilized for by-product purposes, leaving the remainder for shipment to more remote points; (2) when properly graded some products may be held safely in storage, thus extending the marketing season; (3) certain classes of buyers are attracted who do not handle products of indeterminate quality, and (4) any sound advertising program must be based on uniform, dependable products.

An important benefit of standardization is the good will which it creates. Confidence in the products of a cooperative organization, and in its general business methods makes financing easier, increases demand for the organization's products, and reduces the margins of middlemen. Furthermore, the enforcement of standard grades at the point of production not only directs the attention of the grower to his mistakes in production and harvesting, thus stimulating him to correct them, but also insures him proper remuneration for more careful and effective methods. The necessity for standards in the marketing of agricultural products can no longer be regarded as a debatable point. For the present the great problems relate to their effective application. Cooperative associations have in the past been foremost in realizing the need of better grading and standardizing of farm products. Groups of growers working for their mutual benefit have often maintained voluntarily standards which would have been entirely impracticable had the trade attempted their imposition. However, the large number of commodities involved, the development of many systems of grading and packing, and the great variety of packages used in various parts of the country, have tended to increase the problems of standardization.

The United States Department of Agriculture is engaged in preparing grade standards for farm products. At present such grades have been formulated for the following fruits and vegetables: Barreled apples, asparagus, cabbage, cauliflower, cucumbers, celery, Florida citrus fruits, lettuce, northern-grown onions, Bermuda onions, peaches, pears, prunes, sweet peppers, potatoes, sweet potatoes, strawberries, cannery tomatoes, fresh tomatoes, watermelons, shelled Spanish peanuts, shelled Runner peanuts, farmers' stock Spanish peanuts, muskmelons, bunched beets, bunched carrots, bunched turnips, string beans (wax or green), spinach, pineapples, eggplant, juice grapes, table grapes, American bunch grapes and sawdust pack grapes, radishes, and globe artichokes.

Many of these grades, for example the United States grades for potatoes, are established throughout the country. Grades for other products are rapidly being adopted. The adoption and use of Federal grades are a requisite of the Federal shipping-point inspection service. It is a common observation that where no grade standards are recognized buyers are inclined to pay a flat price based on the average value, or something less than the average value. Conversely, trading on a quality basis is the greatest stimulus to

better methods of production, and definite, uniform grades are the means to that end. (Fig. 316.)

Shippers frequently complain of unjustifiable rejection of shipments on account of a declining market, or other causes. Buyers claim that they are often forced to accept poorly graded products. (Fig. 317.) The answer to the whole problem is definite, practical grades.

FIG. 316.—U. S. No. 1 grade potatoes. When trading is done on the basis of grade there can be no question as to the market quality of the stock

Transportation in Relation to Marketing

The transportation of fruits and vegetables is treated in detail in a succeeding section. Special phases of the transportation problem, however, have an intimate relation to the distribution of fruit shipments.

The problem of obtaining an adequate supply of suitable cars for moving large seasonable crops has always been a troublesome one. Over 15,000 cars of muskmelons were shipped from California in 1923, practically all within two months. During approximately the same period Georgia was shipping over 8,000 cars of peaches. The California citrus industry demands 200 to 400 cars a day during the winter season.

The industry has passed through acute emergencies when the actual shortage or improper distribution of cars have occasioned heavy losses both to the carriers and the shippers. In order to prevent a recurrence of such condition the Bureau of Service was organized in the Interstate Commerce Commission to keep in close touch with operating and transportation conditions through the country. Special attention is given by this agency to such problems as the need for increased car mileage, for heavier car loading, and for a decreased percentage of bad-order cars, as well as to the general promotion of operating efficiency.

The Bureau of Service keeps in close contact with the car service division of the American Railway Association. Conferences are held with shippers and carriers to correct erroneous practices and effect a better understanding between the carriers in relation to the public.

With a view to enlisting further the cooperation of the shippers the car-service division of the American Railway Association has organized a number of regional advisory boards. The expressed objects are:

(1) To form a common meeting ground between shippers, local railroads, and the carriers as a whole, as represented by the car-service division, for the better mutual understanding of local and general transportation requirements, and to analyze transportation needs in each territory and to assist in anticipating car requirements.

FIG. 317.—Trading on a "field-run" basis frequently results in the shipment of inferior potatoes and rejections upon their arrival at the market

(2) To study production, markets, distribution, and trade channels of the commodities local to each district with a view to effecting improvements in trade practices when related to transportation, and promoting a more even distribution of commodities where practicable.

(3) To promote car and operating efficiency in connection with maximum loading and in the proper handling of cars by shippers and railroads.

(4) To obtain a proper understanding by the railroads of the transportation needs of shippers, that their regulations may fit shippers' requirements, and to obtain understanding by the shippers and their cooperation in carrying out necessary rules governing car handling and car distribution.

These agencies of the Government and of the railroads have accomplished much in the way of better transportation service by furnishing an adequate car supply and procuring the prompt movement of both loaded and empty cars and the cooperation of the trade in unloading and releasing them promptly.

Efficient distribution requires fast freight service for perishable shipments. Some of the more perishable fruits, such as strawberries and Logan blackberries, are handled oftentimes in refrigerated express cars, and maintain a schedule equal to that of fast passenger trains. Express shipments of strawberries leaving Hammond, La., Monday evening, arrive in Chicago for Wednesday's market.

Most shipments of fruits and vegetables from specialized regions, however, are forwarded by fast through freights. Train loads of northwestern fruit leave the western shipping points daily during the season. These are consolidated at convenient points into through fruit trains to Minneapolis, Omaha, and Chicago. At the same time the railroad lines to the south are moving solid train loads of products from California. The schedule time for grapes from connecting points in California to Chicago is six days. Apples from Washington and Oregon are scheduled to reach Chicago in eight days. Shipments for New York and other eastern markets are consolidated at Chicago, and reach the Atlantic seaboard approximately 48 hours later.

The transportation services offered the producers in specialized areas have developed because of their demands for more rapid movement of their shipments to market. It has served, in addition, to reduce the risk of loss from deterioration in transit, and has measurably extended the market territory of more perishable products. This service is made possible by the large volume of shipments from producing sections which has resulted from concentrated, specialized production.

Diversion and reconsignment privileges now offered fruit and vegetable shippers aid in the distribution of the crop. A car of Florida vegetables may be billed to Potomac Yards, Va., for example. Previous to the arrival of the car at this point, the shipper may order it diverted to Pittsburgh, Buffalo, New York, or any one of the markets north of Washington, or east of Buffalo and Pittsburgh. The freight rate applied will be the through rate from the shipping point to the final destination. Or a car of California oranges may be billed to Kansas City, diverted to Chicago, if the Kansas City market is unsatisfactory, from Chicago to Pittsburgh, and from Pittsburgh to any one of a number of eastern markets.

The refrigeration of perishable shipments in transit has also been of great importance in extending the market area and reducing losses from deterioration. In some sections, cold-storage plants have been erected in which fruit and vegetable shipments are precooled—that is, the temperature of the shipment is reduced to a safe minimum before the packages are loaded in the car. Many of these plants are owned by growers' organizations.

The majority of refrigerated shipments, however, move under "full refrigeration." The ice bunkers of the car are filled with ice before the car is loaded and the supply is replenished, whenever necessary, at "reicing stations" en route. Other forms of refrigeration service are offered shippers. During fairly cool weather, for example, shipments may move to destination with only the initial icing.

The protection of shipments from frost damage in transit is not so well developed as is the refrigeration service of the carriers.

However, a "heater service," which is more or less effective, is offered shippers of northwestern apples, and a similar service is available for shipments, particularly shipments of potatoes from Maine, Michigan, Minnesota, and other Northern States.

The marketing of fruits and vegetables, therefore, is directly dependent upon efficient transportation. Furthermore, the cost of transportation is an important factor in determining the growers' net returns. Increases in freight rates have made profitable marketing more difficult in remote producing areas, and have made it all the more necessary to adopt efficient methods of handling and distributing the crop.

Terminal Facilities

The rapid growth of urban population, together with the increased per capita consumption of fresh fruits and vegetables, has taxed to the limit the railroad terminal facilities in the larger distributing centers. During recent years several important construction programs have been carried out with a veiw to relieving this congestion.

The modern wholesale terminal market in Los Angeles was opened in 1918. It covers 925,000 square feet of ground, the buildings have a floor space of nearly 2,000,000 square feet, and with space in the paved courtyard for 510 trucks. The buildings on the east side of the market have trackage for 50 cars.

At about the same time the wholesale terminal was built the city market, commonly called the Ninth Street market, was opened. The Ninth Street market is approximately two-thirds of the size of the wholesale terminal and is built on much the same plan, with the exception that no trackage is available. The Ninth Street market receives a large percentage of the home-grown fruits and vegetables, and the buildings are occupied mostly by jobbers. The wholesale terminal market is occupied by 200 tenants, of whom probably 75 are car-lot receivers and the remainder jobbers. A considerable volume of home-grown products is sold through the paved court and, in addition, small jobbers selling seasonal commodities such as watermelons, oranges, pumpkins, squashes, and grapes, are located in the open courtyard. (Fig. 318.)

The population of the city of Los Angeles has increased from 102,000 in 1900 to an estimated population of 1,000,000 in 1925. That the market demands of the city have outgrown present facilities is evidenced by the building at both markets of additional stores outside of the market proper.

Furthermore, there has recently been constructed in Long Beach a smaller market occupying about one city block which has eight jobbing houses and space in a paved courtyard for about 100 trucks. This territory formerly drew supplies from Los Angeles.

The largest market in the country has just been completed in Chicago, the dealers taking possession August 29, 1925. This project was originally given consideration in 1914 but was abandoned owing to the difficulty in agreeing upon a new location. It was not until January, 1925, however, that the purchase of the new site was concluded and arrangements made for the construction of the buildings.

The present location is within a few hundred feet of the center of population of Chicago. It is accessible to freight stations and railroad yards as well as to the retail trade of the city.

The buildings are of concrete, each unit having three stories and a basement. (Fig. 319.) The dimensions are 80 feet deep, and 20 feet wide with a 15 foot sidewalk. The sidewalk is 30 inches above the street level which facilitates the loading and unloading of trucks. The street in one section is 90 feet between curbs and in the other 66 feet. Permanent canopies are erected both in the front and in the rear.

A large cold-storage plant is located at one end of the market from which brine is piped to the individual cooling rooms throughout the market. A 10-story office building is now under construction at one corner of the market and another 5-story office building is also under way. Negotiations are about completed for new terminal fa-

FIG. 318.—Los Angeles terminal market

cilities, and although this is a separate project, it is in effect a part of the development for the new market.

With reduced hauls, freedom from congestion, and comparatively lower rentals, it is estimated that the new Chicago terminal market will effect a saving of approximately $3,500,000 a year to the industry as a whole. This estimate does not take into consideration such items as waste of foodstuffs owing to delays and accidents or other savings in time.

Two lines of terminal development are being followed in the New York area, one aiming at unified and modernized primary receiving facilities on Manhattan Island, the other stressing new stations in the remaining boroughs of the city and the suburban sections of New Jersey. The first reflects the effort to relieve the congestion caused by a rapidly growing traffic flooding over obsolete pier stations, and the second expresses the popular agitation for decentral-

ized primary markets to which cars may be routed directly without passing through the Manhattan market. The present central produce market is located on the lower west side of Manhattan between Vesey and Franklin Streets. The railroads furnish transportation service by car float to water-front pier stations in the vicinity. These piers were not planned for the receipt and distribution of produce and to-day are the scene of congestion, delay, and high handling costs.

The traffic, particularly that portion made up of the western deciduous fruits, has increased very rapidly during the last two decades. Total car lots now being handled over all the produce pier stations amount to about 90,000 cars a year while seasonal peaks reach over 550 cars a day. Because of the extreme seasonal variation in shipments from the areas served by each carrier, the piers are subjected to alternating periods of idleness and extreme congestion.

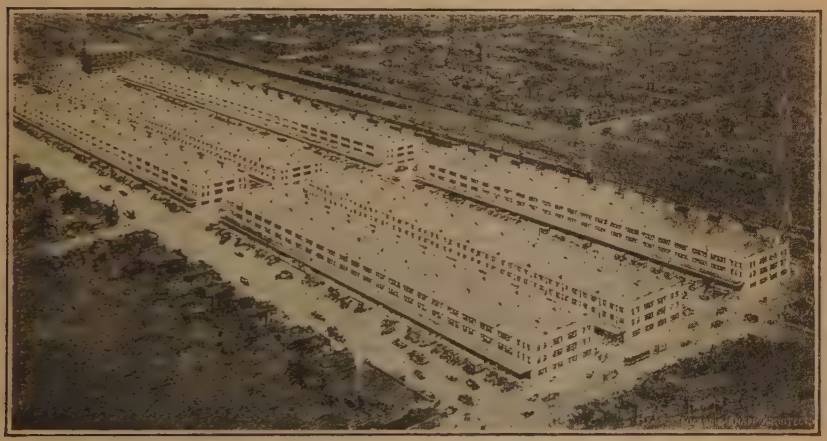


FIG. 319.—New Chicago produce market completed in August, 1925

During the last five years the situation has been acute and temporary relief has been obtained only by resorting to such expedients as embargoes, use of the street in front of the piers, and removal of selected commodities to New Jersey yards. The resulting disturbance of traffic, division of the market, and increased trucking costs have satisfied neither shippers nor receivers.

For some years plans have been maturing for a unified car-float terminal to which all of the carriers might have access and at which deliveries might be concentrated for easy inspection and trading. In December, 1923, the commissioner of docks of the city of New York made public a plan for such a water-front terminal which had been worked out in conference with the trade. This plan provided for a covered platform 450 feet wide, built upon piles outshore from the bulkhead and extending along the water front a distance of 1,000 feet, in place of the present piers. A maximum of 810 carloads can be handled through this station, ample provision being made for display and trading space within the structure. In a recent report of the Port of New York authority, the bi-State body created to administer port development in New York harbor, this plan has been indorsed with certain recommended changes in

interior design which will allow platform consolidation of job lots for removal by truck. It is estimated that the consolidation by modern equipment within the terminal will reduce annual cartage and handling costs by about $500,000.

While these plans for a unification of facilities on Manhattan Island are advancing, steps are being taken to develop market terminals in other sections of New York City and adjacent cities in northern New Jersey. The New York City Board of Estimate and Apportionment has approved a $22,500,000 program for the erection of markets in three boroughs of the city. A six-story market building for receipt and storage of produce has been erected adjacent to the Harlem River at One hundred and fifty-first Street in the Bronx at a cost of $7,500,000. The present Wallabout jobbing district in Brooklyn has been chosen as the best water-front site for a primary market in that borough. Some difficulty has been met in obtaining float-bridge access to serve this market but the latest plan, announced in June, 1925, provides for a location adjacent to the Wallabout Canal upon which a $500,000 plant is to be erected. The principal features are a five-story market and cold-storage building and four produce platforms with track connections located near by. Detailed plans for an additional $10,000,000 terminal in the Fourteenth Street district of Manhattan have not as yet been announced.

On the other side of the Hudson River the development of team-track yards has advanced considerably in the last year. In order to take care of the heavy juice-grape tonnage, the Erie Railroad has constructed at Monmouth Street in Jersey City, adjacent to their present Pavonia Avenue station, a new yard of nine tracks and three display platforms to hold approximately 170 cars. In Newark, N. J., where over 10,000 cars of fruits and vegetables are unloaded annually in addition to those trucked from New York City, the Pennsylvania Railroad has a $100,000 improvement at the Hunter Avenue yard, near the new wholesale produce section in the southern end of the city. It is expected that this center will grow to an important market for northern New Jersey.

Market Outlets

While radical changes have been made in methods of harvesting, grading and packing fruits and vegetables, methods of distributing and selling the crop have also undergone a change. The most evident has been the appearance of large distributing firms and cooperative sales agencies. There has been an increase in the number of distributors who are represented by their own employees in the larger markets. There has been a decided tendency also toward the sale of fruits and vegetables, f. o. b. shipping point, with the buyer reserving the right to inspect the shipment at destination. Produce brokers, commission merchants and fruit auctions are all employed by shippers to sell their products to the wholesale and retail trade.

The net result of these changes is that the number of car-lot markets for fruits and vegetables has been greatly increased. Towns and cities that formerly received their supplies in less than car lots from the terminal markets now receive the more important fruits and vegetables in car lots direct from the point of production.

With the development of better packing and handling methods it has been possible to extend the territory over which shipments are distributed. Better grading has made it possible to sell under recognized brands and to advertise certain products to the consumers.

Competitive conditions in the production and marketing of fruits and vegetables have fostered the extension of markets as well as the improvement of grading and handling practices and the elimination of wastes in marketing. The grower in a specialized producing dis-

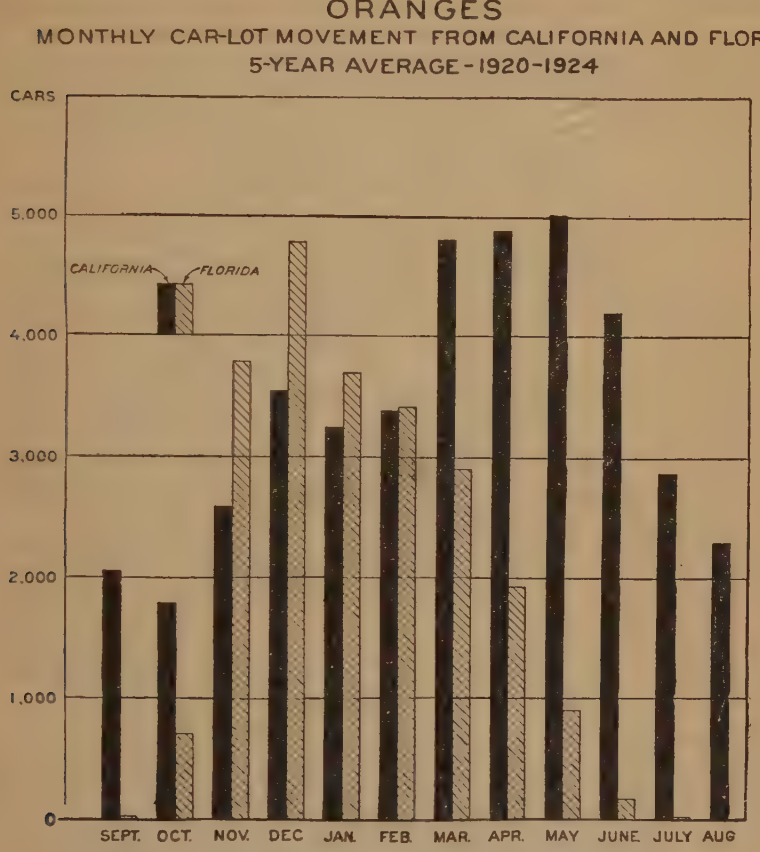


FIG. 320.—Average monthly car-lot movement of oranges from California and Florida covering the five-year period 1920–1924

trict may sell his products in any one of hundreds of markets, while the grower in a nonspecialized area may be confined to one, or at most to a few markets.

The 1924 peach-shipping season illustrates the problem of distributing a short-season crop from a region of concentrated production. Within a period of 10 weeks 13,500 cars were shipped from Georgia into markets east of the Mississippi. Over 75 per cent of these shipments were made in July, the movement for the month reaching a total of nearly 10,500 cars. During the same period over

15,000 cars of muskmelons were shipped from the Imperial Valley of California and nearly 23,000 cars of watermelons from Florida and Georgia. In order to avoid in so far as possible an oversupply in the large markets the distributors made maximum use of smaller markets. Nearly 80 cities received 5 cars or less, and 30 more took 5 to 10 cars. However, the bulk of the crop was sold in the large centers of population. Of the total shipments, 13,500 cars, from Georgia, 9,800 were unloaded in 25 principal markets and well over one-third of this number went to New York City alone.

An interesting study in competition is seen in the distribution of oranges from California and Florida. California shipments extend over the entire year, whereas those from Florida are marketed from September to June. Figure 320 shows the average monthly move-

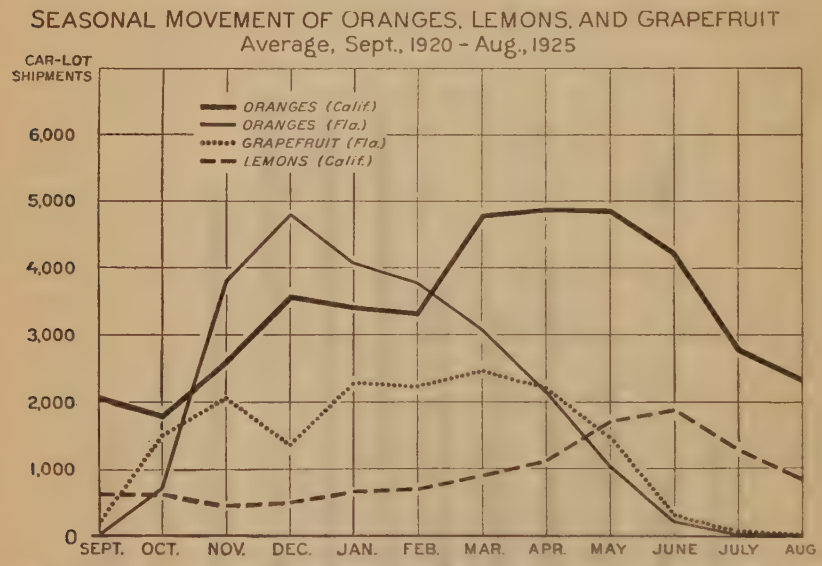


FIG. 321.—The seasonal average movement of oranges, lemons, and grapefruit from Florida and California for the period 1920 to August 1925

ment for the years 1920–1924 inclusive. Figure 321 shows the seasonal movement of oranges, lemons, and grapefruit from Florida and California. Owing to advantages in transportation rates certain markets are supplied almost exclusivey by either California or Florida, but in the northeast quarter of the United States competition is extremely keen.

Commercial potato production is widely scattered throughout the country. There is a continuous overlapping of shipments from the various districts during the season. The new crop from the South also competes with northern shipments out of storage. The regions of production and shipping season is shown in Figure 322.

The sources of city supplies vary from season to season depending upon crop conditions. Marketing agencies and services and the methods of sale offered the grower have increased. These agencies and selling methods are discussed in the following sections.

Market News

Efficient marketing of fruits and vegetables must be based on a knowledge of supply and market demand. Two types of information are necessary.

(1) A knowledge of seasonal conditions. This includes information regarding crop conditions in competing areas, and the supplies of competing crops. For example, strawberries and muskmelons compete directly as a breakfast fruit, and the strawberry shippers are interested in the quantity and quality of muskmelons offered for sale. In addition to crop conditions, from which an estimate of the probable supplies can be made, it is necessary to know the time at which shipments will move, the storage stocks that may come into competition with the new crop, and the general quality of the crop.

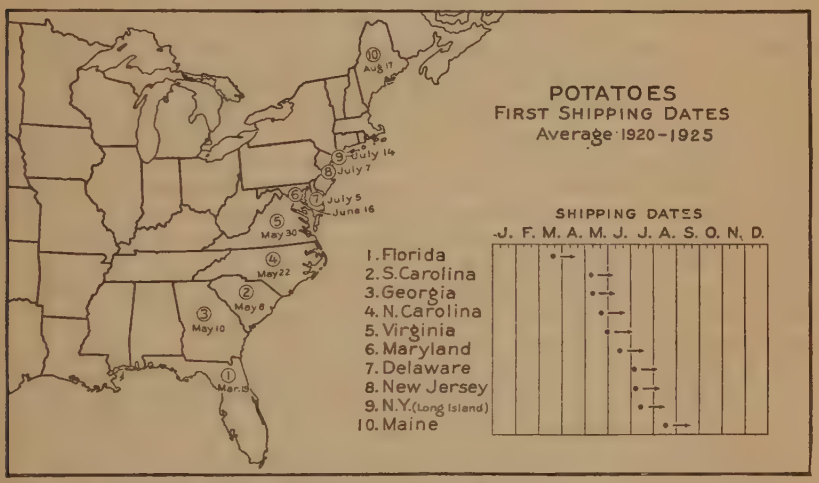


FIG. 322.—Seasonal distribution of potato shipments from points along the Atlantic coast

On the demand side, it is important to have information regarding industrial conditions in the markets where the crop is sold, and the probable purchasing power of the consumers. The relation of these factors to the prospective supply will indicate the price level at which the crop will move.

(2) After movement of the crop has begun, it is essential to have current information regarding prices and supplies. It is on the basis of such information that the up-to-date sales manager distributes the shipments that he controls. Essential information, in addition to prices are the daily car-lot shipments, the number of cars passing certain gateway points daily, daily receipts at the important markets, and the number of cars unsold on track at the close of each day's business.

Fruit and vegetable shippers depend, to a large extent, for price information on daily quotations by telegraph from their agents and brokers. There has been, however, a large demand for market news collected by an unbiased agency, according to uniform methods and

disseminated widely. In addition, dealers are unable to collect accurately such information as daily shipments and receipts.

In response to this demand, a number of private price-reporting agencies have issued daily bulletins from various markets giving arrivals and prices of fruits and vegetables. At the present time, however, the growers, shippers, and handlers of fruits and vegetables depend on the nationwide market news service of the United States Department of Agriculture.

Through its market news service the Department of Agriculture renders direct assistance to growers, shippers, and handlers of fruits and vegetables. Daily mimeographed market reports are issued from 18 of the largest receiving and consuming markets to mailing lists totaling approximately 50,000 names, while similar market reports are distributed from temporary offices located in important-producing areas during the heavy shipping seasons to a total mailing list of approximately 35,000.

These market reports which show the daily car-lot movement to market, the market conditions, and prices in the most important producing areas and the receipts, market conditions, and prices at the larger terminal and consuming markets enable shippers to market their produce more intelligently. They show the best markets to which to ship, both as to price and present and probable supplies on the markets. If the supplies on a particular market, for example, are heavier than it can consume within a reasonable length of time and the daily receipts increasing, it is apparent to a shipper who studies market conditions that to continue shipping to that market under those conditions will inevitably result in unsatisfactory financial returns. If a market is too heavily oversupplied a glut will ensue with disastrous results to the shippers, since in many cases where it is impossible to divert cars to other markets carloads may be sold at forced sale to satisfy freight charges. When such action is necessary it is seldom that more than freight charges are realized, which, of course, means that the shipment is a total loss in so far as the original shipper is concerned. If a depressed market appears inevitable or a glut probable the shipper, by keeping posted on market conditions as given in these market reports, is in a position to avoid loss by shipping to another market or, if he has a car already moving to an oversupplied market, diverting the car en route, thus aiding in furnishing a steady, even supply to the consuming public at a reasonable price to the purchaser and a consistent return to himself. The market reports also keep shippers informed as to prevailing prices in the terminal markets so that no one need me misled by unscrupulous buyers or dealers.

To the handler of fruits and vegetables in the city markets, the market reports are of inestimable value. They not only show the prices in competing markets, but also give the volume of car-lot movements for the previous day, as well as the prevailing prices in the principal producing areas which are the main sources of supply. Market reports on peanuts and honey, which are issued weekly and semimonthly respectively, are of the same value to the peanut and honey trade as fruit and vegetable reports are to the fruit and vegetable trade.

Monthly records of the car-lot unloads of the principal fruits and vegetables are obtained covering 34 of the largest markets in the

country. This information is particularly valuable to anyone making a scientific study of marketing. The unloads show the flow of supplies to market and the consuming capacity at the prices prevailing at the time. A study of the unloads and prices will enable one to judge fairly accurately what the market will be under given conditions, a possibility that is being realized by a larger number of handlers of fruits and vegetables each year, as is evidenced by the increased yearly demand for information of a statistical or research nature, especially for practical purposes.

Distributing Agencies

The distributing agencies are the connecting links between the producers and the consumers. (Fig. 323.) The growers produce fruits and vegetables in bulk, in a variety of grades and sizes, and at certain seasons of the year. The consumer demands a small quantity, he usually wants a certain size or grade, and wants to be supplied more or less continuously throughout the year. The distributing agencies perform the services that are necessary to deliver the product to the consumers at the time, the place, and in the form necessary to satisfy their demands.

There are several distinct types of distributing agencies furnishing some part of the services necessary to market fruits and vegetables. Their location, the services rendered, and the basis on which a charge is fixed for these services are shown in Table 1.

TABLE 1.—*Types of fruit and vegetable distributing agencies*

Type of agency	Location	Service performed	Remuneration
Cooperative sales agency	Shipping point	Selling agents	Cost of service.
Noncooperative sales agency.	do	do	Fixed brokerage.
Cash buyers	do	Buy for resale	Market spread.
Buying brokers	do	Buying agents	Fixed brokerage.
Selling brokers	All carlot markets	Selling agents	do.
Commission merchants	All wholesale markets	do	Fixed percentage.
Fruit and produce auctions.	Large markets	do	do.
F. o. b. auctions	do	do	do.
Receivers and jobbers	All wholesale markets	Buy for resale	Market spread.
Retailers	All retail markets	do	do.

Cooperative sales agencies may be local, regional, or national from the standpoint of either the producing area or the consuming area served. In addition, they may be operated by and for one particular section and commodity, or may serve many organizations, many consuming centers, and handle many kinds of products. For example, the production area served and the products handled by the sales department of the California Fruit Growers Exchange are limited, but the consuming area served is international. Another example is the Federated Fruit and Vegetable Growers, Inc., an organization that serves many producing areas, handles many kinds of products, and maintains market agents in many consuming centers.

Cooperative sales agencies selling fruits and vegetables for cooperative associations generally maintain offices at some central point in the markets, or sell through brokers or other types of agencies.

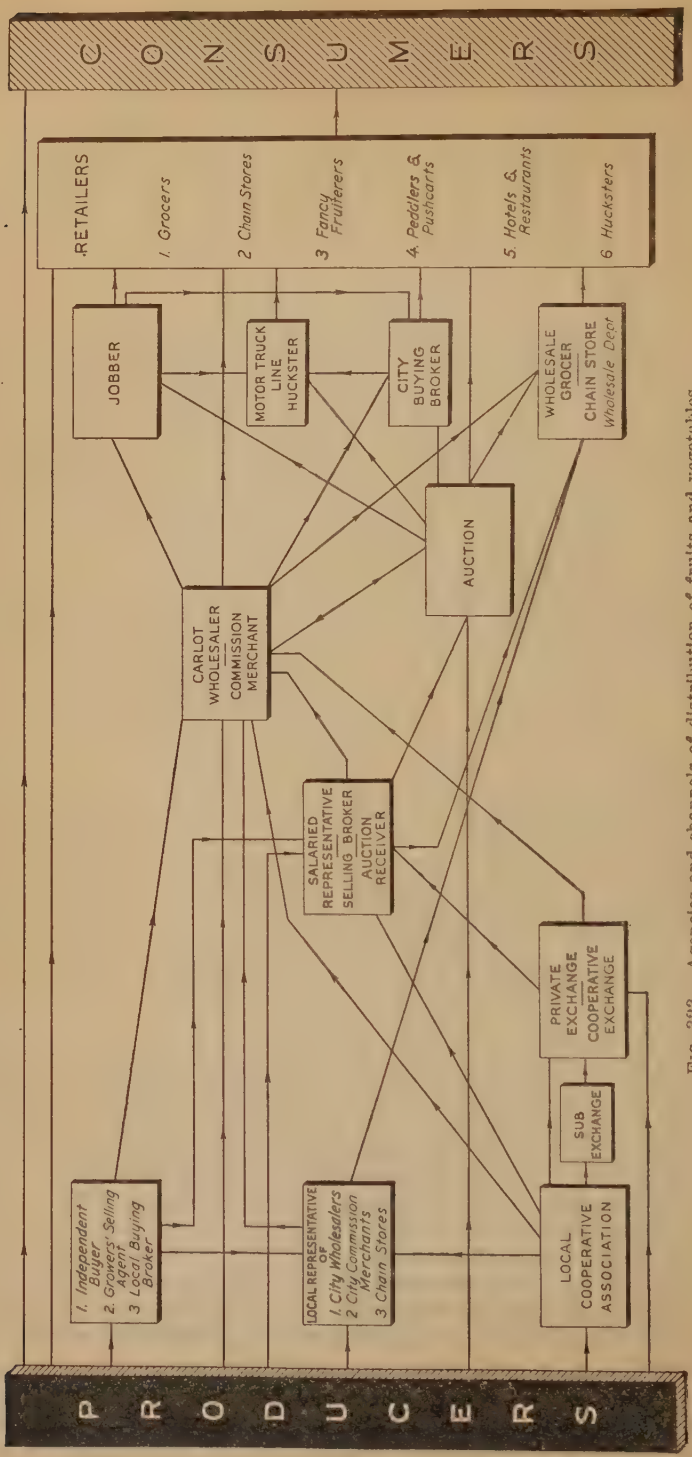


Fig. 323.—Agencies and channels of distribution of fruits and vegetables

Their charges are based on the cost of operation, but are collected generally as a fixed charge per package or per car and any excess refunded later. Noncooperative sales agencies are private sales organizations operating on a per package or per car charge stipulated in a contract with the organization served. In operation, they differ little from cooperative sales agencies.

Both noncooperative and cooperative sales agencies sell either through their own agents, or brokers, usually in carload lots, to wholesale receivers and large jobbers. They may also sell to large retailers, such as the chain-store systems. Their sales, as a rule, are made on wire quotations from the shipping point, and either as f. o. b. or delivered sales. A portion of their supplies may be sold through the terminal fruit and produce auctions in the markets in which these auctions are located.

The cash buyer purchases products prior to shipment and often harvests, assembles, grades, and packs the products and supervises the loading. He may operate for his own account or on a joint account agreement with a large distributing firm, or a receiver in the market, or he may be the salaried representative of such firms or receivers. Though cash buyers are to be found at most shipping points, the producing and consuming areas served by each are rather limited—very often a cash buyer handles but one product and uses a limited number of markets.

The buying broker operates much like the cash buyer, except that he does not buy for his own account but acts as the agent of the purchaser. Generally the buying broker handles only car-lot quantities which he inspects, purchases, and ships in accordance with his principal's instructions. His compensation is an agreed brokerage charge.

Brokers located in the terminal car-lot markets are the agents of the sellers. A broker receives quotations, presents the seller's offerings and terms to the buyers, and reports the buyers' acceptance, or their counter offers to the shipper for confirmation or rejection. If the sale is confirmed, the broker's responsibility is at an end when he reports the shipper's confirmation to the buyer. The shipper assumes the financial risk and the task of collecting the proceeds of the sale from the buyer. The broker's compensation is generally a stated charge per car which varies somewhat for different commodities.

Another agency of distribution is the fruit and produce auction. One or more auctions are located at present in Baltimore, Boston, Chicago, Cincinnati, Cleveland, Detroit, Minneapolis, Newark, New Orleans, New York, Philadelphia, Pittsburgh, St. Louis, and St. Paul. They receive shipments on consignment and place samples of such shipments on display in the warehouses. Shipments are listed and described as to quantities, grades, condition, variety, and other factors necessary to establishing value, in catalogues circulated prior to the sale. At the call the lots of fruit and produce are sold to the highest bidder. (Fig. 324.) A fixed percentage charge, plus the freight is deducted and the balance is remitted to the shipper or his agent. Jobbers, retailers, hucksters, hotel supply agencies, and other less-than-car-lot buyers purchasing fairly large quantities, patronize the auctions. Sales to out-of-town buyers are limited.

The f. o. b. auction is national in character, maintaining a central office with branches or salesrooms in several of the larger cities. Shipments at shipping points, or en route, that have been inspected at point of origin by Federal or other agents are listed for sale. Such listings are made by telegraph to each auction salesroom. At call the buyers assemble at each of the auction rooms and make bids on the lots in which they are interested. These bids are transmitted by telegraph to the central auction office, and also to all other auction rooms, so that bidders may know what other bids have been made. The auctioneer who conducts the sale is located in the central office. He sells the shipment to the highest bidder in any market, at a certain price f. o. b. shipping point. The purchaser pays the branch house of the auction located in his market, and the money is remitted through the central office to the shipper.

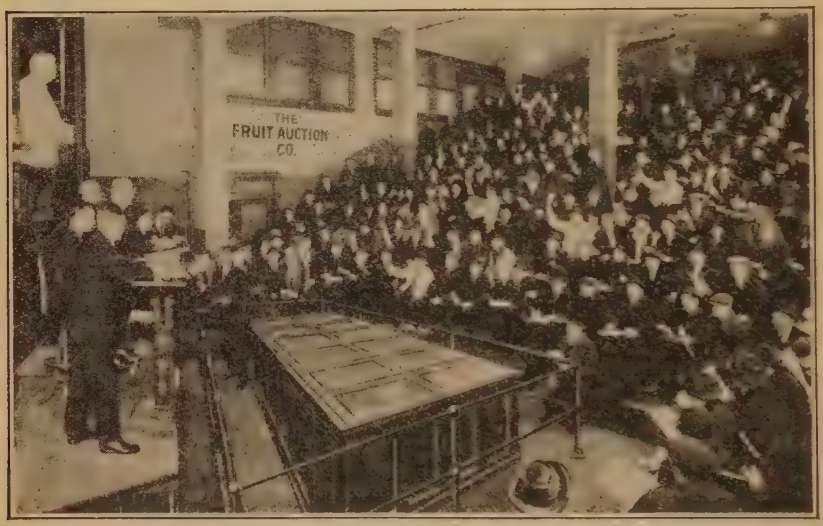


FIG. 324.—Fruit auction in New York City, where thousands of carloads of fruits and vegetables are sold

Commission merchants are to be found in nearly all wholesale markets. They are receivers of car-lot, or often less than car-lot shipments consigned to them by growers, growers' associations, or other shippers. They dispose of these shipments in comparatively small lots to jobbers, retailers, and other buyers. Their sales are usually made from their stores in the wholesale produce district, but may be made directly from the cars in the railroad yards.

Commission merchants, as a rule, handle a wide variety of fruit and vegetable products. Many commission merchants also operate at times or continually, as jobbers or receivers, buying shipments for resale. In fact, there is no sharp division of functions between the various distributing agencies. The concerns generally described as "receivers" or "car-lot wholesalers" perform practically the same functions as the group generally described as "jobbers." Receivers, however, usually buy carload lots, while jobbers may not. Receivers may resell in carload lots, while jobbers sell relatively small lots. The chief distinction is the volume of business handled.

The consuming territory which they serve may be one city, or a part of a city, or may extend over a territory including several cities or towns. Receivers and jobbers differ from commission merchants in that they buy products for resale. From the point of view of distribution, these functions are much the same as those of the commission merchants.

Retailers include chain stores, local unit grocery stores, markets, fruit stores, hucksters, push-cart venders, and to some extent, department stores, and 5 and 10 cent stores. They buy occasionally in car lots, but usually in less than car lots, and resell in quantities purchased by the average family. The cost of retailing fruits and vegetables exceeds the total of all other marketing agencies and operations. Studies of the retail margins for oranges sold through the California Fruit Growers Exchange in a number of markets for the years 1917–1921, show that the retailer received as an average $1.88 for each box of oranges which he handled, compared with $1.25 for all other packing and marketing services, $1.22 for transportation and $2.78 received by the producer.

A large part of the retail margin retained for fruits and vegetables is due to the high cost of selling and delivering small quantities to a large number of customers: a part is due to the perishability of the product. This can be overcome to some extent by the adoption of standard grades and more careful packing and handling methods by the growers and their associations. Some large organizations are actively engaged in campaigns to demonstrate to the retailer that it is relatively more profitable for him to handle a larger volume at a smaller margin. It is probably true that the consumption of fruits and vegetables may be further stimulated in this way.

Methods of Sale

Fruit and vegetable organizations may make "track sales," "f. o. b. sales," "delivered sales," or "consignment sales." Some confusion and misunderstanding exists among shippers and buyers as to the meaning and conditions of each of these methods.

Track sales are sales wherein the terms and conditions of the sale are completed after an inspection of the shipment by the buyer. Such sales, therefore, may be made at either the shipping point or the destination. The buyer pays the seller or his agent directly.

Rules governing destination track sales, agreed to by a number of organizations representing shippers and the wholesale trade, read in part as follows:[1]

> When a commodity is sold on track after arrival at destination, the buyer shall be considered to have waived any right to reject the commodity so purchased upon receipt by him or his duly authorized representative, from the seller or his duly authorized representative, of the bill of lading, delivery order, or other document enabling him to get the goods from the carrier.
>
> The foregoing shall not be construed as depriving the buyer of a right to reparation when the unloading of the car shall demonstrate that a part of the lading which was not accessible to inspection was of a quality or condition much inferior to that portion which was accessible to inspection; but any such claim for reparation must be made within 24 hours after receipt of delivery order or bill of lading.

[1] Standard Rules and Definitions of Trade Terms (1924).

A f. o. b. sale may be made of carloads of fruits or vegetables ready for shipment at the seller's station, of products to be loaded at a specified future date, or of cars which are already en route to market. The f. o. b. method of sale is defined as follows:

> F. o. b. sales, or quotations, means that the commodity quoted or sold is to be placed free on board the car, or at ship side at shipping point, in suitable shipping condition, and that the buyer assumes all risks of damage in transit not caused by the shipper, whether there is a bill of lading to the order of shipper or not.

A draft, usually payable on the arrival of the shipment, is drawn by the seller upon the buyer, and is sent, together with the bill of lading, or a car-delivery order, to the buyer's bank. Upon payment of the draft the bill of lading or car-delivery order, are turned over to the buyer. If the sale is made "f. o. b. usual terms," inspection by the buyer is permitted prior to payment of the draft, but the privilege of inspection does not influence the stated terms or conditions of the sale. However, if the terms and conditions of the sale have not been complied with by the shipper, or if the product is not of the grade or quality ordered, the buyer may refuse to accept the shipment or may ask for an allowance consistent with the difference between the value of the product ordered by him and that he has actually received.

Sales of fruits and vegetables by the f. o. b. methods have increased during recent years. At the present time, a large portion, for example, more than 75 per cent of northwestern boxed apples are sold in this way. However, the system is as yet not thoroughly understood and misunderstandings often arise. Rejections of shipments sold f. o. b. have greatly increased in the last two seasons.

The third method of sale is the "delivered sale." The following definition of a delivered sale has been accepted by trade organizations:

> Delivered sales or quotations mean that the commodity quoted or sold is to be delivered by the seller on board the car, or on dock if delivered by boat, free of any and all charges for transportation or protective services, at the market in which the buyer is located, or at such other market as agreed upon, the seller assuming all risks of damage in transit not caused by the buyer.

This method of sale has been in use for some time. A considerable portion of the California citrus and deciduous-fruit shipments is sold on a delivered basis.

When a car is sold delivered, a draft, covering the price agreed upon, usually accompanies the bill of lading, or payment is made to the shipper's agent. Inspection is allowed, as in the case of f. o. b. sales. If the shipper fails to comply with the terms of the sale, the buyer may reject the shipment.

Many shippers consistently offer a portion of their best products for sale through the auctions in the belief that the publicity attending this method of sale creates a favorable impression among the trade toward a shipper who offers high-grade products that sell near the top of the market. Auction prices in measure set the price for similar commodities sold at private sale in the same market, and, to a less degree, in other markets. On the other hand, many shipments that show decay and deterioration are sold at auction because they can be most quickly disposed of by this method.

The consignment of shipments to commission merchants was formerly one of the most common methods of marketing fruits and vegetables. At the present time, also, some growers, cash buyers, or small cooperative organizations find it a satisfactory method of disposing of the shipments. Returns are made to the shipper when the shipment is sold. The commission merchant, however, frequently agrees to accept the shipper's draft for a part of the estimated value of the shipment.

With the development of cooperative sales agencies, and other large distributing firms, the consignment of fruit and vegetable shipments has declined. The direct sale of shipments, either the f. o. b. or delivered, is the standard method of marketing fruits and vegetables at the present time. The advantages of this method are that it permits the organization to influence the distribution of the shipments and the price at which they sell.

Adjustments and Rejections

Reports indicate that the number of rejections and claims from buyers for allowances are increasing. This condition can be attributed, in part, to the fact that buyers and shippers do not fully understand the conditions of the methods of sale used, too lax methods of grading and inspection, to the tendency of some buyers to attempt to find something wrong with shipments when the market is declining, and perhaps also to the fact that many sellers do not hold buyers strictly to the terms of the sales contract, because of the fear of losing their further trade.

There is, of course, no specific remedy for the situation, but there are steps that can be taken to reduce rejections to a minimum. Buyers and sellers should understand clearly their rights and obligations under each method of sale. The following rules regarding rejections have been accepted generally by organizations of produce dealers:

The buyer shall not unjustifiably reject fresh fruits or vegetables. Delay in transit shall not of itself justify rejection unless a specific delivery date has been contracted for.

The buyer shall notify the seller by wire where possible, or notify the sellers' local representative, within 24 hours after shipment has been placed where inspection is practicable, of refusal to accept a shipment or intent to file claim and give reasons therefor (other than claim against the transportation company). Failure of such notice shall constitute acceptance; except that it shall be proper to determine (as may be customary) shortage, waste, etc., of particular commodities subsequent to unloading and failure to notify the seller or his representative, shall, not in such circumstances serve as a waiver of the buyer's right to file such proper claim. The buyer shall, however, be required to immediately notify the seller or the seller's representative of any condition which may cause unusual or excessive waste or shrinkage, and shall unload the goods promptly in order to minimize such waste or shrinkage. In the case of claims against shippers for failure to comply with the terms of contract of sale as to grade, pack or condition, or involving excessive shrinkage and waste, the buyer shall provide the seller with such records and competent testimony as will serve to substantiate his claim. If the seller does not allow the claim he shall promptly notify the buyer, stating his reasons for disallowing the claim.

Except as may be required for the proper inspection of the lading at the car, the removal of the goods from the car by the consignee shall constitute acceptance. In event that false or fraudulent loading or packing shall develop during the process of unloading, the buyer shall immediately so notify (by

wire if possible) the seller or his agent. Acceptance of goods under such conditions shall not serve as a bar to recovery under breach of contract.

The shipment of products of uniform grade and quality is the most important step a shipper can take to prevent rejections. Under these conditions, the shipper is able to take a firm stand in the event a shipment is rejected unjustifiably. An organization whose shipments are uniformly satisfactory attracts the attention of the best class of buyers, and is generally in a position to refuse to deal with buyers who fail to meet their obligations.

In handling adjustments and rejections, it is desirable to have a report on the condition of the shipment made by a disinterested agency. For many years, such a service has been offered in the larger markets by private agencies. During recent years, however, cooperative associations and other shippers have depended largely on the inspection service furnished by the United States Department of Agriculture.

Inspection of Fruits and Vegetables

Present-day methods of sale have brought about conditions where it is often essential that a shipper have an unbiased report regarding the quality and condition of a shipment. Rejections of shipments sold f. o. b. have given rise to this condition. In this situation, the shipper, unless represented by a reliable agent, is at a disadvantage in dealing with the buyer. The shipment under dispute may be in a market 2,000 miles distant from the shipping point. Although the buyer may satisfy himself by inspection as to the condition of the shipment, the shipper can not do this. He can not know whether the rejection of the shipment is justifiable, or whether the allowance the buyer claims is fair. In cases of dispute the logical step is to have an appraisal of the shipment made by a disinterested party. This service has been rendered for many years by private inspection agencies in the large markets.

Several objections have been named to these agencies from the shippers' point of view: (1) The markets they covered were limited; (2) there was no uniformity of inspection methods between different agencies and different markets; and (3) these private agencies being located in the markets and in daily contact with the buyers do not have the full confidence of the shippers. Because of these conditions, an inspection service for fruits and vegetables was established in 1917 by the United States Department of Agriculture.

The inspection service of the Department of Agriculture provides for certification of market quality and condition of fruits and vegetables upon the request of any financially interested party. This service was established in November, 1917, as a war-emergency service with a threefold purpose—(1) to protect the producer against unfair rejections by receivers; (2) to obtain the quick adjustment of differences between shippers and receivers and so hasten the unloading of cars which were needed for continuous duty during the war emergency and (3) to prevent the waste of food which is incident to delays in handling resulting from differences between shippers and receivers. This service was successful in accomplishing the purposes for which it was established and aided the Food Administration by furnishing the information necessary to adjust the

many differences between shippers and receivers which were handled by that organization.

The service demonstrated its usefulness as an aid in marketing fruits and vegetables during the first year of its existence and provisions were made for its continuance by an item in the regular agricultural appropriation bill for the fiscal year of 1919. This appropriation has been renewed from year to year with such changes in authority and amount of appropriation as the needs of the service seemed to warrant.

At first the service was restricted to the inspection of fruits and vegetables in receiving markets. It was felt, however, by many shippers that the service would be more valuable if the certification of market quality and condition was also available at shipping point so that the shipper might be in position to correct improper grading practices while the product was still in his possesison rather than make adjustments after it had arrived in the receiving market. Authority to extend the work to shipping points as requested was granted for the year beginning July 1, 1922, and since that time this branch of the service has rapidly expanded until during the fiscal year ending June 30, 1925, 131,087 cars were inspected. This shipping point work has largely been done in cooperation with the various States under agreements which provide for the Federal licensing and supervision of State employees who are engaged in standardization and inspection work.

This inspection service as a whole has improved marketing conditions by preventing unfair practices and obtaining better understandings between shippers and receivers, and has become an effective agency for the promotion of better grading and packing practices. The desire on the part of shippers to obtain an official statement of compliance on their part with contract terms, and an increasing appreciation on the part of the receivers of the advantages in handling only standardized products, have resulted in the more consistent application of old established grades and in the more rapid adoption of newly recommended Federal grades for many products.

The inspection service has not only promoted grading and standardization of fruits and vegetables in the different States but has obtained a uniform application of established standards in different sections of the country which are shipping to the same markets. This has prevented many of the misunderstandings which formerly were the causes of charges of unfairness on the part of both shippers and receivers.

Shipping-point and receiving-point inspections on the same cars have contributed to the knowledge of what happens to highly perishable products during transit. In the past many misunderstandings between shippers and receivers have been due to lack of appreciation of the rapidity of changes in condition in highly perishable products under the vicissitudes of transportation. Dependable information as to the effects of a small quantity of off-condition stock upon the carrying qualities of a lot as a whole have resulted not only in the elimination of the questionable products at shipping point but have had a very beneficial reflex influence upon production practices. Until growers and shippers received authoritative statements through Federal inspection certificates of the serious deterioration from decay during transit, they did not fully realize, from a marketing stand-

point, the serious nature of such diseases as late blight of potatoes, brown rot of peaches, or blue mold rot of citrus and deciduous fruits. The continued reports of losses from these and similar diseases have resulted in a much greater efficiency on the part of shippers and receivers in the application of the preventive methods which have been developed by the Federal and State research men for combating such destructive agencies.

Trade Associations

The necessity of obtaining concerted action in general matters relating to the welfare of the industry has led to the organization of growers and shippers in nonmarketing associations. Such organizations as the California Citrus League and the Florida Growers' and Shippers' League represent the industry in transportation and freight-rate cases, in all legislative matters affecting their interests such as standardization and spraying laws, quarantine measures, and the legal regulation of commission merchants or other dealers in fruits and vegetables.

Local shippers' organizations of a similar character have been formed in the Pacific Northwest. Such associations in Yakima, and Wenatchee, Wash., and Hood River, Oreg., deal principally in traffic matters but also assist their members in the community by acting as a clearing house for reporting crop estimates, stocks in storage, and other such information.

There are also a number of national trade associations which represent various groups of handlers. The International Apple Shippers' Association, the National League of Commission Merchants, the Western Fruit Jobbers' Association, the American Fruit and Vegetable Shippers' Association, the Fruit and Vegetable Brokers' Association and the Melon Distributors' Association fall in this class. These organizations represent their membership in all transportation matters including rate hearings and car service, safeguarding their interests in dealing with legislation affecting the industry, and serve as general bureaus of information.

Marketing by Cooperative Associations

Reports from 1,290 associations handling fruits and vegetables show that these organizations did a business in excess of $300,000,000 in 1924. Approximately 200,000 growers are members of these associations. The average business per member, therefore, is close to $1,500. A limited number handled single commodities, many more marketed several kinds of fruits or vegetables, and others handled both fruits and vegetables.

The development of cooperative marketing in the United States dates back to the period preceding the Civil War. However, all associations organized during that period are now out of business. The oldest, active fruit and vegetable organization now operating dates from 1878, and the second from 1886. Doubtless several were formed during the eighties which have since gone out of existence. The citrus fruit growers of California, for example, attempted to organize cooperatively as early as 1885. The grape growers of western New York organized an association in 1886 which operated for three years and was followed by a larger organization.

All substantial progress in the cooperative marketing of fruits and vegetables, however, dates from the formation of cooperative associations of orange growers in southern California from 1892 to 1894. This was followed by the incorporation of a central marketing agency, the Southern California Fruit Exchange, in 1895.

The citrus growers had the example of producers of other commodities to serve as a guide. Twenty-one cooperative creameries now in business were organized in 1892, 18 in 1893, and 31 in 1894. As early as 1863, a cooperative cheese factory which is still in business was formed in New York State. A few farmers' elevators were appearing through the grain States in the eighties and nineties. The development of cooperative marketing of California citrus fruits has been treated in detail in publications of the department and elsewhere.

Following the organization of the California citrus associations came the California Fruit Exchange in 1900, an organization marketing deciduous fruits, the Florida Citrus Exchange in 1909, and the California Raisin Growers' Association in 1912.

The associations fall into three distinct groups with regard to the form of organization, the territory covered and the marketing service offered.

The earlier associations were all local organizations. They were formed by growers located in one community, usually using a common shipping point. At the present time about 90 per cent of the fruit and vegetable associations are organizations of this type.

There has been no single plan adopted for the formation of the local associations. The individual preferences of the founders and the peculiar problems of the industry or locality have generally prescribed the form of organization.

The majority (75 per cent) are incorporated, a little less than half are organized as capital-stock corporations and over 86 per cent, according to reports received by the department, restrict the ownership of stock or membership privileges to producers of the products handled by the associations.

The local associations perform, as a rule, the services of grading, sizing, and packing the commodity. Sometimes, as in the case of citrus fruits, the crop is harvested by the association. Where the association is an "independent local," namely, is not a member of a federation, provision must also be made for selling the crop. The marketing methods and channels already described are open to organizations of this kind. In general, whether an association sells its output to local buyers, consigns, employs a sales agency, or sets up its own distributing machinery will depend upon the strength and experience of the organization.

Federation of local associations for the purpose of forming a central agency to handle sales, collections, traffic matters, and other phases of marketing, have been formed in a number of instances. The best known fruit and vegetable federation is the California Fruit Growers' Exchange, an organization of approximately 200 local associations. The Florida Citrus Exchange, the Mutual Orange Distributors, the Michigan Potato Exchange and the Western New Work Fruit Growers' Cooperative Packing Association are other examples of federations marketing fruits and vegetables.

In the federation, the affiliated local associations have about the same status as the individual members of a local association have in their organization. Each local association is represented on the board of directors of the federation, or sends one or more representatives to an annual meeting at which the directors of the federation are elected. Through contracts running from the central to each local the services that the central is to perform and the obligations of the local are specified.

The duties and authority of the federation vary widely in different instances. When local associations have been operating independently for some time agree to federate, the powers of the federation may be considerably restricted, and where the formation of the federation is contemporaneous with the organization of the locals the federations may assume some degree of supervision over strictly local functions, such as grading and packing.

In general, the local associations comprising a federation perform the local functions of assembling the produce, grading, sizing if required, packing and loading it for shipment. The central takes charge of the shipment at this point and carries on the process of marketing, through its own employees, or agencies with which it may enter into contracts to perform all, or a part of the service. The routing of shipments, collection of the proceeds of sales, the collection of loss and damage claims, general legal matters, and advertising are other functions usually delegated to the central.

In contrast to the independent local association and the federation of locals, there has developed a form of organization generally known as the "centralized" association. These organizations are called also "commodity" cooperative associations, an unfortunate term in that it fails to suggest either the organization characteristics or operating methods of these associations.

The centralized association in its operation combines the functions of the local associations and the federation, local plants are owned, and local managers employed by the associations. In its organization, it covers a large producing area, such as the prune-growing sections of California. Marketing contracts run between all the growers and the association. Directors are elected by the members, usually on a basis whereby several divisions of the producing area each elect one or more directors as their representatives on the board. In some cases, the growers have assigned their voting rights to a group of trustees or a "voting council."

The contract signed by the members is usually for a definite period, five years being a common term. Usually the contracts are noncancelable during this period. This so-called "iron-clad" contract contrasts with the more informal contracts, or lack of a contract, in most local associations. In the federations, also, provision is generally made for the cancellation of the grower's contract during a certain period of each year.

Examples of centralized associations handling fruits and vegetables are the Sun-maid Raisin Growers, and the Prune and Apricot Growers' Association.

The common characteristics of all cooperative associations is that they are nonprofit organizations, controlled by their member patrons. By nonprofit is meant that they are not operated to make a profit on invested capital, other than a fair interest return. Consequently,

marketing services are performed at cost, cost being interpreted to include interest on capital invested and such reserves and investments as it may be necessary to make to advance the interests of the organization. If the sum retained from the proceeds of sales is greater than is required for these purposes, the surplus is returned to the patrons in accordance with the quantity of produce which each shipped through the association.

Grower control is usually assured by a provision that each member shall have one vote and no more. Furthermore, most fruit and vegetable organizations restrict their membership to bona fide producers. In some cases, a member is allowed one vote for each share of stock which he owns, but in such instances it is customary to make the ownership of stock proportional to the uses which the member makes of the association.

The dual relationship of the members to their association distinguishes cooperative organizations from other types of business organizations. The members are joint owners of the business and are also its patrons. They are interested as patrons in obtaining marketing service at the lowest possible cost; as the owners of the business they are interested in its successful operation. When the patron interest predominates, the association may be crippled as a business organization. There is always present, therefore, the necessity for arriving at a balance between these conflicting interests. The conflict is present even when all members are patrons of the organizations. It becomes more pronounced when a portion of the members, or stockholders, are nonproducers; or when an association transacts business for growers who have no interest, as owners, in the organization.

The pooling of returns received for products of the same grade sold over a specified period is a common practice of the cooperative associations. Methods of pooling and the length of the pooling period, however, vary considerably in different associations and for different periods. Table 2 shows the length of the pooling period of 478 associations handling various commodities.

TABLE 2.—*Duration of pooling period of 478 fruit and vegetable marketing associations*

Associations marketing	1 day	2 to 3 days	1 week	8 to 15 days	1 month	One-fourth of season	One-third of season	One-half of season	Season	Number associations reporting
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	
Apples		2.6						10.2	87.2	39
Citrus fruit		.7	7.3	12.0	22.0	15.3	8.0	4.0	30.7	150
Grapes		35.7		7.1					57.2	14
Strawberries	59.2	7.4	7.4						26.0	27
Peaches			14.3	14.3					71.4	7
Cranberries			20.0						80.0	5
Miscellaneous fruits								25.0	75.0	4
Several fruits	11.2		12.5	2.5			1.3		72.5	80
Potatoes	14.6	12.5	29.2	8.3	10.4		4.2	2.1	18.8	48
Sweet potatoes			8.0		8.0		4.0		80.0	27
Watermelons		83.3		16.7						6
Onions			75.0						25.0	4
Miscellaneous vegetables	18.2		9.1	9.1	9.1				54.5	11
Several vegetables	33.3	4.2	20.8	4.2	4.2				33.3	24
Fruits and vegetables	21.9	6.3	15.6	3.1	18.7				34.4	32

Pooling returns for products simplifies the task of keeping records and obviates the necessity of selling each grower's produce in a separate lot. It also serves as an insurance against loss for the reason that low prices received for any particular lot or shipment are borne by all growers participating in the pool. The relation of standardized grades to pooling will be discussed later.

Cooperative associations have been organized by producers of fruits and vegetables to improve marketing conditions. Often organization has resulted from imagined grievances or from fundamental difficulties that should not be laid at the door of existing agencies. Excessive costs for marketing services, inefficient services and actual abuses at local shipping points, however, have been very frequently the conditions which the growers sought to improve through cooperative marketing. The larger problem of the expeditious and economical distribution and sale of their products has been approached usually after experience in dealing with local matters. The cooperative associations have not been able to accomplish all that has been expected of them. However, they have performed some definite services especially at shipping points, in improving the marketing of fruits and vegetables.

The first of these is the improvement of the quality of the produce and the encouragement of production in accordance with the requirements of the markets. This has been brought about by the better dissemination of marketing information and the better appreciation of the consumers' requirements that come from growers working together in a cooperative association. It is natural that when a grower sells through his own association he will learn something about marketing and, perhaps unconsciously, be guided in his production program by what he has learned.

More directly, however, the adoption of standard grades has influenced production of better varieties, and has given the grower an incentive to devote more attention to the control of insects and fungous diseases and to better methods of fertilization and tillage. The country buyer, in the past, made no close distinction between grades. In fact, fruits and vegetables have been generally bought field or orchard run and in many cases the same price paid to all growers in a neighborhood regardlesss of the market quality they produced.

The cooperative agencies, through their efforts to assist small growers whose individual business is of little importance to private shippers, have built community packing houses and developed departments to furnish instructions regarding proper handling methods. They have thus had an important influence on production. By pooling products according to grade and making returns to their members on the basis of the price received for each grade, they have demonstrated the advantage of producing the kinds and qualities of commodities the market demands. In addition, by putting the part of the output which would normally constitute the most unreliable part of the shipment on the same basis of quality as the best, they have assisted materially in building a reputation for dependability for the district as a whole.

Not only that, but the large cooperative agency, with the responsibility of marketing a substantial part of the whole crop

of a State or district, has been obliged to adopt a sales policy calculated to yield the best results for the entire district. This has necessitated, especially in years of heavy production, the use of every possible outlet, and it is obvious that under some circumstances some markets are more profitable than others, as each grower is entitled to share the benefits of the association's service equally, the only correct policy is to make returns on the basis of an average price. This means that the whole crop must be pooled and pooling can not be successfully practiced except on the basis of market grades. Without doubt the practice of pooling has given a most powerful stimulus to the standardization of American fruits and vegetables.

The large fruit and vegetable marketing agencies have contributed to the better distribution of shipments and the extension of car-lot markets. A large part of the improvements in marketing may be traced back to improvements in packing and grading developed by the cooperatives. A standardized product makes infinitely easier the task of a produce salesman. It enables the wholesaler and the retailers to handle larger quantities at smaller margins and with less waste and dissatisfaction. However, the cooperatives have been responsible also for the aggressive expansion of markets and have brought about, in part, the more orderly distribution of fruit and vegetable shipments.

An example of progress in this direction is the sales machinery of the California Fruit Growers' Exchange which maintains its own salaried agents in approximately 60 markets and reaches practically every city in the United States and Canada that is large enough to purchase citrus fruits in car lots. Before the organization of the exchange, the smaller cities were supplied, irregularly, from the larger markets in less than carload lots. No one of the several competing shippers maintained a marketing service sufficiently far-reaching to serve these smaller markets. Consequently, only the established wholesale centers received supplies direct from California. The sales department of the exchange is in constant touch with all these markets and has sufficient volume at its disposal to supply the quantity, and to a large extent the grade of fruit each market finds most desirable.

Purchasing Supplies Cooperatively

Coincidental with the growth of the cooperative fruit and vegetable marketing associations have developed a number of purchasing organizations which handle orchard and packing supplies. In many instances, the marketing associations function also as collective purchasing organizations. Generally, they have been able to effect appreciable savings. Such organizations are not peculiar to the fruit and vegetable industry, but are at least as strong in this industry as in any other.

In many cases, the members of fruit and vegetable marketing associations cooperate, either through their marketing organizations or through associations established for the purpose, in handling such matters as labor problems, farm credits or the enforcement of quarantine and pest-control regulations. They also cooperate

through these associations with State and Federal agencies in the investigation of problems of general benefit to the industry. Cooperation is influencing in many ways the general thought and practice of fruit and vegetable growers.

Significance of Cooperative Marketing

To understand and appreciate the significance of coperative marketing it must be considered in connection with the functions essential to marketing and products must be assembled, graded, packed, transported, and distributed to wholesalers, retailers, and consumers in many widely separated markets. All these services must be financed. Cooperation can not be expected to alter radically marketing problems or methods of marketing. For the most part a cooperative organization must seek to improve existing methods. The success with which an organization is able to reduce marketing costs and improve marketing services will determine its value to its members. The problem of getting fruits and vegetables from the farms and orchards to the consumers economically, in good condition and at prices which are reasonable to the consumer yet return a fair reward for the labor and capital invested in production, is the same whatever types of marketing agencies are set up.

A cooperative association, therefore, is on the same basis as privately owned organizations in undertaking to market fruits and vegetables. Its service to its members depends upon its ability to perform the marketing functions better and more economically than they have been performed in the past. In addition to the performance of services which justify its immediate existence, a cooperative association, because it represents the producer, is under obligation to develop better methods of marketing and adopt those which prove to be practicable.

The development of by-products, canning plants, and fruit-juice factories are examples of the efforts of cooperative agencies to improve their markets. Direct sales to chain stores may also be mentioned, as well as various efforts to induce retailers to adopt better methods of displaying fruits and vegetables and increase the demand. Cooperative associations are vitally interested in such things as terminal-market facilities, transportation service, the margins and costs of retailers, because all of these factors affect the profit of the man who grows the crop. A large part of the possibilities of cooperative marketing lies in the success with which the growers' organizations may be able to assist in solving the distribution problems which arise after their shipments reach the city markets.

One of the limitations of cooperative marketing, however, is the lack of control which the organizations have over the services incident to retail distribution. All the cooperative agencies or any other shipper can do is to deliver a standardized product to the wholesaler and to regulate distribution so that no market will receive more than will be consumed under normal conditions.

The associations can not create a market where none exists, they can not get high prices for poorly graded products or those of inferior quality, nor can they avoid low prices which follow overproduction.

Failure to regulate production in accordance with market demands has been an outstanding limitation of the fruit and vegetable association. Since 1920 shipments of fruits have increased over 30 per cent and vegetable shipments 33 per cent. At the same time the population of the United States has increased not more than 8 to 10 per cent. Prices in general have reflected this condition and have failed to equalize the increased costs of producing the crop.

It seldom has been realized that stabilization of distribution must include stabilization of production. In so far as the supply of fruits and vegetables can be adjusted to conform to the normal demands of the market, both the producers and consumers will benefit.

Up to the present time, the efforts of the fruit and vegetable-marketing organizations have been devoted mainly to preparing for market and selling the products of their members. Many cooperative associations have introduced definite savings and have brought about improvements in the grade and pack of fruit and vegetable products.

The question of the stabilization of production has not been met except incidentally. The Fruit Growers Supply Co., the purchasing organization of the cooperative associations affiliated with the California Fruit Growers Exchange, has maintained a bud-supply department. By furnishing the growers with buds from citrus trees of known productivity and which bear fruit of good quality, it has been instrumental in improving the marketing qualities of California oranges and lemons. Some associations are concerned with questions of fertilization, cultivation, and pruning with the avowed purpose of establishing approved methods and raising the quality of the fruit or vegetable placed on the market.

This, however, is but one phase of the problem. Partly because of the successful merchandising and advertising program of the California Fruit Growers Exchange, as one example, the production of citrus fruits in California has increased enormously. Marketing the crop at a profit to growers has become progressively difficult. Comparable increases are apparent in almost every friut and vegetable crop. (See figs. 299 and 300.)

If production is outstripping market requirements, the necessary adjustments will be made in time even without conscious planning on the part of the organized growers. Such adjustments have been attended in the past by financial distress to a large number of producers which has extended over several years. If the growers, through their cooperative associations, are able to modify the conditions that make necessary the abandonment of orchards and truck fields and the neglect of those which are kept in tillage, they will perform a service at least equal in value to the improvements they may be able to make in the distribution of the crops once they are produced.

Stabilization of production in the fruit and vegetable industries is confessedly difficult. It is difficult to correlate the production plans of a large number of growers. Weather conditions affecting yields may upset the most carefully made calculations. Nothing can be accomplished unless the growers cooperate for the purpose of marketing their products. Then, having demonstrated their ability to work together and to conduct a marketing business, they may

hope to bring about a degree of correlation between production and demand that does not exist at the present time.

The information the association requires for such a program is being collected in part by the Department of Agriculture and other agencies. As the need for supplemental information becomes apparent, it can be collected, in most instances, by these same agencies.

The basic information necessary are acreages and yields of the crops handled by each association and of competing crops not only in the United States, but from countries selling in the same markets. A knowledge of prices over long periods is necessary. Not only is it necessary to have historical information regarding yields and prices, but it is necessary to use these and further data as a basis to forecast future trends. The crop forecasts of the Department of Agriculture give in advance estimates of the current crop. Acreages of nonbearing fruits show the trend in the production of these crops. Agricultural outlook and "intentions to plant" reports put out by the department in the spring of each year are also available.

General economic conditions are important as an index of the probable purchasing power of the consumer. All this statistical information must be interpreted and made available to the growers by the cooperative association. Such a program on the part of even a few of the cooperative associations marketing fruits and vegetables would do much to make clear to producers the close relationship which must exist between production and marketing.

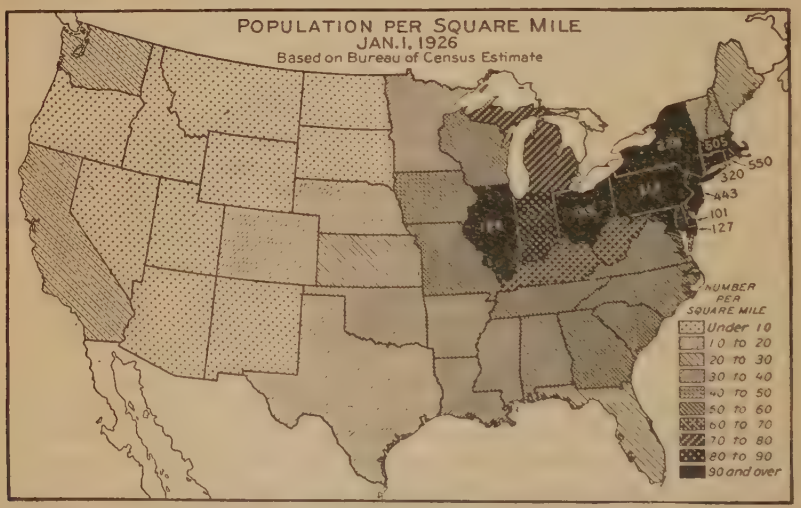


FIG. 325.—The population of the United States is densest around the individual centers, which are also the areas of greatest consumption of fruits and vegetables

Transportation and Storage of Fruits and Vegetables

Transportation and storage facilities are factors of prime importance in the location of areas for fruit and vegetable production in relation to the large consuming centers. The thickly populated industrial regions now consume a great deal more of such foodstuffs than are produced in the closely adjacent territory (fig. 325). Prior to the advent of the steam railroad, fruit and vegetable growing was

merely incidental to general farming, and commercial production of these crops was limited to sections adjacent to the larger towns and seaports. As the railways spread through the country new areas adapted to fruit and vegetable growing became accessible and the improved transportation facilities assuring an outlet to market encouraged new plantings. These new production areas stimulated the development of better transportation facilities and these in turn tended to increase the distance from market in which perishable commodities could be grown successfully on a commercial scale. At the present time, fruits and vegetables are frequently produced in regions far distant from the industrial centers which are the chief markets. Examples of this are the muskmelon and head-lettuce industries of the far West, the citrus industries of Florida and California, and the apple industry of the Pacific Northwest. Such highly perishable commodities are grown at a distance of from 1,000 to 3,000 miles from their principal markets. Industries of this character can exist under these conditions only through the employment of the highly specialized methods of refrigerated transportation which have been developed.

Storage

Although the development of transportation facilities has made possible the production of fruits and vegetables in those geographical regions of the country where they can be grown most readily, the working out of proper methods of storage and the inherent storage quality of the product are probably of foremost importance in determining the extent to which these crops shall be grown. For example, apples or potatoes can be held throughout the year, and the total quantity consumed is much larger than it would be were they not capable of relatively long storage. Strawberry holding in the fresh state is very limited, and the total strawberry production is far less than it would be if it were possible to store them in the fresh state and thus extend the fresh strawberry season.

Storage of fruits or vegetables is the keeping of these products after they are harvested and before marketing, or before they go into consumption. The purpose of storage is to conserve commodities so that they may be used later as foodstuffs or in the industries. Some fruits and vegetables are seasonal in production or at least can be produced most cheaply for given markets at certain seasons in the year. Where the commodities are of such character as will retain their food value and attractiveness in storage, they can be kept in this way. The season for the consumption of the crop can thus be lengthened. The consumer is thereby insured a supply of a given commodity for a longer period, and the producer obtains a market for a longer time and a greater total quantity of produce. There is also less liability of an over supply on the market at any time as the surplus can be placed in storage and held for a later, more favorable market.

With crops such as oranges which are in supply on the market direct from the groves at all seasons of the year, storage is not an important factor in the marketing under normal conditions. With products such as apples storage is essential if the producer is to

escape the ruinous gluts of the market which would occur without storage facilities to assist in the orderly distribution of the crop. The consumer, on the other hand, would be unable to procure apples through a considerable portion of the year. The purposes of storage then are to lengthen the time in which a crop may be marketed and consumed and to prevent a condition of oversupply at one time and undersupply at another, thus assisting in the orderly marketing of the produce. By this method of conserving produce the consumer is assured a more uniform supply and a more varied diet.

Place of Storage

Fruits and vegetables may be stored on the farms where they are produced, at the shipping point, at the large terminal markets, or at some point between the shipping point and the terminal market, the last mentioned being termed storage in transit. All these places of storage are frequently used for the same commodities. In general, it may be said that most of the storage of highly perishable products such as berries, peaches, plums, and summer fruits, also lettuce and celery, is at the terminal markets. These products are so perishable that if they are to be stored at all, it is essential that they be stored near the point of consumption so that they will not have to undergo shipment and extended handling following their removal from storage.

Less perishable commodities, such as apples, winter pears, cabbage, onions, and potatoes, may be, and most of them are, stored in large quantities both at the point of production, in transit, and in the terminal markets. Storage at the point of production for these commodities has the advantage of being immediately accessible during the harvesting of the product. If storage is to be at the terminal markets, the product must undergo considerable handling and delay between the time of harvest and final storage in the terminal markets. With such commodities as apples, which are by far the most important storage fruit, a delay between the time of harvest and the time of placing in storage will result in very serious deterioration of the fruit. Consequently, good storage facilities at or near the point of production will usually insure a firmer apple and more satisfactory storage product. During the harvest season for apples relatively high temperatures prevail which ripen the fruit very rapidly. After one to two months or longer in storage at the shipping point, however, the fruit can be handled and transported under very much cooler climatic conditions. For these reasons, satisfactory shipping-point storage for such products as apples will generally give the most satisfactory results.

The advantages of storage in transit or terminal storage for such commodities as apples are also apparent. The products are near the point of consumption so that advantage can readily be taken of fluctuations in the markets. Also in certain districts of the United States midwinter temperatures are such that the transportation of commodities subject to freezing injury is rather difficult at that season of the year. Consequently, there is an advantage in having a midwinter supply of these commodities at or near the consuming centers before severe winter weather occurs.

Fruits and vegetables which will stand exposures to moderately high temperatures without injury are stored almost entirely at or near the point of production without refrigeration. Such commodities include potatoes, sweet potatoes, and cranberries. Potatoes, which occupy considerably more storage space in a normal year than all the other vegetables combined, are not injured by moderate natural fall temperatures and during the winter and early spring will keep in prime condition for table stock at a temperature of 38° to 40°. Sweet potatoes are second only to potatoes in quantities stored and are practically always stored in the producing region. Cranberries, likewise, can be held very successfully in nonrefrigerated storage in the regions in which they are produced.

Storage in transit is a term applied to the storage of a commodity which has been shipped part way to some terminal market and there placed in storage. As applied to apples of the Pacific Northwest, a car of this fruit might be shipped to some point such as Tulsa, Okla., held in storage there for several months and then reshipped to some point south or east such as New Orleans, or Jacksonville, at a through rate from the point of origin to the final destination, plus a small additional charge per box for the privilege of unloading, reloading, and shipping. Storage in transit has the advantage that it makes possible a much wider distribution of the commodity than does storage in a terminal market which is so located geographically that the commodity can not be moved to another market without retracing a part of its journey. Storage in transit is the principle of diversion in carload shipment carried a step further in that it allows the produce to be unloaded from the cars and held for a time before resuming its journey to its final market. It has the same advantage over shipping-point storage that terminal storage has, namely, of being relatively very much nearer the consuming centers. Thus reshipment can be made at any time, since it is usually for short distances, and advantage can be taken of market fluctuations.

Types of Storage Warehouses

There are two types of storages for fruits and vegetables—the air-cooled storage which depends for its cooling on the natural temperature of the air outside the storage plant, and the cold storage which is cooled either by mechanical means or by ice which has been harvested in the winter and stored for this purpose. There are, of course, a number of modifications in design of these types of storages, and in some cases, there are even combinations of the two types in that an air-cooled storage may utilize ice or machinery for cooling down produce or for maintaining temperatures during warm weather.

In general, the principal vegetable crops are stored in air-cooled storage. Potatoes for table stock are stored almost altogether in this type of storage, which may be constructed underground, partially underground, or wholly above ground. In a plan for an underground storage which has been built and operated successfully ventilation is provided by ports or conduits down to the floor and ventilators in the ceiling. The potatoes are stored in bins along the sides while a driveway through the center of the structure provides

a convenient method for loading and unloading the bins, also space for sorting and handling the potatoes in preparing them for market. The exterior of a potato storage of a type very common in the Maine potato region is shown in Figure 326.

Pits, consisting of stacks of potatoes covered over with straw and earth, to protect them from extremes of heat or cold, are also used rather extensively for holding potatoes through the winter.

Protection from freezing is, in many cases, as important as is the rapid cooling down of the produce. Ventilation of the house so as to regulate the humidity is of great importance to vegetable crops. Much of the loss of potatoes in storage is due to rots caused by

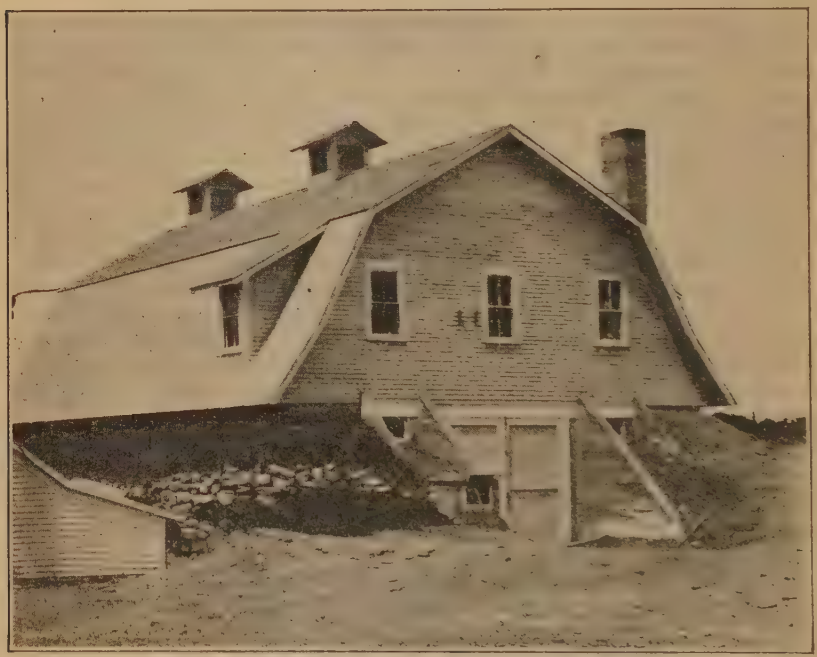


FIG. 326.—Exterior of a potato-storage house in common use in the potato region of Maine. The opening by the doorway is the air intake for a conduit which distributes cool air to all parts of the basement

various fungi which are usually favored by conditions of high humidity.

Cabbage and onions are usually stored in common or air-cooled warehouses in the producing region, though in some cases the last-mentioned crop is held in cold storage. This is particularly true where the air temperatures of the growing region are too high to provide the necessary cooling. Onions store best and longest at temperatures of about 32° F., and it is sometimes difficult to obtain such a temperature with an air-cooled storage.

Sweet potatoes which require a temperature of about 55° F. for best results are stored in large quantities in New Jersey, Delaware, Maryland, and the Southern States. Specially designed houses are used (fig. 327), provided with air ports at the base and ventilators in

the roof, together with a heating system to furnish the proper conditions for the curing of this crop.

FIG. 327.—Sweet-potato storage house

Air-cooled storages are used for certain kinds of fruit in many localities, and, given the proper climatic conditions, together with houses properly constructed and ventilated, good results may be ob-

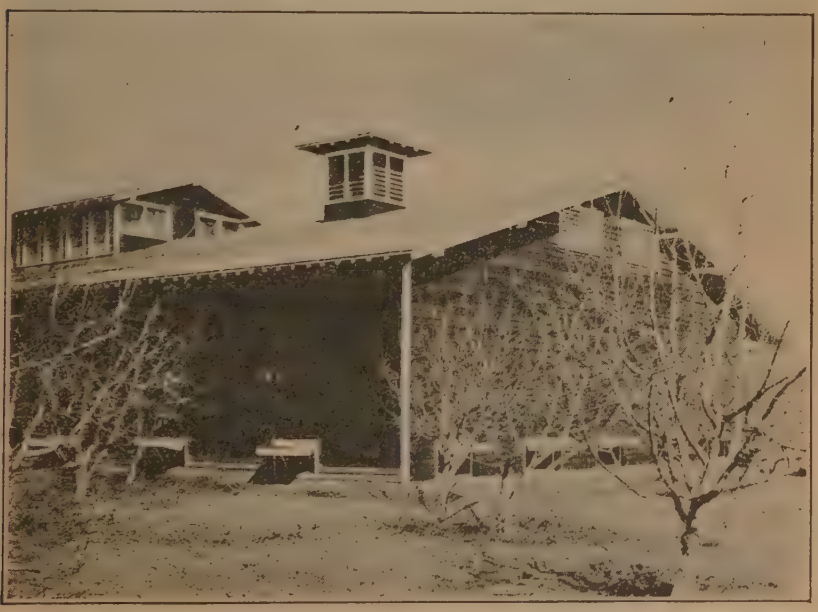


FIG. 328.—Common or air-cooled storage for apples

tained from this method of storage. A type of storage recommended for apples is shown in Figure 328. This storage consists of an insu-

lated building provided with large ventilators at the top and inlet ports so arranged that air is admitted at the bottom under the fruit which is stacked in boxes, barrels, or crates on a slatted floor. In manipulating the ventilating devices to cool the house, the inlet ports and ventilators are opened when the air outside is cooler than the fruit or the air within the house, and a current of air passes through. The ventilators and air ports are closed when the air within the house is cooler than the outside air. This type of house is fairly well adapted to the storage of apples at certain seasons of the year in the producing regions of the northern sections of the country in which the climate is such that the temperatures at harvesting time are, as a rule, relatively cool. The success of air-cooled

FIG. 329.—Interior of an air-cooled lemon storage house in California

storage for apples depends upon the temperatures which prevail in the region at and following harvest, and upon the varieties produced. Air-cooled storage for apples is usually employed for short storage periods until it is possible to move the crop to market or until the price is favorable. In certain regions, however, it is well adapted to the holding of some varieties until spring.

A somewhat similar air-cooled storage is used for lemons in California (fig. 329). This fruit stores best at a temperature of about 55° F. Climatic conditions in most of the lemon-growing regions are such that this temperature can be maintained most of the time by the proper manipulation of the air ports and ventilators. The best types of lemon storage are cellars or basements either wholly or partially underground. By building in this way, a more even temperature is maintained than is possible with buildings wholly

above ground unless the latter are heavily insulated. As the moisture content of the air is low and the lemons require a humidity of from 85 to 97 per cent in order to obviate excessive shrinkage, water is sprinkled on the floor or evaporated from suitable humidifiers. This also assists in cooling the air. Lemons are kept in these houses for as many as 120 days, and the best grade of lemons are those which are picked green and ripened in these cellar storages. The total storage capacity for lemons in southern California is from 5,000 to 6,000 cars consisting of 406 boxes of 86 pounds each to the car.

In the cranberry-producing sections of the country, this fruit is stored almost exclusively in heavily insulated, air-cooled storage houses and fairly satisfactory results are obtained.

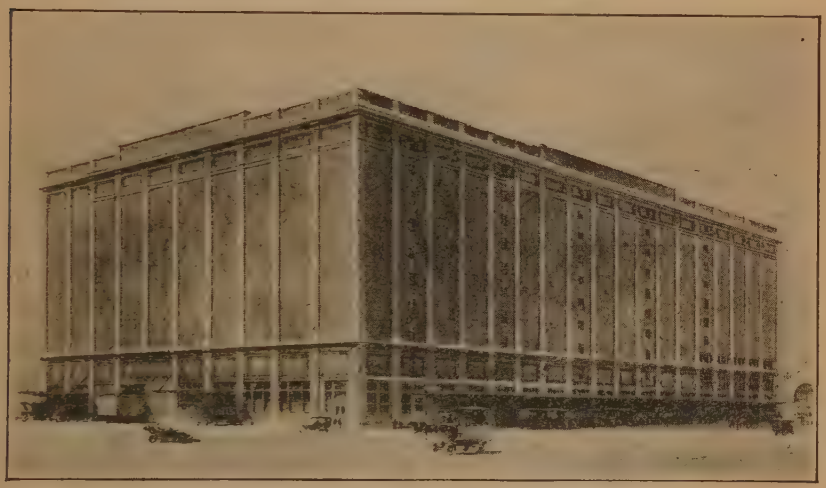


FIG. 330.—A modern cold-storage warehouse

Cold Storage

Cold storage as a means of retarding the deterioration of food products is the result of gradual evolution and had its beginning in the use of natural ice in caves and cellars. Various kinds of ice-cooled chambers were built, and insulation materials developed to decrease the ice meltage and maintain lower temperatures. One of the earliest of the successful cold-storage plants used for fruit storage is mentioned by Taylor[2] as being operated in Cleveland in 1865. Apples were stored in this plant with success. The first cold-storage plants in the large terminal markets of New York and Chicago were cooled by ice or mixtures of ice and salt. This method of cooling was displaced by the mechanically operated refrigeration machine as soon as its reliability and economy had been demonstrated. At the present time some type of mechanical refrigeration is used in all the large cold-storage plants. A typical modern cold-storage plant is shown in Figure 330.

The application of mechanical refrigeration for the preservation of fruits began about 1880. Since that time there has been a very

[2] TAYLOR, W. A. INFLUENCE OF REFRIGERATION ON THE FRUIT INDUSTRY, Dept. Agr. yearbook, 1900, pp. 561–580.

rapid increase in the facilities for the cold storage of fruits and vegetables. Since 1900, as shown in Figure 331, the amount of space available for the storage of produce has increased more than 500 per cent. This does not include meat-packinghouse refrigeration, meat markets, and such establishments, but refers to cold-storage warehouses for public storage of food products including fruits and vegetables, meats, dressed poultry, eggs, and dairy products.

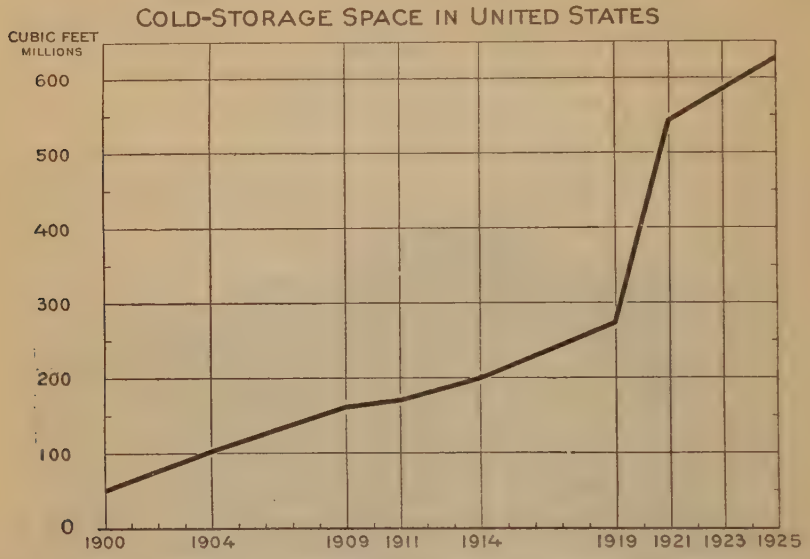


FIG. 331.—The increase of cold-storage space during the period from 1900 to 1925 expressed in terms of millions of cubic feet

Storage Holdings of Fruits and Vegetables

Most of the cold-storage space occupied by fruits and vegetables is used for apples, and the cold-storage holdings of this fruit in December of each year for a number of years are shown in Figure 332. It is noticeable that they increased markedly in the 20 years from 1900 to 1920, the increase being relatively as great as the increase in cold-storage space during that time. The average total production of apples increased very little during this period but the quantity of apples placed in cold storage increased nearly 500 per cent. Only about 2 per cent of the total apple crop produced was placed in cold storage in 1900, whereas something over 9 per cent of the total 1920 crop was in cold storage in December of that year.

The percentage of the commercial apple crop or that portion of the total crop actually marketed, which is in cold storage in December is much higher. The data in Table 3 shows that from 1919 to 1925 from 20 to almost 30 per cent of the commercial crop was in cold storage on December 1. In 1900, nearly 25 per cent of all the cold-storage space, exclusive of that used by meat packinghouses, breweries, creameries, and other enterprises, was occupied with the storage of apples. This is, of course, a very large propor-

tion of storage space, but it must be remembered that apples are the most important of the fruit crops and that many varieties can be kept for a long period. The marketing of the crop is thus spread over a much longer time than would otherwise be possible.

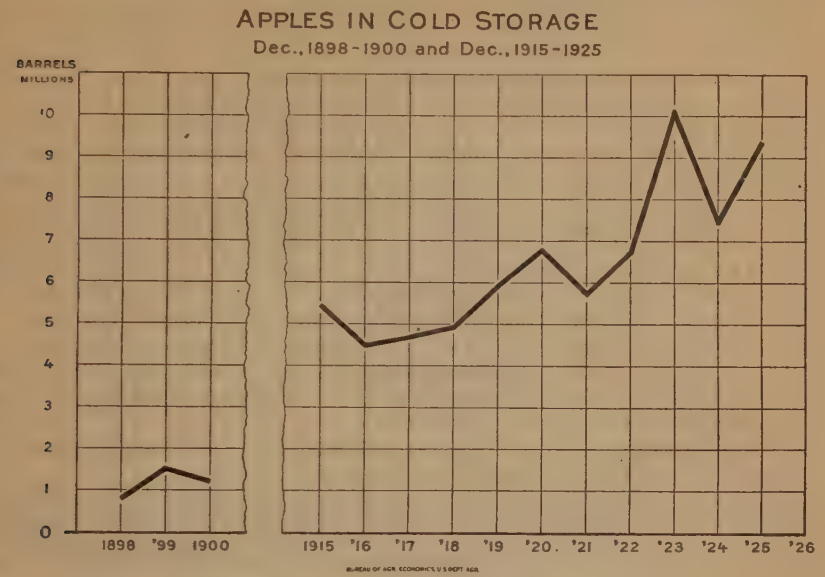


FIG. 332.—The number of barrels of apples in cold storage in December, 1898, 1899, and 1900, and from 1915 to 1925, inclusive

TABLE 3.—*Commercial apple crop, cold-storage holdings, December 1, and percentage of latter to former, 1919–1925*

Years	Commercial apple crop	Cold storage holdings Dec. 1	Commercial crop in cold storage Dec. 1
	Barrels	*Barrels*	*Per cent*
1919	26, 159, 000	5, 923, 000	22. 6
1920	33, 905, 000	6, 787, 000	20. 0
1921	21, 557, 000	5, 739, 000	26. 6
1922	31, 945, 000	6, 743, 000	21. 1
1923	35, 936, 000	10, 099, 000	28. 1
1924	28, 063, 000	7, 473, 000	26. 6
1925	31, 909, 000	9, 398, 000	29. 4

There are relatively large holdings of pears in cold storage, certain varieties keeping in good condition until well into the spring. Grapes also, particularly certain varieties from California, are held in large quantities until after New Years. Peaches, plums, cherries, and berries are stored only for short periods. Nuts store well and the demand for cold-storage space for this commodity is on the increase.

Such fruits as berries and cherries are frequently stored in freezing storage and kept frozen until required for use in pies, jams, and marmalades. Large quantities of berries and sour cherries are placed in barrels, with or without sugar, and held in a hard

frozen condition at temperatures of 15° to 20° F. until needed. This fruit is utilized primarily in the preserving trade. The handling of fruit by this method is increasing rapidly, the total pack at the present time (seasons of 1924 and 1925) totaling more than 50,000 barrels of 50 gallons each.

The cold-storage holdings of vegetable crops are relatively small as compared to the fruit holdings. Rather large quantities of celery are put in storage in the Northern States each fall, and held until midwinter. Southern-grown celery is also held in cold storage for short periods. Onions are held in cold storage in relatively large quantities, particularly in the warmer sections of the country where winter temperatures do not average near freezing. Seed potatoes, for very late planting, are handled largely through cold storage. Table stock during years of high prices is handled in cold storage in the warmer sections of the country, including such cities as San Francisco and Los Angeles. Carrots, beets, and other vegetables are handled in cold storage to a very limited extent.

It is difficult to obtain accurate information as to the exact quantity of apples in air-cooled storage or in farm cellars that will later appear in the market. This quantity is large, however, and has an appreciable effect on the market.

It is also difficult to get an accurate estimate of the total quantity of vegetables such as sweet potatoes or potatoes held in storage in the producing regions. Practically all of the winter supply of these commodities, representing a large proportion of the total produced, is held for periods of a few weeks to many months in some type of farm or shipping-point storage.

Physiological Factors Affecting the Storage of Fruits and Vegetables

The theory of storage of fresh or living fruits and vegetables is to furnish the conditions necessary for the slowing down of the life processes of these organisms without stopping them altogether and still keep the products attractive and desirable as articles of food. The principle upon which cold storage is based is that within limits the life processes of fruits and vegetables go on more rapidly at high than at low temperatures. All fruits and vegetables, however, do not react in the same way to these temperature changes, and temperatures around 32° F. which will keep apples in fine condition for months are wholly unsuited for the storage of sweet potatoes, potatoes, or lemons.

Sweet potatoes, after a preliminary curing period at temperatures varying from 80° to 90° F., store best at 55°, and if properly cured and the storage is kept at the proper humidity, can be held for a long period. Apples at this temperature soon break down. Then again, potatoes stored at 32° will keep for a year or two. They, however, develop a sweet taste owing to the accumulation of cane sugar. This is considered undesirable for table stock. Stored at temperatures above 38°, this accumulation of cane sugar does not take place, and the potatoes may be stored throughout the winter and well into the spring without considerable loss.

Since no two kinds of fruit or vegetables behave in exactly the same way under identical storage conditions, it is necessary to work out the proper temperature and moisture conditions for each

commodity, and problems along these lines have claimed the attention of the practical cold-storage man and investigators since the storage of these products became such an important factor in our mode of living. Although much work has been done on these problems, changing conditions are continually presenting new problems and new phases of old problems for solution.

Transportation

The influence of rail transportation on the development of the fruit and vegetable industry has already been given some attention. It is sufficient to note here that the development of rapid and efficient rail transportation, such as exists in this country to-day, has made possible the location of the various fruit and vegetable-producing areas in regions whose climate and soil conditions are favorable to the best development of these crops, with, in many cases, little regard to whether or not they were close to a large market.

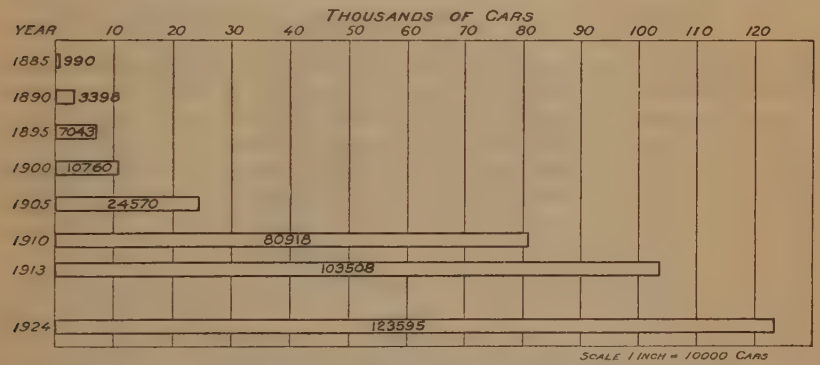


FIG. 333.—Increase in the number of refrigerator cars in the United States from 1885 to 1924. Of the total for 1924 4,274 cars were not equipped with ice tanks. Figures for 1885–1905 are not official; 1910–1924 are official Interstate Commerce Commission figures

Refrigerator-Car Service

The refrigerator car, which has been developed in the last 50 years, has had more influence in commercial-fruit and vegetable growing than any other single factor. The first more or less successful attempts to refrigerate fruits in transit in railway cars were made in the late sixties, from which there has developed a refrigerator-car service now extending over all the railways of the United States.

In 1902, the estimated number of refrigerator cars in service for all purposes was placed at 72,744, and in 1921 it was estimated that there were 118,738, of which 56,124 were privately owned. The increase in the total number of refrigerator cars in 19 years, therefore, amounts to 63 per cent. The Interstate Commerce Commission estimated the number of refrigerator cars in service April 30, 1924, to be 123,595, exclusive of the private cars belonging to the meat packers. (Fig. 333.) The total carloads of fruits and vegetables shipped primarily, although not entirely, in refrigerator cars increased from 659,611 during the calendar year 1920 to 914,542 during 1924.

Fast-Freight Service

It is interesting to note that the schedule for refrigerated shipments from California points to Chicago is 154 hours. This compares with 68 hours for the fast through passenger trains from Los Angeles to Chicago.

Before the general adaptation of the refrigerator car, fast-freight shipments were employed for the movement of fruits and vegetables. Solid trains of fruit were moved on schedules approximating those of passenger trains. This, of course, was a costly method of transportation, but it was successfully used in the delivery of highly perishable products to distant markets. With refrigerator-car service, this rapid movement of perishables is not so necessary, though highly perishable freight schedules are always faster than are those for nonperishable or dead freight. Thus, for the movement of potatoes and other perishable commodities in ordinary box cars, a considerably faster schedule is maintained than for ordinary freight.

Express Service, Including Express Refrigeration

In many fruit and vegetable districts within a radius of 200 to 300 miles of large cities, fruits and vegetables in less than carload lots are frequently handled by express. Often highly perishable fruits and vegetables are shipped great distances by express. Although the express rates on such shipments are, of course, higher than freight rates would be, the type of service and the rapidity of movement sometimes warrants the increased cost with certain extremely perishable products, such as strawberries, asparagus, etc., when shipping to out-of-season markets. For moving such produce in car lots over long distances, special types of refrigerator cars are often used, so constructed that they can be attached to passenger trains. Shipments in this type of equipment are given preferred movement, but the cost of transportation is proportionately greater, and can only be borne by highly perishable commodities having a high sales value.

For less than car-lot shipments by express, insulated chests or boxes fitted with ice pans (fig. 334) are employed to a considerable extent for strawberries from the Southeast, and to a limited extent for raspberries from the Pacific Northwest, and for these commodities from certain sections of California. These chests, known as pony refrigerators, vary greatly in construction and arrangement, most of them being simply insulated wooden shipping boxes with two compartments, one for ice and the other for fruit. They vary in size from a box approximately 2 feet to one a little over 3 feet square. Maximum size is limited by the handling facilities of express companies and others, as well as by the quantity demands for the fruit the box contains.

The California boxes are more lightly constructed than most others, and are arranged for reicing in transit. This necessitates separate openings into the ice and fruit compartments. The Florida boxes are, in most cases, shipped with only an original icing. Generally, from one-third to one-fifth the amount of space is reserved for ice, depending upon the efficiency of the walls in retaining refrigeration, and whether or not reicing is possible or desirable while

in transit. The ice compartment is either built in a space located most conveniently in the upper part of the box or is a drawer similarly situated that may be withdrawn for icing in transit.

As the Florida box is not reiced in transit, the fruit chamber and ice compartment are separated only by the galvanized-iron pan that fills the upper part of the box and a smaller pan that divides the box through the center. In a 64-quart size pony refrigerator the top pan holds about 110 pounds, and the lower, or middle, pan about 40 pounds of ice.

The pony refrigerators are returned to the shippers and used over and over again. This method of refrigeration has a place in the shipment of perishables where it is desired to distribute a high-priced commodity, such as winter strawberries over a large area, and where few except the large terminal markets could handle carload shipments.

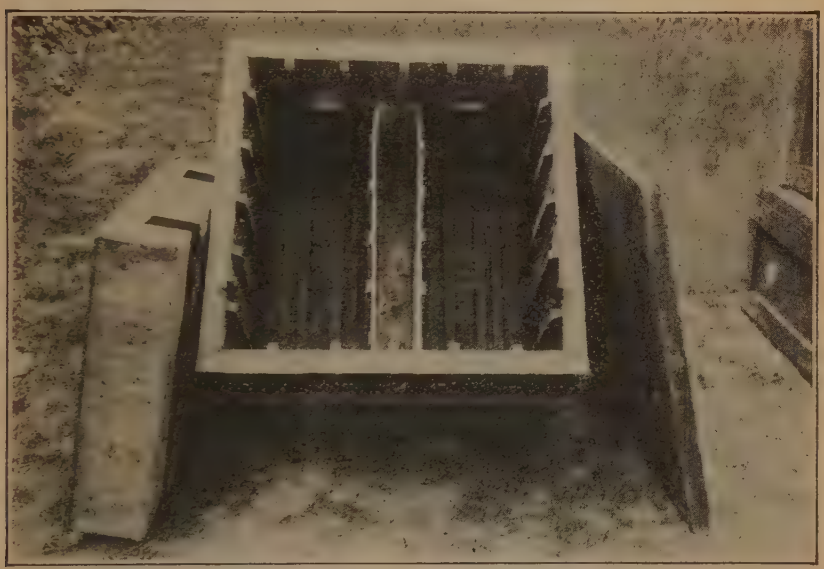


FIG. 334.—Pony refrigerator used for the shipment of strawberries and other very perishable fruits. Central portion is filled with ice; also pan shown at side of refrigerator is placed on top of fruit and filled with ice

Shipments Under Ventilation

Commodities not requiring the low temperatures obtainable under refrigeration are shipped under ventilation. In addition, there are commodities commonly shipped under refrigeration that may be shipped under ventilation during certain seasons of the year. This method of shipment is analagous to the air-cooled storage already discussed and its success is dependent upon the termperature of the air outside being sufficiently cool to hold the produce at the temperature required for successful carriage. It is used with citrus shipments originating in a warm region and traveling within a day or so into much cooler zones. Apples, cabbage, or onions may be transported in this way during the late fall and winter seasons. Most of the potato and all of the sweet-potato shipments move without refriger-

ation. This method of shipment is not used to any extent for highly perishable products such as strawberries, cherries, raspberries, lettuce, broccoli, or commodities requiring quick cooling, the value of which warrants the expense involved in refrigerating the cars.

The equipment used in ventilated transportation is usually the ordinary refrigerator car. These cars are provided with two hatchways at either end (fig. 335) giving access to the bunkers, through which the ice is passed in filling the ice compartments. These hatchways are snugly fitted with heavy insulator plugs, which, when in place, exclude the outside air. For further protection a hinged cover, known as the hatch cover, is provided which completely covers the hatchway and is generally so fitted to the hatch frame that it

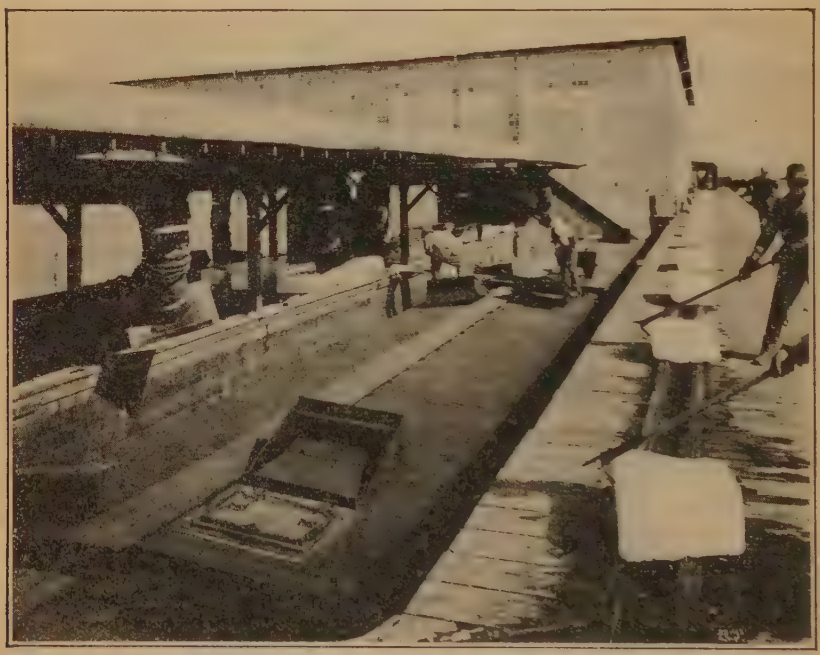


FIG. 335.—Top of refrigerator car, showing hatchways used for the ventilation of the car and for the admission of ice to the ice bunkers located in ends of car

extends several inches above the level of the roof and is just below the level of the running board attached to the roof of the car. When such cars are used for ventilated service, the bunkers are not iced, the plugs are removed, and the hatch covers thrown back or held in a raised position by a simple device attached to the cover. The outside air then has free access to the car and circulates in and from the bunker, through the bunker openings, over and through the load. This air circulation is accelerated and is more efficient when the car is in motion. The hatch covers are usually hinged on the side toward the end of the car. In this case with the car in motion, the air enters by way of the rear hatches, circulates through the load, and issues from the car through the forward hatches. The refrigerator car handled in this type of service provides excellent opportunity for air circulation and a consequent benefit to the load.

Some railroads serving territory from which a considerable tonnage of produce is shipped under ventilation provide special equipment for this service. These cars are usually lightly insulated and constructed with openings in the ends which can be opened or closed by adjusting the angle of a louvre grating which fills the ventilator opening, or in some cases, by the opening or closing of a sliding door. In addition to the solid sliding side doors, there is provided an additional side door of the same size, but built either of louvre grating or of close-mesh heavy wire screen. This type of construction allows the car to be used either as an ordinary box car when its end ventilators are closed, or as a ventilator car when the end vents are open and the screen or louvre side doors are placed in position. There is no provision for refrigeration in this type of equipment.

Box cars are frequently used for ventilated shipments of commodities such as potatoes. Ordinarily the only provision for ventilating these cars is an opening at the side door, midway in the car. Ventilation of the lading depends upon circulation within the car of the air admitted through this open or partly open door. The custom is to slide the doors open as far as possible, fasten them, and then lattice or fasten narrow boards across the doorway space. This method does not provide for as thorough ventilation as can be obtained in the regular ventilator car or in the refrigerator car used as a ventilator.

Service and Practice

As has been mentioned, shipments of commodities may move under ventilation when the temperature of the outside air is low enough to cool the commodity and keep it in good condition until it reaches the market destination. Most refrigerator cars used in fruit and and vegetable service can be used as ventilator cars, and this service is available in practically all the important fruit and vegetable-shipping regions of the United States.

The rules for shipping under ventilation provide that the carrier allow the vents to remain open as long as the air outside the car is above a certain temperature, which, under standard practice (known as standard ventilation), at the present time is 32° F. When the outside air temperature drops to 32° the vents are to be closed, and are reopened when the temperature again rises above 32°. These precautions are taken to provide as thorough cooling of the lading as possible without danger of freezing. With commodies moving from a warm region to a colder ane, as is the case in most ventilated shipments, this is very important. The term "vents" is applied to any opening in the cars used for the purpose of ventilation.

Shipments Under Refrigeration

By far the greater part of the fruit crop and much of the vegetable crop of the country moves by rail on a journey of such duration and at such seasons of the year that control of transit conditions, especially the temperature inside the cars, is a necessity in order to prevent undue ripening and deterioration. This control is made

possible by means of the refrigerator car, the insulated walls of which provide protection to the lading against extremes of external heat and cold and make it possible to effectively refrigerate the load by the use of ice. Adequate insulation is recognized as an essential feature of refrigerator-car construction. Investigations to determine the degree of protection necessary have been under way for some time, and the results are summarized in standard refrigerator-car specifications issued by the United States Railroad Administration, which call for a minimum of 2 inches of high-grade insulation in side and end walls, and floors of refrigerator cars, and 2½ inches in the ceilings.

In addition to adequate insulation, other features of refrigerator-car construction now regarded as essential for effective and reasonably uniform refrigeration are illustrated in Figure 336. Floor racks raising the load 4 inches or more above the floor, enlarged air openings in ice-bunker bulkheads, low splashboards at edge of drip pans, and basket-type ice bunkers which hold the ice away from the walls leaving space for air flow on all sides, together with insulated solid bulkheads, provide for the circulation and uniform distribu-

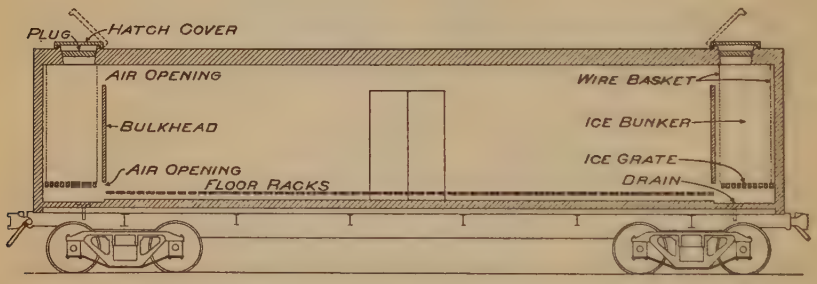


FIG. 336.—Plan of refrigerator car showing floor racks, ice bunkers, and other features

tion of the largest possible volume of air, which is the means by which the refrigeration supplied by the ice is carried through the lading.

In practice the bunkers, which in a standard refrigerator car are designed to hold each 5,000 pounds of ice, are usually filled to capacity before loading the produce into the car. This preicing, as it is called, takes place from 8 to 12 hours before the car is loaded, in order to have the car as cool as possible when loaded. In loading the produce, it is considered good practice to leave air space between the packages, to provide for good circulation of the cooled air through the packages. It is necessary with most types of packages to brace the load thoroughly to keep it from shifting while it is in transit.

If the car is to be shipped under what is known as standard refrigeration, it is hauled to the icing platform (fig. 335) soon after loading and reiced; that is, the bunkers are refilled to capacity. Standard refrigeration also requires that the ice bunkers of the cars be refilled to capacity at each icing station en route to market destination. All highly perishable commodities such as muskmelons, peaches, broccoli, berries, plums, summer pears, and similar commodities, are practically always shipped under standard refrigeration or under full refrigeration with salt added to the ice.

Citrus fruits, apples, or similar commodities, may be shipped under standard refrigeration, ventilation, or under initial icing only. The latter provides for one icing at the beginning of the journey to market and no icing en route. The addition of salt to the ice in refrigerator cars is a growing practice in many shipping districts, particularly in the shipment of highly perishable lading. Shipping instructions call for the addition of a definite percentage of salt by weight at the time of various reicings in transit. After the bunker is filled with ice, a quantity of coarse salt equal to 2, 3, or even 5 per cent of the weight of ice added, is poured on top of the ice in the bunker. The mixture of salt and ice gives lower temperatures and more rapid cooling of the lading than is obtained from ice alone. If too much salt is used, there is some danger of freezing the lading by this practice.

Precooled Shipments

By precooling is meant the cooling down of produce to a good carrying temperature, either before or immediately after it is placed in the car for shipment. In most cases the present practice consists in stacking the containers of fruits or vegetables in well-insulated rooms and circulating a current of cold air over them until they have been cooled to a temperature as low as can be maintained in a refrigerator car. With some commodities water precooling is employed. This consists in treating the commodity with water at temperatures of 35° to 40° F., either by spraying or by immersing in the water. Water precooling is confined to lettuce, celery, spinach, and broccoli and products of this type which are not injured by wetting and can be shipped in that condition without being damaged. Produce is sometimes precooled after it is loaded by forcing cold air into the car through the hatches at one end of the car and removing it from the other end. Precooling by this method is usually carried on at large plants in connection with railroad icing stations.

Other Types of Refrigeration

With vegetables such as lettuce and spinach, it is the practice in some producing regions to put a quantity of crushed ice or a lump of ice in each crate between the layers of vegetables which in melting cools the contents of the package very quickly. This practice must be confined to commodities which will not be mechanically injured by the ice or by being wet. In some cases, the placing of ice on the top of a load in the body of the car is also practiced. These methods of refrigeration are somewhat similar to precooling, in that they attain a quick cooling of the commodity.

Protection from Freezing in Transit

Many vegetables are stored almost entirely in the producing regions and there is also much storage of fruits, especially apples, at points adjacent to where they are produced. These products are in many cases moved to market during the winter months when there is danger of freezing en route. It is necessary, therefore, to provide some method for their protection from low temperature injury.

Under some conditions the insulated car used as a refrigerator car will afford sufficient protection. In the movement of apples from the Pacific Northwest, or potatoes from northern Maine, however, it is necessary to provide special protection.

One of the most common methods for protecting the lading from freezing is to use the ordinary refrigerator car and place stoves in the bunkers. Special stoves have been developed for this service, using kerosene, hard coal, alcohol, charcoal briquetes, or wood as fuel. The present tendency is strongly in the direction of heaters using charcoal for fuel. In some cases, provision is made for the carriers to attend to heating the cars en route, this service being known in certain sections of the country as carriers' protective service. The shippers may, however, furnish such service themselves in which case a messenger is usually sent along with a number of cars to attend to the lighting of the heaters, to keep fuel in the stoves, and to render such service as is necessary to ensure the safe arrival of the commodities at the market. This method of employing refrigerator cars as heater cars is advantageous to both carrier and shipper. During the winter season there is less demand for the equipment for use as refrigerator cars which leaves well-insulated cars free for use in handling products that require protection from low temperatures while in transit.

Cars equipped especially for heater service, with the heaters installed permanently and the car body so constructed that the hot air from the heater is conducted under the floor and around and over the lading are sometimes provided. Because of the relatively short season in which such cars are needed, and the fact that they are not readily adaptable for other uses, it is questionable whether the construction of a special type of heater car is warranted.

Modified Box Cars for Prevention of Freezing

Ordinary box cars are in some cases adapted to the prevention of low-temperature injury to fruit and vegetables by placing a solid lining of boards in such a manner as to leave a 6-inch air space between the lining and sides, ends, and floor of the cars, thus providing a channel for the circulation of air around the load. The doorway is bulkheaded off from the rest of the car and a stove installed in the space between the doors, with the stovepipe extending through a temporary panel placed in position in one of the doorways. This type of heater car is used to a considerable extent in transporting potatoes grown in the Northeastern and New England States. This method requires the services of a messenger to keep the stoves burning and the cars properly heated.

Box cars without heating are also used in the shipment of produce in the winter by providing a false floor and insulating the space beneath the false floor, the sides and ends of the car and the top of the load with a thick layer of shavings or sawdust. This method has been used particularly in the shipment of boxed apples. Its success in preventing frost injury depends entirely, of course, on the heat contained in the produce and the protection afforded by the insulating material. In the further development of this type of service, it remains to determine the most efficient and economical method to use for all types of commodities.

Water Transportation

Since the opening of the Panama Canal, water transportation has assumed increasing importance in the distribution of fruits and vegetables. This route makes possible direct shipment by water from the West coast points to Europe, whereas before, export shipments to these markets required long rail haul and much rehandling. England always has been a good market for American apples, and it is becoming a market for American citrus fruits also. (Fig. 337.) Several lines of steamers equipped with refrigerator holds make regular sailings from the Pacific coast points to Europe, affording good transportation facilities for this export trade. From

FIG. 337.—Loading citrus fruit at San Pedro, Calif., for shipment to England by way of the Panama Canal

the eastern United States there has been for many years a more or less steady export trade in apples, pears, and some vegetables. With the increase in refrigerated space in the ships on these runs, this trade should increase, as with proper handling it should be possible to transport peaches, plums, and other highly perishable fruits with assurance that they will arrive in fair condition.

Water transportation has been utilized for many years in the coastal trade for fruits and vegetables and with the development of refrigerated ships it bids fair to become more important. Where fruit can be handled direct from the producing region to terminal market by water, undoubtedly, this form of transportation is practicable, but where a considerable rail haul at either end of the journey is necessary, the advantage of water over rail transportation ceases to be so marked.

Motor Transportation

Highway transportation of fruits and vegetables by motor truck from the orchards and gardens direct to the consuming markets is rapidly replacing rail shipments wherever conditions are favorable. Motor transportation is, to a considerable degree, limited to regions relatively near the markets and where the greater part of the distance traversed is covered by hard-surfaced roads. Not only is motor transportation being employed for the quick handling of perishable products between the orchard and truck farm and the rail shipping point, but in many cases where the distance is not too great, the entire trip to market is being made by motor truck. Motor transportation has this advantage, that the produce may be loaded at the orchard or packing house and no extra handling is required until it reaches the market. As compared with rail or water transportation, the direct haul by motor truck is a decided saving in manual labor and it likewise avoids injury to the produce. By the other methods of transportation the produce must first be loaded at the farm, hauled to the shipping point, unloaded upon the platform, and later into the cars or boat, and after its journey by rail or boat, it must again be loaded upon wagons or trucks and hauled to the markets.

Where the distance does not exceed 150 miles, motor transportation in many instances consumes less time than is required in the several operations incident to rail or water transportation. Perishable commodities like strawberries, dewberries, peaches, plums, and grapes are being moved by motor truck in better condition in many cases than when transported by rail or water. Under ordinary conditions the more perishable fruits or vegetables are loaded on the motor truck late in the afternoon and reach the market about midnight, thus making their journey during the early part of the night when the temperature of the air is falling so that the load is well ventilated and cooled en route. Motor transportation over reasonably good roads has been found to cause less injury to the load from jolting than by rail shipment, and in addition the ventilation of the motor load is superior.

Examples of successful motor transportation over relatively long distances are numerous but that on the Eastern Shore of Virginia and Maryland will serve as an example. During the strawberry season of 1925 the strawberry growers of the Virginia Peninsula and those of the adjacent section of Maryland established a motor transport to Philadelphia, Pa., Camden, N. J., and other markets in the general region around Philadelphia. The trucks were loaded at the field packing sheds about 4 p. m. and were unloaded on the Philadelphia wholesale market as a rule between midnight and 1 a. m. and the fruit arrived in excellent condition. The asparagus growers of the Morrisville section in eastern Pennsylvania formed an association and established motor transportation by means of which the product, leaving the farms late in the afternoon, arrived in Newark and Jersey City, N. J., in time for the early morning market. The peach growers of New Jersey have established similar motor transportation for their product which has proved both economical and a great saving in time.

The type of truck employed in this method of moving fruits and vegetables depends on the packages used and the commodity carried. Cabbage is generally loaded in bulk. In this case the truck is provided with vertical side and end racks. For peaches and sweet potatoes, which in certain sections are packed in hampers, the trucks are provided with vertical side and end racks, and also with horizontal racks on which the packages are placed in an upright position, thus forming layers in the load and protecting the lower layers from the wieght of those above them. Generally, all loads are covered with a canvas sheet to protect them from dust and heat.

The refrigerated motor truck has not yet been fully developed although attempts have been made to construct one that will operate cheaply and effectively. Trucks of this type, however, are merely insulated boxes with a compartment reserved for ice similar to the bunkers in a refrigerator car. There is one form that depends on the circulation of brine through coils located in the top of the carrying compartment, which, from the standpoint of cooling the load is successful.

Motor transportation is revolutionizing the handling of fruits and vegetables and has materially changed the relationship of producing regions to markets in that sections 100 to 150 miles distant from the market which were formerly inaccessible for production are now within the range of economic utilization. Many cases might be cited where orchard and truck-growing enterprises of the past have failed for the want of this one factor which is so fully supplied in motor transportation.

World Production and World Markets

Imports of fruits and fruit products from the Old World to America began with the earliest colonization days. Because of the character of transportation then available—sailing vessels—it was impossible to transport any except the most nonperishable of the fresh fruits, and then only from the nearest countries from which they could be obtained. Naturally the bulk of the fruits moving in commerce were either dried or preserved. Raisins and prunes early became relatively important among the import commodities, although even these were considered luxuries.

According to accounts even before the Revolutionary period there was considerable importation of fruit products, but no statistics of imports or exports were published until 1821 when the Treasury Department issued a report covering trade of this character. In this report, currants, raisins, figs, plums, prunes, and almonds were separately mentioned but were not listed in such a way as to make it possible to determine the quantity of each imported; the total, however, for the year 1821, was given at 2,878,873 pounds at an estimated value of $181,035. The report lists not only the dried fruits above mentioned but oranges, lemons, Malaga grapes in jars, tamarinds, citron, Maderia nuts, and filberts, as more or less regular commodities in the auction sales of the time, particularly in the New York markets. With this early beginning there has followed a gradual development of both expert and import trade in fruits and vegetables. During the early period the United States was a heavy importer

especially of prunes, raisins, currants, and other dried products, including nuts. During recent years, however, the tide has turned and the United States is now a heavy exporter of most of these commodities.

Few people, including those engaged in the handling of fruits and vegetables, realize the enormous possibilities and influence of world production of or markets for fruits and vegetables. The marketing of perishables is undergoing a constant evolution from the standpoint of source of supply of several of our important food commodities. Under the present development of refrigerated transport service the United States is increasing both its export and import trade in perishable fruits and vegetables with the countries south of the Equator. A study of Tables 4, 5, and 6 will give the reader an idea of the enormous proportions that the imports and exports of fruits, vegetables, and nuts have attained.

TABLE 4.—*Imports of fruits, vegetables, and nuts*[1]

	1922		1923	
FRUITS				
Fresh fruits:	*Quantity*	*Value*	*Quantity*	*Value*
Bananas ..... bunches	45, 093, 892	$19, 145, 911	43, 958, 890	$19, 738, 508
Apples ..... bus	144, 981	279, 787	133, 417	250, 606
Berries ..... lbs	1, 032, 499	94, 601	3, 626, 016	368, 914
Grapes ..... cu. ft	1, 354, 493	1, 909, 817	830, 177	1, 522, 232
Subtropical fruits ..... lbs		9, 052, 261		10, 865, 721
Dried fruits ..... lbs	126, 825, 594	8, 672, 754	107, 486, 226	6, 707, 973
Canned or preserved fruits ..... lbs	2, 252, 442	356, 862	12, 504, 474	1, 597, 082
Other fruits ..... lbs		3, 150, 793	44, 045, 183	3, 218, 195
Total		42, 662, 586		44, 269, 231
VEGETABLES				
Fresh vegetables ..... lbs	259, 456, 940	7, 169, 778	276, 835, 083	7, 793, 538
Dried, canned, and prepared ..... lbs	148, 525, 045	13, 099, 887	219, 626, 807	13, 407, 377
Total		20, 269, 665		21, 200, 915
Grand total		62, 932, 251		65, 470, 146

	1924		1925	
FRUITS				
Fresh fruits:	*Quantity*	*Value*	*Quantity*	*Value*
Bananas ..... bunches	47, 384, 017	$22, 074, 410	55, 483, 374	$29, 692, 912
Apples ..... bus	96, 030	205, 597	85, 422	176, 698
Berries ..... lbs	5, 254, 546	408, 399	5, 952, 031	511, 747
Grapes ..... cu. ft	107, 854	337, 850	119, 532	549, 934
Subtropical fruits ..... lbs		9, 455, 558		10, 401, 300
Dried fruits ..... lbs	127, 630, 733	6, 932, 504	147, 408, 006	8, 426, 832
Canned or preserved fruits ..... lbs	17, 943, 504	2, 185, 379	25, 157, 792	2, 963, 464
Other fruits ..... lbs	25, 238, 528	1, 430, 186	23, 180, 802	1, 408, 546
Total		43, 029, 883		54, 131, 431
VEGETABLES				
Fresh vegetables ..... lbs	319, 828, 448	7, 371, 166	516, 620, 548	11, 639, 012
Dried, canned, and prepared ..... lbs	249, 741, 439	16, 324, 551	303, 077, 497	20, 228, 448
Total		23, 695, 717		31, 867, 460
Grand total		66, 725, 590		85, 998, 891

[1] Figures from Monthly Summaries of Foreign Commerce of the United States, December, 1923, and December, 1925.

TABLE 5.—*Exports of fruits, vegetables, and nuts*[1]

	1922		1923	
FRUITS				
Fresh fruits:	*Quantity*	*Value*	*Quantity*	*Value*
Apples, bbls.	540,703	$2,599,032	1,401,881	$6,535,601
Do, boxes	3,323,165	7,396,634	4,670,648	9,676,798
Other fresh fruits, lbs.	106,259,545	5,353,932	127,226,246	6,700,289
Subtropical fruits, boxes	20,706,616	8,780,004	3,148,163	10,453,450
Dried, canned, and preserved, lbs.	438,194,072	50,078,930	340,230,528	33,951,705
Nuts, lbs.	16,022,025	1,504,724	10,511,278	1,168,465
Total		75,713,256		68,486,308
VEGETABLES				
Fresh vegetables, lbs.	89,028,281	7,699,451	85,645,891	7,918,684
Dried, canned, and prepared, lbs.	59,466,580	9,990,202	65,301,860	11,124,989
Total		17,689,653		19,043,673
Grand total		93,402,909		87,529,981

	1924		1925	
FRUITS				
Fresh fruits:	*Quantity*	*Value*	*Quantity*	*Value*
Apples, bbls.	1,880,716	$8,547,442	1,706,916	$8,275,589
Do, boxes	6,718,872	15,739,601	4,922,140	12,787,495
Other fresh fruits, lbs.	119,440,818	6,405,423	157,006,796	8,749,135
Subtropical fruits, boxes	3,144,844	10,596,234	2,625,991	12,384,837
Dried, canned, and preserved, lbs.	625,278,221	53,193,458	596,624,910	56,090,087
Nuts, lbs.	9,600,091	1,238,160	8,119,936	1,273,752
Total		95,720,318		99,560,895
VEGETABLES				
Fresh vegetables, lbs.	96,619,324	8,448,478	103,839,914	7,798,320
Dried, canned, and prepared, lbs.	67,016,240	10,980,113	71,376,299	11,266,731
Total		19,428,591		19,065,051
Grand total		115,148,909		118,625,946

[1] Figures from Monthly Summaries of Foreign Commerce of the United States, December, 1923, and December, 1925.

Raisins

The importation of raisins was by far the largest item in the fruit imports listed in the 1821 report of the Treasury Department. Raisins in jars are reported at 1,030,240 pounds, and all other raisins, 1,174,210 pounds. These, together with 24,688 pounds of currants, 259,617 pounds of figs, and 264,818 pounds of almonds, made up the list of recorded imports which were given a value of $181,035. The exact value of raisins is not stated but from this beginning the imports of raisins steadily increased from decade to decade until 1884, when the maximum import amounting to 56,676,657 pounds, valued at $3,545,916.15, was reached. Although domestic production had begun before this period it had not attained sufficient importance to have any material effect upon the quantity of raisins imported. However, from 1884 the production of domestic raisins rapidly increased and as a result the importations fell off until 1898 when 3,109,639 pounds, valued at $167,062.54, were exported and the exports increased in volume until at the present time it has attained the stupendous quantity of 125,923,926 pounds, valued at $9,291,227.

The first domestic raisins to be offered in the American market consisted of 6,000 boxes in 1873. This product came entirely from California, and mostly from two vineyards in Solano and Yolo Counties. During the early years raisin production was attempted in several districts in California but eventually the bulk of the industry centered in Fresno County which still holds first rank in the production of this commodity.

Plums and Prunes

Plums and prunes are mentioned among the import commodities of the colonial period, but no statistics exist prior to 1821, during which year 125,300 pounds were imported. The value of this importation is not recorded, but from that time on the quantity of prunes and plums imported gradually increased until 1888 when the maximum of 82,914,579 pounds valued at $2,679,759.16 was brought in. Following 1891, the rate of plum and prune importation rapidly decreased until a low level was reached.

The domestic production of prunes probably traces to a package of scions brought to San Francisco from France in 1856; but it was not until 1870 that orchards of any considerable size were planted. Following 1878 prune culture progressed rapidly in various regions on the Pacific coast. The first cured prunes were exhibited at the California State Fair in 1863, and are said to have been of the German variety. As recently as 1881, the output of the largest growers in California did not exceed 5 to 6 tons of cured fruit per annum. The California production for 1896 was estimated at 55,200,000 pounds.[3]

Commercial prune culture is located mainly in California, Oregon, Washington, and Idaho, the production centering in Santa Clara and Sonoma Counties, Calif., where conditions are well adapted for the sundrying of the fruit. The total production of dried prunes in the United States in 1925 was estimated at 167,900 tons. The establishment of all-water transportation from Pacific coast points to European countries has greatly aided the exportation of prunes, while the advertising of the food value of the prune has increased domestic consumption.

Currants

The United States imported 13,964,934 pounds of dried commercial currants in 1924, valued at $1,022,851. These currants are in fact small raisins and not the true currants of our American gardens. The currant varieties of grapes have been established in California and the methods of producing and curing commercial currants have been successfully developed, and their production in the United States bids fair to become a repetition of the history of the raisin industry.

Figs

Importation of dried figs in 1924 amounted to 42,464,895 pounds valued at $2,478,755. These figures indicate the extent to which the United States is still dependent upon Old World countries for its supply. Although the fig was introduced into this country during the early days of settlement, it is only within comparatively recent

[3] Yearbook, Department of Agriculture, 1897, p. 316, by W. A. Taylor.

years that the varieties best adapted for drying have become established in the United States and it is not improbable that there will be a great increase in fig production in this country in the near future.

Dates

Dates constitute another of the dried-fruit products which are imported in large quantities each year. According to statistics 63,606,863 pounds of dates were imported in 1924, this quantity being below normal, the estimate for 1925 being 78,705,567 pounds. Date culture has been rather slow in becoming established in the United States and it is improbable that the production of dates in this country will attain such proportions as to provide for domestic requirements at any time in the near future.

Oranges

Auction sales of oranges from the Mediterranean were of frequent occurrence in New York City early in the nineteenth century, but no separate mention of oranges in the schedules of imports appeared until 1855, when their value is given as $476,694. During the four years that this fruit was separately scheduled the imports varied from that amount to $753,695 in 1860. From 1862 to 1882, inclusive, oranges are not separately stated; but in 1883, when the item reappears, it amounts to $3,010,663.56. This was the maximum, and was followed by a decline, which reached its lowest point in 1894.[4]

At present the importations of oranges are comparatively small, being valued at only $55,433 in 1924 and $53,865 for 1925.

Commercial orange culture as now practiced did not begin until after the acquisition of Florida by the United States, and at first was confined to such eligible sites as existed along navigable water which afforded transportation for the fruit. After the close of the Civil War the industry grew with wonderful rapidity as railroads and steamboats made possible the shipment of the fruit longer distances. In the season of 1886–87 over 1,000,000 boxes were marketed, and by 1894–95 the annual crop amounted to over 5,000,000 boxes.[5]

Although this was the maximum output for a period of years owing to the great freeze, the industry soon recovered, and in 1924–25, the shipment of oranges from Florida alone totaled 11,000,000 boxes.[6]

Present Status of Imports of Fruits and Nuts

The foregoing pages have in a general way given the historical background of the development of import and export fruit trade between the United States and other countries of the world, with, however, no particular reference to the specific country with which the greater part of the trading has been done.

Table 6 shows the imports of fruits and nuts, and the principal countries from which bananas and walnuts come and the quantities of the several products. It shows that we are great consumers of bananas; that the trade in bananas is fairly stable, but in general, is on the increase rather than the decrease. An important feature of this trade, which is also clearly brought out, is the fact that it is an all-American industry, being centered in the Western Hemisphere, and the United States is a very important consumer. Lemons constitute by far the largest volume of fresh citrus fruits imported but the quantity fluctuates considerably from year to year.

---

[4] Yearbook, Department of Agriculture, 1897, p. 320, by W. A. Taylor.
[5] Yearbook, Department of Agriculture, 1897, p. 321, by W. A. Taylor.
[6] Bureau of Agricultural Economics, Crops and Markets, vol. 3, sup. 2, 1926.

TABLE 6.—*Imports of fruits and nuts*

	1922	1923	1924	1925
FRUITS				
Bananas—bunches	45, 093, 892	43, 958, 890	47, 384, 017	55, 483, 374
Imported from:				
Central America—bunches	29, 517, 895	27, 667, 941	29, 920, 677	34, 416, 787
Jamaica—bunches	10, 665, 120	9, 234, 273	10, 013, 740	12, 616, 495
Cuba—bunches	1, 808, 872	2, 277, 011	1, 709, 653	2, 695, 503
Colombia—bunches	2, 205, 538	2, 475, 775	2, 494, 949	2, 195, 145
Other countries—bunches	896, 467	2, 303, 890	3, 244, 998	3, 559, 444
Grapefruit—lbs	----------	15, 262, 437	15, 562, 984	13, 603, 556
Lemons—lbs	111, 005, 581	125, 944, 524	46, 884, 300	116, 328, 013
Limes—lbs	----------	7, 250, 234	4, 002, 315	4, 245, 008
Oranges—lbs	----------	----------	1, 173, 677	1, 107, 239
Olives—gals	----------	5, 735, 223	8, 093, 123	4, 971, 065
Pineapples, preserved or prepared—lbs	----------	----------	4, 098, 170	2, 976, 875
Apples—bus	144, 981	133, 417	96, 030	85, 422
Berries—lbs	1, 032, 499	3, 626, 016	5, 254, 546	5, 952, 031
Cherries—lbs	----------	----------	6, 668, 324	2, 945, 489
Cherries, prepared—lbs	----------	----------	3, 514, 365	12, 336, 074
Grapes—cu. ft	1, 354, 493	830, 177	107, 854	119, 532
Currants—lbs	21, 437, 820	23, 472, 586	13, 964, 934	14, 191, 852
Dates—lbs	53, 634, 730	41, 732, 727	63, 606, 863	78, 705, 567
Figs—lbs	34, 712, 185	32, 432, 892	42, 464, 895	46, 572, 230
Raisins and other dried grapes—lbs	17, 040, 859	9, 848, 021	7, 594, 041	7, 938, 357
Other fruits—lbs	----------	44, 045, 183	18, 570, 204	20, 235, 313
Ginger root—lbs	----------	----------	815, 124	769, 866
In their own juices—lbs	305, 043	1, 507, 422	1, 160, 632	866, 947
Citron or citron peel—lbs	----------	----------	3, 881, 571	3, 071, 396
Jellies, jams, etc—lbs	----------	----------	2, 549, 880	3, 212, 215
All other—lbs	1, 947, 399	10, 997, 052	1, 923, 762	1, 924, 419
NUTS				
Chestnuts (including Marrons)—lbs	20, 587, 244	25, 198, 849	27, 338, 284	25, 710, 142
Cocoanuts—lbs	79, 328, 670	66, 542, 697	57, 271, 330	59, 871, 406
Almonds, shelled—lbs	23, 736, 332	25, 893, 421	22, 203, 701	16, 144, 335
Almonds, not shelled—lbs	5, 709, 277	2, 634, 576	3, 250, 192	4, 152, 113
Brazil and cream—lbs	45, 714, 950	32, 455, 299	53, 183, 316	21, 864, 034
Cocoanut meat—lbs	34, 558, 784	36, 915, 957	47, 302, 393	47, 090, 174
Filberts, shelled—lbs	6, 304, 995	6, 813, 846	5, 923, 791	4, 196, 630
Filberts, not shelled—lbs	14, 768, 722	15, 584, 418	9, 120, 590	10, 377, 890
Walnuts, shelled—lbs	16, 208, 518	18, 245, 840	19, 197, 658	23, 756, 276
Walnuts, not shelled—lbs	31, 827, 223	18, 308, 605	25, 100, 632	28, 005, 703
Total walnuts—lbs	48, 035, 741	36, 554, 445	44, 298, 290	51, 761, 979
Imported from:				
France—lbs	20, 488, 997	19, 285, 115	23, 240, 120	26, 061, 680
Italy—lbs	9, 537, 346	11, 365, 385	10, 698, 970	10, 388, 854
Spain—lbs	407, 802	700, 721	782, 694	1, 146, 916
Chile—lbs	1, 051, 345	2, 150	1, 330, 193	293, 428
China—lbs	8, 358, 612	2, 981, 875	6, 223, 495	8, 368, 937
Japan—lbs	1, 598, 504	118, 316	466, 100	154, 089
Other countries—lbs	6, 593, 135	2, 100, 883	1, 556, 718	5, 348, 075
Peanuts, shelled—lbs	8, 050, 992	48, 364, 137	55, 975, 573	73, 134, 105
Peanuts, not shelled—lbs	3, 115, 297	3, 938, 025	4, 951, 843	10, 456, 957
Pecans—lbs	----------	----------	2, 714, 673	1, 002, 334
Pignolia—lbs	----------	----------	525, 449	767, 558
Pistache—lbs	----------	----------	1, 547, 673	845, 098
Other edible nuts—lbs	----------	8, 301, 948	1, 905, 904	2, 480, 802

Among the dried fruits currants, dates, figs, and raisins constitute the great bulk of the imports.

The list of nuts included in the imports is headed by coconuts which will probably ever constitute an important item of import because of the limited area in continental United States adapted to the cultivation of this crop.

With almonds, filberts, and Persian walnuts, however, all of which constitute important items of import, the situation is somewhat different, as all are capable of production in the United States; in fact, there is an increasing domestic production in each of them. It will probably be many years before home production displaces imports in a large measure, but this is within the realm of possibilities.

Although the United States is a very extensive producer of peanuts, it nevertheless takes advantage of the low price at which peanuts can be obtained from the Orient, and brings in a very considerable tonnage of them annually. The quantity has increased very decidedly since 1922, in which year the total of the shelled and unshelled nuts amounted to something over 11,000,000 pounds. In 1925, however, the quantity had increased to over 83,500,000 pounds, a very marked increase, showing that apparently American peanut production is on a very close competitive basis with foreign production. Transportation charges play an important rôle in the relationship of domestic and foreign production and marketing of peanuts.

Fruit Exports

The apple was the first fruit exported, trade apparently having been established with the West Indies early in the eighteenth century. There is no record of shipments, however, until 1741 when it is stated that apples from New England were shipped to the West Indies in considerable quantity. So far as known, the first transatlantic shipment of apples consisted of a package of "Newtown Pippin" of the crop of 1758, which Benjamin Franklin received in London. Evidently exports increased in the following years, since it was recorded in 1773 that American apples were found to be an admirable substitute for the English fruit when the crop failed there in that year, and that some of the merchants imported them in great quantities.[7] The younger Collinson, who recorded the fact, said of them: "They are, notwithstanding, too expensive for common eating, being sold for twopence, threepence, and even fourpence an apple. But their flavor is much superior to anything we can pretend to, and I even think superior to the apples of Italy." The first authentic statistics of apple exports appeared in 1821 in a Treasury statement which records for that year, shipments amounting to 68,443 bushels, valued at $39,966. No other fruit item was scheduled among exports until 1865.

Records of shipments during the latter part of the eighteenth century are lacking, but the New England export trade in ice, which began with the West Indies in 1805, was accompanied by shipments of apples on a large scale. The ice trade was extended to India and China in 1830, following which New England apples could be had in the ice-receiving ports of those countries. According to the statement of B. G. Boswell,[8] in 1843, the fruit dealers of Boston had at that time been shipping apples and cranberries to Europe for many years. In 1845, it is stated [9] that the Newtown Pippins from Ulster County, N. Y., sold in London at $21 a barrel. The merchant to whom they were consigned wrote that the nobility and other people of great wealth bought them at a guinea a dozen, or about 42 cents an apple.

Patrick Barry wrote from London, in 1849, commenting on the American apples then for sale on that market, and emphasizing the

[7] U. S. Department of Agriculture Yearbook, 1897, p. 343, W. A. Taylor.
[8] Transactions American Institute, 1843, p. 125.
[9] Genesee Farmer, November, 1845, p. 175.

importance of sending abroad none but carefully handled fruit of selected varieties.[7]

American apples found their way to China during the period when the trade in ice was at its height, but it is only within recent years that commercially important quantities of American-grown fruits have been shipped to oriental markets. Though the oriental markets constitute the most distant trade centers for American fruit products, there are a number of others which are equally interesting from a geographical standpoint. With the storage and transportation facilities now available to the exporters of fresh fruits, it is possible to take advantage of the markets of the Southern Hemisphere during the period when their fruits are no longer available so that the markets for the more important fresh fruits, such as apples, pears, and cranberries, are limited only by available facilities on established trade connections.

Each year witnesses an extension of the field and an increase in the total quantity of goods exported. The important foreign markets which now receive fresh fruits from America are found chiefly in Great Britain, continental Europe, South America, the West Indies, and the Orient. The great bulk of American production, however, is absorbed in the markets of the United States. Table 7 shows the countries to which barreled and boxed apples were exported from 1922 to 1925, inclusive, together with the quantity and value in each case. The table shows also the relation of barreled to boxed apples in the export trade, both as regards volume and the extent to which the different types of packages and contents are accepted in the various countries.

TABLE 7.—*Export of boxed and barreled apples from the United States to principal markets, 1922–1925*

Country of destination	1922		1923		1924		1925 [a]	
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
United Kingdom—bbls.	430,508	$3,073,320	1,206,928	$5,598,791	1,564,432	$7,059,892	1,345,899	$6,460,496
boxes.	2,330,872	5,065,005	3,103,226	6,397,227	4,167,941	9,894,226	2,587,854	6,752,549
Canada—bbls.	47,743	164,294	42,190	172,251	35,936	137,103	34,949	131,944
boxes.	414,777	771,314	502,988	739,954	556,868	797,551	547,929	1,004,566
Germany—bbls.	14	191	4,042	20,142	51,565	233,620	24,130	117,044
boxes.	14,384	29,087	33,718	78,182	619,209	1,519,969	462,326	1,166,718
Netherlands—bbls.	283	1,944	3,397	16,616	3,879	16,526	769	4,769
boxes.	4,858	12,990	40,097	91,619	294,580	764,422	267,846	674,625
Brazil—bbls.	1,602	10,275	232	2,114	1,168	7,267		69,290
boxes.	36,196	147,428	55,671	189,803	106,780	400,832	147,355	619,887
Argentina—bbls.	13,000	111,615	26,877	166,217	48,973	266,240	99,147	503,372
boxes.	45,237	183,835	95,957	328,779	105,181	406,069	131,981	484,375
Philippines—bbls.			8	24				
boxes.	77,502	127,862	112,347	184,108	159,992	261,546	123,310	219,504
Sweden—bbls.	1,078	6,972	37,417	179,698	94,225	445,850	85,949	444,240
boxes.	37,727	125,741	140,295	348,606	134,312	340,729	114,426	329,685
Denmark—bbls.	68	515	12,628	58,779	25,023	109,866	42,391	212,727
boxes.	25,150	75,304	75,951	182,381	80,991	185,913	93,419	248,207
Mexico—bbls.	3,913	24,844	3,677	19,529	1,812	10,663		10,107
boxes.	88,303	188,870	106,291	202,824	135,487	255,748	84,405	205,842
Norway—bbls.	13,229	68,479	28,836	139,905	20,897	96,181	19,295	101,664
boxes.	118,453	331,938	208,968	478,988	90,661	247,081	82,844	267,036
China [b]—bbls.	68	467	117	695				
boxes.	27,333	49,855	44,222	78,432	71,956	136,904	73,048	169,908
Other—bbls.	9,826		12,820	64,090	17,033	91,171	37,280	138,136
boxes.	57,116	166,982	85,921	238,009	119,188	369,539	141,497	491,322
Total—bbls.	540,703	2,599,032	1,401,881	6,535,601	1,880,716	8,547,442	1,706,916	8,275,589
boxes.	3,323,165	7,396,634	4,670,648	9,676,798	6,718,872	15,739,601	4,922,140	12,787,495

[a] 1925 tentative figures. [b] Figures for China include Hongkong.

[7] U. S. Department of Agriculture Yearbook, 1897, p. 343, W. A. Taylor.

From the above it is evident that American apples are acceptable in the markets of a large portion of the world. The increased demand for American apples in the world markets also indicates that with proper stimulation aided by the exportation of only those varieties and grades of fruit in demand that the export trade in American apples can be very materially increased. Space in this article does not permit a full discussion of the export trade in other fresh fruits which now includes large quantities of oranges, grapefruit, lemons, pears, and nuts.

Exports of Canned and Dried Fruits

Dried fruits constitute a very considerable item in the value of the foreign export trade and canned fruits of American production are finding more and more use in various markets of the world. One of the important openings for the fruit interests is to find those markets which will take American fruits, either fresh, dried, or canned, in sufficient quantities to justify international trade and to endeavor, through fair dealing and the offering of high-grade products, to encourage their use by our foreign neighbors.

TABLE 8.—*Exports in pounds of canned fruits, 1922–1925*

Fruit	1922	1923	1924	1925 [1]
Apples and apple sauce	[2]	[2]	14, 581, 453	12, 358, 105
Apricots	[2]	25, 771, 246	37, 202, 527	33, 403, 136
Cherries	1, 925, 935	1, 465, 702	1, 794, 006	1, 695, 188
Prunes	[2]	[2]	2, 485, 067	2, 881, 538
Peaches	57, 947, 751	40, 244, 591	65, 851, 366	84, 749, 086
Pears	46, 492, 390	40, 553, 353	59, 122, 987	69, 457, 983
Pineapples	23, 099, 436	17, 414, 173	28, 501, 951	36, 267, 834
Plums	2, 532, 900	1, 522, 434	1, 314, 682	2, 715, 633
Other	73, 155, 300	20, 604, 876	13, 458, 809	19, 831, 572
Totals	205, 153, 712	147, 576, 375	224, 312, 848	263, 360, 075
Exported to:				
Belgium	1, 495, 473	1, 133, 218	5, 484, 858	2, 894, 405
France	6, 583, 477	3, 006, 443	4, 264, 557	7, 198, 445
Germany	[3]	661, 069	3, 245, 773	6, 414, 612
Netherlands	1, 571, 697	1, 620, 739	3, 848, 898	3, 194, 310
Norway	888, 541	929, 577	420, 840	289, 519
Sweden	[3]	1, 100, 360	1, 599, 787	1, 637, 122
United Kingdom	170, 429, 036	106, 607, 966	176, 723, 440	207, 459, 053
Canada	8, 445, 245	11, 679, 313	8, 548, 175	10, 099, 053
Cuba	1, 665, 236	6, 644, 345	7, 086, 598	6, 430, 928
British India	912, 823	1, 013, 845	993, 047	1, 307, 207
Dutch East Indies	1, 840, 161	1, 671, 967	1, 185, 895	1, 799, 259
Japan	[2]	1, 459, 717	1, 131, 909	658, 080
Philippines	806, 873	741, 340	1, 222, 564	960, 586
New Zealand	[3]	1, 232, 682	672, 059	1, 544, 391
Other countries	10, 515, 150	8, 073, 794	7, 884, 448	11, 473, 105

[1] Figures subject to revision. [2] Not separately shown.

Table 8 showing the important exports of canned fruits, together with the countries receiving them, is exceedingly interesting, in view of the fact that the export trade in 1925 far exceeds that of any previous year, the exports for 1922 being larger than those for 1923. There has been, however, a steady increase in the export trade in canned fruits during 1923, 1924, and 1925. The chief purchaser of American canned fruits is the United Kingdom, with Canada as the next best customer, although Canada purchased in 1925, only about one-twentieth the quantity of American canned fruits that were pur-

chased by the United Kingdom. France, although an important fruit-growing country, is the third best customer on American trade lists for canned fruits, with Cuba in the fourth place and Germany holding fifth place. With the exception of the Netherlands, the remaining countries listed consume annually less than 2,000,000 pounds of these products. During the period from 1923 to 1925 there was a steady and important increase in the quantity of canned fruits going to the United Kingdom. Canadian trade, though much smaller, has shown greater fluctuation, varying from 8,445,000 pounds in 1922 to 10,990,000 pounds in 1925, with a larger purchase in 1923 than in 1925.

In general, the figures indicate a growing popularity for American canned fruits abroad which is a very hopeful sign and should tend to stabilize fruit production in this country.

Exports of dried fruits show a wide variation depending upon production in foreign countries and upon the purchasing ability of those countries. The average annual production of prunes in France, for example, was around 45,000 short tons during the period between 1904 to 1908 and dropped to an average of 20,000 short tons during the period from 1909 to 1913, and below 12,000 short tons during the period from 1919 to 1922. In 1923, the production rose to approximately 30,000 short tons, but the prune crop of France was almost a total failure in 1925. It is but natural that during the years of short production France becomes an important market for American-grown prunes.

Prunes and raisins are our largest items of export trade in dried fruits, raisins being the only commodity showing an increase for 1925. Prunes showed 33.7 per cent decrease in 1925 as compared with 1924; however, the exports of prunes in 1924 were almost four times as great as in 1923. Total exports of all dried fruits fell off 16.8 per cent in 1925 as compared with 1924, but the exports for 1924 were double those of 1923.

The distribution of dried fruits exported from the United States to the five leading markets is shown in Table 9. This shows that the United Kingdom is our leading market for raisins, Germany for apples with the Netherlands a close second, Germany also being our most important market for apricots with the Netherlands a close second. Canada is our best market for dried peaches, France for prunes with the United Kingdom second, and for all other dried fruits the United Kingdom, Sweden, Germany, Canada, and the Netherlands being our best market in the order named. Local conditions in these various countries change the order of their importance as markets for American exports from year to year.

TABLE 9.—*Exports of dried and evaporated fruits, 1922–1925*

	1922	1923	1924	1925
	Pounds	*Pounds*	*Pounds*	*Pounds*
Raisins	93, 891, 071	77, 814, 000	92, 139, 672	125, 923, 926
Exported to:				
Denmark	1, 645, 043	3, 927, 660	3, 962, 942	3, 379, 850
Germany			3, 369, 477	14, 672, 450
Netherlands	5, 363, 525	3, 723, 240	3, 862, 685	12, 206, 104
United Kingdom	44, 160, 923	17, 211, 200	19, 175, 515	43, 635, 978
Canada	29, 445, 185	33, 855, 098	41, 330, 740	30, 572, 791
Mexico	1, 033, 007	1, 330, 983	1, 632, 820	2, 010, 015
China	683, 060	3, 630, 503	4, 563, 551	3, 384, 814
Japan	4, 024, 168	5, 939, 517	4, 838, 937	2, 457, 774
New Zealand	3, 772, 303	3, 747, 239	3, 866, 141	4, 967, 129
Other countries	3, 763, 853	4, 448, 560	5, 536, 864	8, 637, 021
Apples	17, 391, 339	16, 707, 165	29, 740, 472	22, 720, 824
Exported to:				
United Kingdom	2, 010, 156	1, 712, 058	3, 046, 538	1, 547, 162
Belgium	372, 305	412, 050	180, 775	452, 727
Germany	1, 554, 967	2, 855, 727	14, 152, 474	8, 332, 466
Denmark	1, 486, 178	1, 456, 559	929, 778	909, 439
Canada	188, 377	16, 713	77, 777	267, 962
France	1, 809, 702	127, 100	294, 503	677, 084
Netherlands	5, 569, 091	6, 486, 452	6, 872, 891	6, 845, 258
Sweden	2, 092, 426	2, 021, 398	2, 537, 774	1, 925, 537
Mexico	66, 236	61, 628	86, 274	64, 982
Japan	5, 761	1, 565	8, 384	1, 667
Argentina	32, 725	97, 660	99, 019	111, 040
New Zealand	15, 000	23, 375	19, 125	8, 750
Other countries	2, 188, 415	1, 435, 480	1, 435, 160	1, 576, 750
Apricots	9, 858, 450	20, 169, 265	30, 456, 243	20, 160, 775
Exported to:				
Belgium	263, 805	1, 418, 911	1, 159, 688	1, 203, 537
Denmark	1, 209, 716	3, 335, 404	1, 048, 644	1, 646, 236
France	3, 231, 301	535, 240	985, 676	1, 173, 520
Germany		1, 716, 590	9, 723, 137	4, 788, 132
Netherlands	729, 034	3, 696, 489	7, 550, 533	4, 160, 016
Norway	883, 436	1, 560, 003	416, 115	667, 882
Sweden	772, 784	1, 284, 951	1, 178, 185	763, 515
United Kingdom	1, 000, 118	3, 504, 000	4, 487, 142	3, 234, 137
Canada	602, 997	1, 822, 885	1, 896, 837	1, 372, 455
Japan		216, 834	464, 922	227, 993
Other countries	1, 165, 259	1, 027, 958	1, 545, 364	893, 352
Peaches	5, 763, 923	4, 655, 852	12, 551, 867	4, 412, 232
Exported to:				
United Kingdom	443, 668	1, 147, 868	2, 157, 079	477, 453
Belgium	61, 823	13, 887	79, 375	83, 864
Germany	366, 288	609, 347	5, 424, 024	536, 523
Denmark	294, 062	74, 456	185, 651	97, 866
Canada	1, 831, 725	1, 397, 404	1, 843, 428	2, 074, 979
France	1, 081, 575	79, 061	103, 723	220, 626
Netherlands	209, 034	89, 337	1, 446, 970	98, 316
Sweden	603, 972	494, 356	549, 002	164, 910
Mexico	68, 093	66, 177	81, 349	67, 511
Japan	10, 386	2, 673	8, 355	242
Argentina	49, 555	147, 603	80, 245	182, 349
New Zealand	43, 440	9, 943	25, 400	5, 836
Other countries	700, 302	523, 743	567, 266	401, 757
Prunes	94, 216, 105	59, 103, 757	220, 911, 703	146, 484, 934
Exported to:				
Belgium	2, 211, 142	2, 614, 209	5, 072, 584	4, 523, 923
Denmark	3, 288, 346	1, 023, 792	6, 669, 914	4, 192, 210
France	29, 942, 597	4, 340, 384	18, 091, 224	38, 408, 382
Germany	4, 217, 051	2, 311, 749	89, 792, 087	20, 637, 601
Netherlands	3, 901, 870	2, 703, 104	23, 436, 177	9, 167, 821
Sweden	5, 744, 549	4, 886, 701	7, 377, 108	4, 647, 843
United Kingdom	21, 798, 707	19, 893, 825	36, 646, 629	33, 647, 661
Other Europe		1, 964, 058	11, 828, 274	7, 686, 585
Canada	15, 434, 538	13, 784, 258	15, 556, 610	16, 552, 998
Mexico	879, 678	890, 167	976, 699	937, 359
Argentina		732, 386	869, 064	1, 504, 444
New Zealand	1, 194, 470	1, 300, 443	1, 583, 039	1, 607, 314
Other countries	5, 603, 157	2, 658, 681	3, 012, 294	2, 970, 293

Although the volume of exports decreased 16.8 per cent in 1925 over 1924, the values fell off only 4.1 per cent, the difference being due to the increase in the quantity of the comparatively high-priced raisins, which helped to offset reductions in the other items. The value of the total exports of dried fruits in 1925 was $28,928,463.

Distribution to Five Leading Markets in 1925

Raisins.—United Kingdom, 34.6 per cent; Canada 24.3; Germany, 11.7; Netherlands, 9.7; New Zealand 3.9.

Apples.—Germany, 36.6 per cent; Netherlands, 29.9; Sweden, 8.4; United Kingdom, 6.6; Denmark, 3.9.

Apricots.—Germany, 23.9 per cent; Netherlands, 20.9; United Kingdom, 16.4; Denmark, 7.9; Canada, 6.9.

Peaches.—Canada, 46.9 per cent; Germany, 12.2; United Kingdom, 10.9; France, 4.9; Argentine, 4.1.

Prunes.—France, 26.2 per cent; United Kingdom, 23.3; Germany, 14.1; Canada, 11.3; Netherlands, 6.3.

Other dried fruits.—United Kingdom, 25 per cent; Sweden, 22.5; Germany, 14.2; Canada, 11.7; Netherlands, 6.7.

The usual distribution of dried fruits was influenced by several new factors during the last year. The almost complete failure of the French prune crop brough that country to the fore as a purchaser of American prunes. Yugoslav prunes were offered in normal quantities, but these are more preferred in Germany than in France.

The new German tariff on prunes, which fixes a wide differential between prunes in boxes and in bags, has affected our trade to a considerable extent, exports to Germany dropping from nearly 90,000,000 pounds to about 50,000,000, and of this latter quantity, a very large portion consisted of low value prunes shipped in sacks for repacking in that country.[10]

Leading Markets Show Increased Purchases of Raisins

With the exception of Canada, Denmark, and Japan, increased amounts of raisins were sent to the 12 countries which lead in the consumption of dried fruits. The reduction in the case of Canada is largely due to the heavy shipments of the preceding year that were made to avoid the recently assessed duty of 3 cents per pound. The Japanese luxury tax of 100 per cent cut the exports to that country nearly in half. The reduction in the case of Denmark was roughly 20 per cent. This may be more apparent than real, for the same quantity of fruit may be reaching that country after transshipment.

The amount of available supplies of peaches, apricots, and apples, together with a good domestic market, are probably the major causes of the reduced exports of these products. Much of these fruits which might otherwise have been exported in the dried condition, were shipped as canned—a form of higher value.

Competition of British Dominions Felt—Probable Trend of Future Demand

The increasing competition of the British Dominions is making itself felt in the United Kingdom market. This will probably become more severe, for in addition to preferential duties, the average quality of these packs is improving. This last factor is of greater interest than the former, for in the past the quality difference was frequently so great that the preference in duties was not sufficient to compensate for it.

While less dried fruits were exported in 1925 than in 1924, yet greater quantities of most of these products were shipped abroad last year to the various countries than in 1922 and 1923, and the total amounts were also larger in nearly every case. It is to be expected that as prosperity increases in Europe, with its resulting rising standard of living, less demand will be made for the relatively low-priced dried fruit and more for the more expensive canned pack, with a greater resulting profit to nearly all those engaged in the industry.[11]

---

[10] Department of Commerce Report, Mar. 22, 1926, p. 710.
[11] Department of Commerce Report, Mar. 22, 1926, p. 711.

Vegetable Imports

Vegetable growers of this country frequently lose sight of the fact that, in addition to the great quantities of fresh vegetables produced and consumed within the United States, there is a very considerable importation. During 1924 the value of vegetables imported reached $15,905,000 and our exports were valued at $11,200,000. The imports came chiefly from our near neighbors—Mexico, Cuba, and Canada; but large quantities of onions in particular came from Spain and Egypt.

Green peas are reported from Canada, Mexico, Bermuda, Japan, the Netherlands, England, other British Isles, Chile, and Germany; but the largest quantities come from Mexico and Bermuda during the month of February.

Table 10 summarizes the imports of dried and fresh vegetables without giving the countries of origin or destination.[12]

TABLE 10.—*Imports of dried and fresh vegetables, 1923 and 1924*

	1923		1924	
Dried:	*Pounds*	*Value*	*Pounds*	*Value*
Beans	124, 562, 063	$4, 354, 811	68, 037, 578	$2, 765, 217
Garbanzos (chick-peas)			52, 070, 963	2, 918, 093
Peas	18, 657, 911	805, 450	24, 702, 399	1, 119, 723
Fresh:				
Onions	111, 612, 042	2, 281, 868	75, 504, 608	1, 530, 856
Turnips	114, 559, 768	471, 662	153, 619, 286	691, 140
Potatoes	732, 334	1, 069, 097	453, 802	732, 222
Mushrooms and truffles	5, 120, 364	1, 521, 007	5, 025, 821	1, 721, 831
Tomatoes	46, 989, 608	1, 450, 769	56, 303, 625	1, 883, 531
Other vegetables		2, 520, 142		2, 543, 185
Total		14, 474, 806		15, 905, 798

Tomatoes reached the United States from December to June, mainly from Bermuda, Cuba, Mexico, and the British West Indies. Car-lot shipments of tomatoes from Mexico during 1924 totaled 1,938 cars, while Cuba furnished our markets a quantity equal to 117 cars. Potatoes come chiefly from two sources—Canada, from which country an important seed supply is received, and from Bermuda, which sends to the Atlantic coast cities table stock in December and January, and later from February to May, in competition with early potatoes from Florida. Besides these, occasional lots are received from the Netherlands, Mexico, Jamaica, and Cuba. Beets are reported as being received from Bermuda in February, March, April, and May; from Jamaica in February, March, and April.

Cabbage is purchased from the Netherlands chiefly and it arrives during January, February, March, and April, but shipments are also reported from Canada and from Cuba. Holland has for many years been a more or less important source of a certain grade of cabbage much prized in this country; but during 1924 Germany contributed shipments of considerable size to this import product.

[12] U. S. Dept. Com. Reports, Feb. 23, 1925, p. 445.

Onions

During the season of 1924, 75,504,608 pounds of onions were imported into the United States. These onions came from Australia, Bermuda, Canada, Chile, Cuba, Egypt, France, Italy, Mexico, Spain, the United Kingdom, Uruguay, and Venezuela.

Table 11 indicates the countries from which onions are imported, together with the months during which the imports reached American markets. It will be noted that Spain and Egypt are the two chief contributing countries.

TABLE 11.—*Month of arrival of onion shipments to the United States, and total receipts, 1924*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
													Bushels
Australia			X	X									(1)
Bermuda					X	X							(1)
Canada								X			X		5,000
Chile		X	X	X									(1)
Cuba			X	X									6,000
Egypt			X	X	X	X	X						153,084
France								X					(1)
Italy		X					X	X	X				17,000
Mexico			X	X									16,000
Spain	X	X	X	X	X	X	X	X	X	X	X	X	1,003,000
United Kingdom									X	X	X		32,287
Uruguay			X	X									(1)
Venezuela							X						(1)
Total													[2] 1,324,642

[1] Detailed figures for all sources lacking. [2] Total given is Department of Commerce figure.

As will be seen from Table 11 we have gone far afield for some of the imports of this important vegetable. The 34 shipments from Chile, which, in the main, came during the months of February, March, and April, with the heaviest shipments in the two later months, have a very great significance because these onions are chiefly of the Bermuda type and reach the markets of the United States in advance of the supply from Bermuda and from our own production center in Texas. There is a possibility that in the future Chile will make a very important contribution to the supply of onions between the period of the harvest of the fall onion crop of the North and the receipt of the Bermuda and Texas product. Experiments carried on by our Chilean neighbors indicate a real possibility in this direction.

The Egyptian Onion Situation

The annual production of onions throughout Egypt average approximately 750,000 tons of which 50,000 tons, or 7.5 per cent, are exported in a normal year. Of the exports, Great Britain takes by far the largest quantity, the United States being the second largest consumer of Egyptian onions, receiving as much as 200,000 bushels in some years. Consular comment, under date of March 17, 1921, on the shipment of Egyptian onions to the United States is to the effect that such shipment is highly speculative because of the distance and consequent length of time that the onions are closely stored on shipboard during the voyage and the consequent danger of sprouting. This risk is also incurred, but to a lesser degree, in shipping to Lon-

don and other European markets. The onion imports for 1924 amounted to 75,504,608 pounds, valued at $1,530,000 in round numbers. These onions, however, are not strictly comparable with or competitors of the Bermuda product from Bermuda and Texas which reach the markets of the United States at the same time. The quantity of this product which can be absorbed with satisfaction to the exporting country will, without a doubt, depend upon the available supply of onions from Bermuda and from Texas, as well as upon the quantity and condition of the hold-over crop of the northern areas.

Spanish Onion Situation

Spain sends to the United States annually a considerable consignment of onions. There are two seasons for the shipment of onions from Spain, one from May into July, during which period the Babosa or spring onion is shipped; and one beginning in July and lasting through the winter during which period the Grano, or fall onion, is exported. The Babosa is a white onion, flat and soft, of poor keeping quality and, for this reason, not popular for exporting except to near-by countries. Few shipments of these onions are made to the United States. The Grano on the other hand, keeps for months and the annual shipments of this variety to the United States often reach as much as 1,000,000 bushels. These onions which are popularly known in the United States as Valencia onions constitute one of the most important receipts from Spain.

Vegetables from Canada

Canadian-grown potatoes find extensive use for seed by the planters of early potatoes in the Southern States. These potatoes are transported from Prince Edward Island and New Brunswick by water to southern ports adjacent to the planting areas. Rutabagas are imported in large quantities from Canada every year, 153,592,555 pounds (about 2,500,000 bushels) coming across the border in 1924.

Mexican Production of Vegetables

The shipment of fresh vegetables from Mexico to the United States and Canada during the season of 1925 indicates that the industry of growing winter vegetables for northern markets is becoming more firmly established each year and is steadily increasing in importance. The chief product from Mexico has always been tomatoes, but other vegetables are being grown and the quantity is increasing proportionately to that of tomatoes. The report of United States Consul Henry C. A. Damm, bearing date of July 31, 1925, records the shipments of fresh vegetables from Mexico for the years 1920–1925, as follows:

TABLE 12.—*Car-lot shipments of vegetables from Mexico*

Year	Tomatoes	All other vegetables	Year	Tomatoes	All other vegetables
	Carloads	*Carloads*		*Carloads*	*Carloads*
1920	739	13	1923	1,769	441
1921	786	33	1924	1,808	583
1922	1,212	98	1925	2,177	753

During the season of 1924–25, the shipments of tomatoes passing through the United States to Canadian markets amounted to 228 and 226 cars, respectively. The shipping season for Mexican vegetables begins in December and ends the following June. The peak of the shipment is reached in April and May. Mr. Damm says:

> The shipping and marketing of vegetables is in the hands of the Americans who provide the local growers, when necessary, with the seeds, fertilizers, and other requirements, and, therefore have considerable interest in the crop. They also do the selecting and packing which is carried out with great care, and only the best qualities of vegetables are allowed to go forward. During the summer representatives of the packers visit the markets in the United States to establish new connections and to maintain the old. The demand for the vegetables seems to be constantly increasing and no complaints are heard of glutted markets and resulting losses. On the other hand, the markets would appear to be able to absorb even greater quantities than already offered, within the limited time during which there is practically no competition. Prices during the season passed were satisfactory and as far as can be learned, the principal shippers made money.

The growing of vegetables in Mexico, however, is subject to the same difficulties and hazards as found in the States. In the same consular report mention is made of the fact that the growers state that only about 30 per cent of the vegetables grown on the west coast of Mexico are shipped because of the limited season and the growers are beginning to consider the possibility of canneries to take care of the products which can not be marketed in the raw state.

The consul points out the fact that at the present time considerable quantites of American canned tomatoes find their way into Mexico at fairly remunerative prices. If the growers of tomatoes in Mexico should establish canning factories in that territory it will serve either to stimulate greater consumption of canned tomatoes in Mexico or to curtail the market for United States packed tomatoes in Mexico.

Of the other crops which are grown in Mexico recorded in Table 12, lettuce, melons, onions, green peas, green peppers, and potatoes were exported in considerable quantities.

A report was made on July 28, 1925, accompanying a comparative statement of exports declared at this consulate and its agencies during the first half of the year 1925. This period practically covers the vegetable shipping season. The figures representing quantities and values of fresh vegetables below are taken from the statement:

TABLE 13.—*Quantities and value of vegetables shipped into the United States from Mexico, 1924 and 1925*

Articles	1924		1925	
	Quantity	Value	Quantity	Value
	Pounds	*Dollars*	*Pounds*	*Dollars*
Lettuce			412,158	9,461
Melons	3,674,128	69,239	4,185,938	88,688
Onions	1,272,824	43,277	687,016	23,381
Peas, green	1,564,419	53,971	3,073,592	106,307
Peppers, green	2,568,680	89,402	3,119,592	107,330
Potatoes	93,451	3,045	253,706	6,575
Tomatoes	41,726,954	1,522,109	55,085,404	2,005,775
All other	707,911	25,173	321,525	11,574
Total	51,608,367	1,806,216	67,138,931	2,359,091

The magnitude of the Mexican fresh-vegetable industry as well as the diversity of the products which are received from Mexico have not been fully appreciated by United States growers. Although this industry is handicapped by long freight hauls and the difficulty of passing over a foreign border, the climate and labor conditions make it possible for skillful operators to obtain satisfactory returns. In addition the quality of the products is often superior to that of the southern United States.

Imports and Exports of Dried Vegetables

Imports of dried vegetables into the United States are relatively insignificant and consist mainly of special types of peas and beans. Dried peas are imported from France, Germany, the Netherlands, the United Kingdom, Canada, Japan, Chile, China, and New Zealand. In 1924, the imports of dried peas from Canada amounted to 11,193,400 pounds, from the Netherlands 4,999,200 pounds, from China 2,566,200 pounds, and from England 2,114,200 pounds. Dried beans are imported from France, the Netherlands, the United Kingdom, Mexico, Cuba, Argentine, Chile, Japan, British South Africa, Madagascar, and Italy. The total quantity of beans imported in 1924 was 68,037,500 pounds, valued at $2,765,200. Of these Japan furnished 49 per cent, Italy and England each 10 per cent, and France and Chile each 7 per cent. These figures indicate not only the relatively small quantities of dried vegetables imported into the United States, but also the wide distribution of the countries from which they come.

The export value of the several vegetable crops sent abroad by the United States in 1924 amounted to $11,217,471. These consisted of dried beans and peas and of fresh onions, potatoes, and other vegetables not specifically enumerated. Beans and peas constitute the main items among the dried vegetables exported from the United States. Between 70 and 75 per cent of the total exports of beans are purchased by Cuba. Other important markets are Nicaragua, Mexico, Honduras, Canada, and Panama, in the order named. The total export of dried beans amounted to 605,284 bushels in 1924, valued at $2,406,217. The dried peas exported from the United States in 1924 amounted to 76,918 bushels, of which 39,610 bushels went to Cuba and 12,057 bushels to Canada. Important shipments were also made to Venezuela, England, Panama, and Mexico.

Fresh vegetables exported consist principally of potatoes and onions, the principal consumers of these commodities being Canada, Cuba, Panama, Mexico, and the Dominican Republic. Although there is some fluctuation from year to year in the quantity of purchase of these commodities, Cuba is in general the leading purchaser of these crops. Canada is especially interested in early potatoes coming from the Southern States, purchasing liberally during June, July, and August. The supply of potatoes required by Cuba from month to month is considerably larger than that of Canada, but it purchases most heavily, as a rule, during June, July, and August.

The export onion situation is somewhat similar to that of potatoes, so far as Canada is concerned, purchases being made chiefly during May, June, and July, at which time Bermuda onions from

the Rio Grande River section are being marketed. The demand from Cuba, however, is much more constant from month to month than that of Canada. The Cuban market, though showing liberal demands during May, June, and July, is more subject to fluctuations from year to year than that of Canada. There seems to be no continuity in the purchases of onions by Cuba, either from month to month or from year to year. There is a constant market for a fairly liberal quantity of onions from the United States in Cuba, but no marked preference is shown for the crop of any particular season, as is the case with the Canadian market.

Present exports give a clue to the markets of the world which are most interested in American fruit and vegetable products; and the imports show the quantities of certain important items which it may ultimately be possible for American horticulturists to supply. The important future development of American horticulture lies in adequately providing for increased home consumption, and in meeting the foreign demand for canned and dried fruits and vegetables, and in the furnishing of commodities such as dates, figs, currants, and olives which present production leaves to be supplied by importation.

FEDERAL AND STATE RESEARCH AND INFORMATION SERVICE

By H. P. Gould, *Bureau of Plant Industry*

THE HORTICULTURAL INDUSTRIES are the most complicated and highly intensive specialties in the field of agriculture. As these industries developed, the need for technical specialists in particular lines to render aid of a character beyond the reach of the average individual producer became apparent as a means of promoting the general welfare of a material proportion of the population. That need has been, and is being met in many different ways.

Research

Through the agencies of the United States Department of Agriculture and the several State colleges and experiment stations, there are organizations devoted to research and the dissemination of new and valuable information which are unlike any other institutions in the world with which they may be compared. The activities carried on by the Federal Government and the individual States naturally fall into two classes—research and informational. As the terms indicate, the research activities have to do with the determining of facts and development of knowledge relating to problems concerning agriculture and the application of that knowledge; the informational activities consist, in effect, of placing information before the public in such a manner that farmers, fruit growers, and others concerned can readily avail themselves of it. In many of these activities the Federal Government and the several State agencies cooperate and supplement one another.

The United States Department of Agriculture

The history of the organization, development, and extension of the United States Department of Agriculture is exceedingly interesting, but it must be passed over here except to state that the genesis of the present department was an appropriation of $1,000 made by Congress in 1839 for the purpose of collecting and distributing seeds, prosecuting agricultural investigations, and procuring agricultural statistics. This money was to be taken from the Patent Office fund and the work was to be done under the supervision of the Commissioner of Patents who was at that time an official of the Department of State. The commissioner, in his report in January, 1841, stated that 30,000 packets of seeds had been distributed during the year and that agricultural statistics were being prepared for publication. In 1842 these statistics were published with a survey of crop conditions and prospects.

The Department of the Interior was established in 1849 and the Patent Office, with its agricultural work, became a part of it. During the following decade the work in agriculture evidently expanded somewhat but primarily along the lines originally projected.

In 1861 David P. Holloway, of Indiana, became Commissioner of Patents, and Isaac Newton, of Pennsylvania, was placed in charge of the collecting of agricultural statistics. In his first annual report as Commissioner of Patents, Mr. Holloway earnestly advocated a separate establishment in the Government to deal with the interests of Agriculture. His recommendation received early consideration by Congress and with practically no opposition, legislation was enacted which established "at the seat of the Government of the United States a Department of Agriculture." This act became a law with the signature of Abraham Lincoln on May 15, 1862. Isaac Newton, who, as stated above, was in charge of the agricultural work carried on in the Patent Office, was appointed the first Commissioner of Agriculture, and assumed the duties of that office July 1, 1862.

It is of interest to mention, at this point, that one of the first appointments, even if not the very first, made by the new commissioner was that of the late William Saunders to be superintendent of the propagating garden. This was in 1862 very shortly after the commissioner took office. It is recorded that Mr. Saunders aided materially in organizing the work of the new department. He was evidently influential in the appointment of a chemist as one assumed the duties of office on August 21, 1862, after he (Mr. Saunders) had indicated that he was experimenting with new grape varieties of which he wished to have chemical analyses made. The first publication issued by the new Department of Agriculture was a pamphlet prepared by Mr. Saunders giving the objects and aims of the experimental garden.

Thus the horticultural work of the department dates from its very inception as a separate governmental institution. It was carried forward for a long period of years under Mr. Saunders's guidance and who continued in active connection with certain phases of the department's horticultural work until his death in 1900. During his nearly 40 years of service with the department, Mr. Saunders made many valuable contributions to the horticulture of the country.

Perhaps no single accomplishment has been more far-reaching than his introduction from Bahia, Brazil, in 1870 of the orange, later to become known as the Washington Navel. It was on this variety that the orange industry of California very largely developed and at the present time it comprises about one-half of the annual orange crop of that State.

The pomological work of the department was placed in a separate unit when legislation establishing a division of pomology became effective July 1, 1886. H. E. Van Deman, then of Kansas, was appointed the first pomologist, and it was he who organized the work of the new division and directed it for several years. Since then the horticultural work has progressed systematically under various forms of organization.

In passing, it is here noted as a matter of general interest that the Department of Agriculture was given executive rank under an act of Congress approved by President Cleveland February 9, 1889. The office of commissioner was changed to Secretary of Agriculture, the incumbent becoming a member of the President's cabinet.

These statements [1] are given here by way of indicating the early interest and continuous activity of this department in horticulture. Other far-reaching influences were operating during this period. The story of the organization of agricultural education and research in the different States is hardly less entertaining than that of the United States Department of Agriculture.

During the last 60 or 70 years there have been certain events, the outgrowth of recognized needs, which have contributed more than can be estimated to the welfare of the agriculture of the country. The horticultural interests have undoubtedly received their due share of attention and much of the present development in horticulture is undoubtedly the direct outgrowth of the contributions made to agriculture in general as the natural consequnece of these events.

The Agricultural Colleges

It is impossible to designate any particular date or any one event as the beginning of modern development in American agriculture since no outstanding epoch has come without being preceded by needs or influences which have found expression in the developments that have followed. However, in many respects what is known as the Morrill Act, which takes its name from the late Senator Justin S. Morrill of Vermont, who was the principal sponsor of the act, establishes the beginning of our present system of State agricultural colleges and experiment stations. The Morrill Act became a law July 2, 1862, on which date the bill, having passed both branches of Congress, was signed by Abraham Lincoln. Although there is not known to be any direct connection between the two acts of Congress, it is exceedingly interesting to redirect attention in this connection to the fact that the act establishing the United States Department of Agriculture had been approved by the President only a few weeks before he signed the Morrill Act, that department

[1] These historical statements concerning the U. S. Department of Agriculture are taken from division of publications Bulletin No. 3, entitled "Historical Sketch of the U. S. Department of Agriculture: Its Objects and Present Organization," compiled by Charles H. Greathouse and published in 1898.

coming officially into being just the day prior (July 1) to the signing of the Morrill Act.

Senator Morrill had done his utmost to obtain the passage of such a bill for a period of five years. During that time his efforts had met with the most strenuous opposition from Members of Congress, some of them considering the bill utterly ruinous, vicious, destructive, and possessing many evils rendering it altogether iniquitous. This bill in its operation donated pubic lands to the several States and Territories, from the proceeds of which, colleges were to be established for the benefit of agriculture and the mechanic arts. The Morrill Act made possible ultimately the establishing in each of the States and Territories of a college of agriculture and mechanic arts. In many instances these institutions have become the State university, and in some cases provision was made whereby institutions already established received the benefits of the act and became the State institution.

A "second Morrill Act" was passed in 1890, the object of which was to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges, the establishment of which was provided for in the first Morrill Act.

The State Experiment Stations

The second great epoch was the Hatch Act, which was approved by the President March 2, 1887, and which provided for "Agricultural experiment stations in connection with the colleges established in the several States under the provision of an act approved July 2, 1862, and of the acts supplementary thereto." Thus the State experiment stations came into being through Federal aid granted by the Hatch Act. This act was amended once or twice within the next few years, but it was not until 1906, when the Adams Act became effective, the bill having passed Congress with approval by the President on March 16, 1906, that the next material advancement was provided. Though this act established no new type of institution, it provided so much more adequately than was the case prior thereto for investigational work at the experiment stations already established, that it is not inconsistent to look upon it as one of the outstanding epochs in agricultural development.

Information

Cooperative Extension Work

The next noteworthy Federal legislation in behalf of agriculture provided, not for additional investigational work but for the better and more complete dissemination of information already obtained. The legislation which aimed to accomplish this object is commonly known as the Smith-Lever Act. This law provides for cooperative agricultural extension work between the agricultural colleges in the several States and the United States Department of Agriculture. It is under this act, approved May 8, 1914, that the State agricultural extension work is carried on. The farm demonstration work, the home demonstration projects, girls' and boys' club organizations, county agricultural agencies, and various other similar activities

having to do with placing the best available information in the hands of those on the farms are typical of the developments under this legislation. The organization of spray rings and community spraying is one of the outgrowths of this work which has very definitely to do with the fruit interests. In other instances the dissemination of frost warnings, notices of proper times to do orchard spraying in order to take advantage of the seasonal development of some insect or disease, and the quick and timely distribution of other information of importance to an entire community or region has become possible and practicable through the farm organizations that have developed directly in connection with and as a part of the extension work.

Promoting Vocational Education

Another act of Congress which should be mentioned here is the Smith-Hughes bill which was approved by the President February 23, 1917, and became effective the following July. This act provides grants of money from the Federal Treasury to the respective States for the promotion of vocational education. Under this law various lines of educational work are being carried on, mainly in the secondary schools. It includes the background for the successful prosecution of horticultural enterprises on the farm. The educational facilities thus provided are of benefit to many who are unable to avail themselves of the advantages of the colleges established under the Morrill Act, as well as to others who may later go to some land-grant college or other institution of higher learning.

The last step of progress to be noted so far as it has to do with outstanding Federal legislation for the promotion of agriculture is the Purnell bill which was approved February 24, 1925, and became effective the following July. This act has to do with research work, its object being to still further support, promote, and develop research in the sciences having to do with agriculture and rural economy.

All of these acts of the United States Congress have, of course, had for their object the aiding of agriculture in general, the administration of the funds for particular purposes being left mainly in the hands of the college and experiment-station officials in the different States. Naturally in those States in which, for climatic or other reasons, the horticultural possibilities are limited, relatively small expenditures for horticulture are made, whereas in those where the fruit and vegetable industries are extensive a correspondingly large proportion of the funds have, as a rule, been devoted to them. Extension work in horticulture is being conducted on Federal or State funds, or both, in 42 of the 48 States. In this work about 90 extension specialists are employed and they are assisted from time to time by members of the college-teaching and experiment station staffs. Approximately $340,000 a year is now being expended in the work of extending the best methods and practices to the horticultural interests covering fruits, nuts, vegetables, and landscape improvement on farms.

Naturally, in all of these many lines of activity made possible through Federal aid, the States have assumed obligations and have made financial contributions for the maintenance and expansion of

the institutions established through grants from the Federal treasury. In some of the States this financial support has been notably liberal, whereas in others a very much more conservative attitude on the part of the State legislatures has been exercised.

Other lines of informational service should be briefly mentioned here. The extension work provided by the Smith-Lever Act has been listed. The other features centering mainly in the United States Department of Agriculture, but in most instances conducted cooperatively with the States, are the market news service, crop and livestock estimates, and crop outlook reports.

The Market News Service

Through the market news service the Bureau of Agricultural Economics undertakes to keep the growers informed in regard to market conditions, prices and other features which are of service to them in the distribution of their products. This service includes the reporting daily during the active shipping season of certain perishable products, the number of carloads received and unloaded in the large market centers of the country and also the number of cars "on track" en route to market. These reports are made widely available to those concerned with the interests represented. Present-moment information in regard to market conditions, particularly with respect to the available supply of any product in the different markets, is of the greatest concern to the grower or the shipper in the distribution of perishable crops.

Statistics, Crop Estimates, and Outlook

In a similar manner the crop estimates issued from time to time during the growing season keep the producer and the shipper informed as the season advances with respect to the quantity of different kinds of produce which is in sight throughout the country. Extremely careful discrimination in marketing of competing crops from different producing regions is often necessary and it is only when full knowledge is at hand of available supplies and their location that the grower and shipper can proceed intelligently.

The crop outlook or "intention to plant" reports are perhaps of relatively little seasonal importance to the fruit grower, since in the very nature of the crops which he handles, he can not quickly adjust his production from season to season, although such reports may be of some value to the fruit grower as an aid in determining whether or not it is wise to extend his plantings with a view to future supply. On the other hand, information in regard to "intent to plant" may be of the very greatest importance to the vegetable grower whose acreage in any crop is subject to change from season to season. If a grower has information concerning the acreage in any crop which competing growers intend to plant, it becomes possible for him to give that intent due consideration in determining his own acreage. When the principle involved in this feature is fully accepted and rigidly applied, it will go a long way in eliminating troublesome surpluses.

Regulatory Legislation

Considerable regulatory legislation that concerns the horticulture of the country has been enacted by the United States Congress and these laws are administered by the Secretary of Agriculture through different branches of the department. Three different aspects of regulatory work are of particular interest here. Under the pure food and drugs act, the purity of fruit and vegetable products such as cider vinegar, jellies, fruit butters, fruit juices, peanut butter, vegetable oils, and the like is assured, while permissible adulterants must be clearly indicated in the labels used.

The Insecticide and Fungicide Board in the department created by the "insecticide act of 1910," so-called, sees to it that the materials offered for sale in interstate commerce for the control of insects and diseases are truthfully represented and capable of accomplishing the ends claimed for them.

The Federal Horticultural Board, another unit of the department, is the Secretary's instrument for administering the Federal plant quarantine law. Under the authority conferred by Congress in providing for this control measure, the board regulates the importation of plants from foreign countries with a view to preventing the introduction of injurious insects and diseases. In case of a menacing outbreak of some insect or disease in some part of the country, this board establishes quarantines and regulations for their effective operation which are intended to prevent the spread and to aid in the control of the trouble.

Though the Federal plant quarantine measure covers all types of economic plants and the insects and diseases to which they are subject, in its actual operation, it doubtless affects plants that are important horticulturally more largely than those of any other agricultural group. The law applies in matters where interstate commerce is involved, and which State laws do not reach.

State Departments of Agriculture

Another channel of service is represented by the State department of agriculture which exists in nearly every State. The service to the horticultural interests varies with conditions in the different States, and with the provisions and limitations under which each department operates. As a rule, the State regulatory laws relating to the agricultural interests are administered by the State agricultural departments, rather than the experiment stations. For instance, in many States the nursery and orchard inspection laws, State insecticide and fungicide control measures, and other orchard sanitary regulations, including plant and insect quarantines, are administered under the State department of Agriculture. In other instances, notably California where the fruit interests are paramount in the agriculture of the State, each county horticulturally important has a horticultural commissioner who is a member of the State department of agriculture organization. State fruit and vegetable standardization regulations, standardized package laws, and other similar State measures are also administered, as a rule, by the departments of agriculture in the different States. Other services are rendered the horticultural interests by these State agencies, but those men-

tioned are somewhat typical. This type of State work deals with matters within the State where Federal legislation does not apply.

Briefly stated, the Federal and State institutions concerned with the horticultural industries of the country have contributed to those interests and are sources of aid to growers and others in many different ways, including the development of information on the geographical limitations of different crops; the adaptability of varieties to different conditions and regions, and their suitability for different purposes; methods of culture and cultural requirements; insect and disease enemies with methods of control; protection against rodents and other pests and parasites; market and crop news service; marketing including methods of distribution and sale, standardization, grading, packing, transporting, and storing.

Introducing Foreign Seeds and Plants

The United States Department of Agriculture from its very inception has been concerned in the introduction from foreign countries of valuable seeds and plants, and its introductions have included many horticultural crops and varieties that have directly contributed to the development of industries or have been useful in other ways, especially in the breeding of new varieties. In the latter field both Federal and State agencies have made, and are continuing to make very noteworthy progress.

The aim in the breeding of new varieties is improvement in practically all the essential qualities of fruits, vegetables, and other horticultural crops. The perfect variety does not exist in any crop. Better varieties are needed in the direction of improved dessert, shipping, storing, and keeping qualities; increased hardiness, including resistance to extremes of heat, cold, and moisture; better adapted to different uses—canning, drying, and the like; greater resistance to disease; earlier or later ripening varieties of particular kinds to fill some vacancy in sequence of maturity—all these and still other objectives are in the aims of horticultural plant breeders. Measurable progress is being made in many of these directions.

Any farmer, whether his interests are large or small, or the city resident with only a window box of plants, has the unrestricted privilege of taking any problems of plant culture or of animal husbandry to the specialists connected with his State institution or with the United States Department of Agriculture. Although countless problems still remain to be solved, new ones are forever coming up, and questions are constantly presenting themselves for which there is no solution immediately at hand, there is available, free for the asking, aid in the solution of many of the farmers' problems. Those problems have stimulated much of the research of past years along agricultural lines and in the sciences related thereto. Numberless experiments and other types of investigation have been undertaken for no other object than that some problem with which farmers had to contend might be given a practical solution. The policy that has in the past guided research workers, extension specialists and others connected with the Federal and State institutions having to do with agriculture will be the guiding policy in the future. It is theirs to serve.

HORTICULTURAL OUTLOOK

By L. C. Corbett and W. R. Beattie, *Bureau of Plant Industry*

THE LAST HALF CENTURY has been a period remarkable for invention and for industrial and territorial expansion. Horticulture has participated with other agricultural activities in the general progress. New industries have been inaugurated and developed; established industries have been expanded and extended into new territory until practically every known phase of horticulture has been tried and every available area has been tested. The future outlook for the fruit and vegetable industry can be forecast only through comparison with what has taken place during the last half century. Horticulture has shared with other agricultural activities in an enormous development. The period has been marked by unusual expansion of certain phases of the industry and development of new regions of production. The factors that have contributed largely to the growth of horticultural activities have been the increase and concentration of the industrial population, the increased production capacity of those engaged in horticultural enterprises, the improvement of transportation, and the geographical distribution of horticultural production to include the areas best suited to the various enterprises.

A study of census figures covering the increase and distribution of population during the last 50 years serves as a guide as to what is most likely to occur in the future, while a comparison of the relocation of fruit and vegetable production activities serves as a basis for predicting the possibilities of the future. Mass or specialized production characterizes the present trend in industrial production and in many respects this has applied to horticultural enterprises. To what extent this may hold true for the future is difficult

to predict, but it is safe to assume that any extensive decentralization of industrial enterprises in this country will not occur in the near future; on the other hand, with the United States occupying its present position in the industrial world, we may look forward to a still greater expansion of business along with which will come an increased demand for the products of horticulture.

The geographic spread of the horticultural industry during the last 50 years has merely shown the possibilities of fruit and vegetable production in the United States; in fact, the resources of the country in this line have in reality been only touched upon. In practically every section where specialized fruit or vegetable production has developed, there remains thousands of acres of suitable land waiting to be utilized, either through reclamation or by a change of cropping system. Where our markets are now supplied annually with approximately 32,000 cars of muskmelons, 110,000 cars of apples, 80,000 cars of citrus fruits, 40,000 cars of cabbage, 200,000 cars of potatoes, and other crops in proportion, it is not too optimistic to anticipate that eventually the markets of the country may require 10 times these quantities.

The law of supply and demand has been the governing factor in the past and will continue to exert its controlling influence in the future. New and specialized methods of production have developed and others are certain to follow. The work of scientists during the last 40 years has laid a broad foundation for the control of insect, disease, and other enemies of horticulture, and though the expansion of the industry has increased the hazards of production, science and engineering skill have furnished the means of control. The progressive spirit of the thousands of growers has contributed most largely to the results through the acceptance and application of the work of the scientists.

Horticultural enterprises of the past have suffered loss from many sources, but the prospect for the future is decidedly optimistic, and much of the uncertainty of horticultural production will doubtless be removed through the more general application of scientific methods. The reader may here be interested in a brief review of some of the factors which have had an important bearing on the spread and development of horticultural production. The same influences are in operation to-day and doubtless will continue to shape the development of horticultural enterprises.

Expansion and Exploitation

The past 50-year period has been marked by unusual activity in the development of certain industries and certain territories. As is usual with exploitation it was frequently overdone, and as a result, the natural or normal growth of legitimate crop production has been frequently diverted and sometimes actually retarded. Overexploitation of any industry, no matter how sound and legitimate it may be, tends to delay the normal growth of the industry in that particular region. Overzealous promoters, honest enough in their intent, have in reality proved not only a menace to those with whom they actually had business dealings but have, by increasing production and development of marginal territory, been to a considerable

extent responsible for the present complicated and unsatisfactory economic situation which in many particulars now surrounds the horticulture of the country.

Effect of Distribution of Production Areas

The distribution of the producing areas from which an annual supply of any crop is drawn has two important economic aspects, succession in production, and regional competition.

Production in Succession

In a country with as broad geographical limits as the United States, it is possible to find regions or areas which possess suitable environmental conditions for the production of short-season crops so that, by taking advantage of the seasonal changes, it is possible to develop production areas which, in succession, maintain a supply of the particular crop throughout the 12 months. The lettuce industry was formerly confined to special areas in Florida which furnished the markets for a period during the winter, and to territory in New York from which a summer and fall supply was contributed. These outdoor sources, supplemented by the greenhouse product, constituted the main sources of the commercial supply. With the extension of transportation and the development of improved packing and shipping practices, it has become possible to take advantage of areas which, because of their winter or summer climates make possible a continuous supply of this commodity throughout the year. This has had a very direct bearing upon the extensive greenhouse industry which derives a part of its revenue from the growing of lettuce under glass during the winter season. As long as the winter supply of outdoor-grown lettuce was relatively limited and the price was fairly comparable with that of lettuce grown under glass, greenhouse lettuce comprised one of the most profitable forcing crops, because it is better adapted than other vegetables to the short days and limited sunshine of the winter months. With the development of the lettuce industry on an extensive scale, in regions capable of successfully producing it in the open during midwinter as well as during the heated portion of midsummer, the greenhouse crop has been brought into serious competition.

Regional Competition

The second feature growing out of wide distribution of production, besides the extension of the season of availability of a crop in the market, is that of the economic differential which is introduced in the relative cost of production. The cost of transporting, from distant and near-by regions, crops which come into competition in the same markets may determine the success or failure of the industry in any region. Long hauls can be undertaken so long as the price of the commodity meets the various cost factors of production and transportation and still leaves a reasonable margin of profit. But when the same commodity from near-by and distant producing centers, competes in the same market, then the differential which exists between the near-by and the distant producing terri-

tory in cost of transportation becomes to a considerable extent an economic advantage in favor of the near-by locality. When it is possible to overcome this difference to an extent by care in handling, grading, and packing, it still acts as a factor limiting the quantity of the product which can be profitably marketed from the distant centers of production. This important factor in geographic areas from which are shipped competitive products will sooner or later bring about a decided readjustment in the quality production of some of our important horticultural crops.

Noncompetitive Crops

There are certain horticultural crops which, because of their noncompetitive character and the fact that they can only be successfully produced in very restricted areas within the continental boundries of the United States and its island possessions, will continue to thrive so long as the total production of the commodity does not exceed a quantity which the market will absorb at a remunerative price. Such noncompetitive crops are lemons and Valencia oranges in California, grapefruit in Florida, and pineapples from Porto Rico. Not so, however, with the winter oranges of Florida and California. With this crop, although both producing fields are distant from the great centers of consumption, there is nevertheless competition; and with them the problem is to regulate production to the demands of the market in such a way as to properly safeguard the requirements of the markets and still maintain a profitable industry.

Seasonal and Acreage Adjustments

Another important feature of crop geography manifests itself in the handling of several of our leading truck crops. Because of the diversity in the climatic conditions obtaining in various parts of the United States it has been possible to develop two or more regions of production for several of the vegetable crops. Outstanding among these are the potato, cabbage, and onion, and to a less extent celery. The crop of potatoes upon which the people depend annually for their supply is grown primarily in the northern tier of States including Maine, New York, Michigan, Wisconsin, Minnesota, and Idaho. The principal exception to this is the production in Colorado. These States are all large producing areas and it is from them that the great consuming centers receive the major portion of their annual supply. Each season, however, an important supplemental supply of freshy dug potatoes from Florida and other points along the Atlantic coast as the season advances, find a ready market. The production from this region increases in volume as the supply of stored potatoes diminishes until in summer the supply of potatoes for the great cities of the Northeast is chiefly derived from a region extending from Norfolk, Va., to Maine. The combined production of these two great areas supplemented by the crop of the Pacific coast supply the markets of the country throughout the 12 months of the year.

An outstanding feature of these complementary producing territories is the fact that if there is an unusually large production in the northern territory, the southern production can be gauged to meet the probable demands of the markets. On the other hand, if through low yields or crop failure in the North, there is an apparent shortage of stored potatoes, the southern growers have the opportunity to expand their acreage to cover the probable shortage. The adjustments of production which are possible with potatoes are also possible with cabbage and with onions, and to a less extent with celery.

These climatic areas have been made increasingly effective in meeting the market requirements of the country by the development of varieties especially adapted to them. If it were not for the fact that early varieties especially suited for cultivation in the South are planted, the program would not be as successful as it is. The relative hardiness of the plants of the Wakefield strains of cabbage when grown during the winter months, and their ready response to favorable growing conditions has made possible the extensive winter cultivation of cabbage in parts of the South.

In like manner the Bermuda onion-growing sections of Texas and southern California, and other States, serve to supplement the fall-stored crop of the North, thus providing a year-around supply of onions. Similar relationships exist in the fruit industry, in which the sequence of ripening in the different regions provides a continuous market supply over a long period. A good example is found in the strawberry, which as a local crop is of short duration, but in sequence the shipments begin in December from Florida and continue until July from the extreme northern sections. The addition of the ever-bearing varieties has now completed the annual cycle for fresh strawberries. In like manner the peach season begins in May in the earliest sections and continues until October, when the late varieties in the northern regions are harvested.

These examples of the relation which crop production in different areas bears to the yearly supply, as well as the effect which one may have on the other, are important elements to be considered in working out a satisfactory production for the future. This situation will become more acute as the consuming population of the country increases. With fruit and vegetable crops the problem is to accurately adjust the acreage in any given production area to the requirements of the market during the period when that region normally has access to and control of the market. With short-season crops like strawberries and peaches the adjustment of acreage to market requirements is a factor which if not carefully guarded is likely to lead to disastrous consequences. In fact even the most painstaking care in this respect may be upset when through unusual seasonal conditions the harvest period of two regions, which naturally follow in sequence, are thrown together; then the markets are oversupplied which usually results in loss.

If the industries are to prove profitable production must be kept within the quantity the markets will absorb at prices which return a profit to the grower.

Influence of Cost Factors on the Location of Industries

The long-time agricultural enterprises such as the tree-fruit industries are often very seriously affected by changes which may take place in the basic factors entering into the economics of their production. The modification of freight rates, interest rates, taxes, commission charges, or storage charges, may markedly benefit or handicap long-time industries such as the production of tree fruits or vine crops.

Such industries located in marginal areas of production, if they have to contend with marked increases in any one or several of these important items of production cost, may suffer the penalty of failure in the region in which they have been developed and as a result, a general relocation of the commercial industry may be brought about. The great changes in freight rates, in labor costs, and in interest charges, as well as taxes which are the inheritance of the World War, are beginning to show a marked influence upon many of the already extensively developed fruit areas of the country. Some of these fruit regions are meeting the situation by substituting more highly profitable and less competitive crops.

Population and Production

Horticultural development like general agricultural development, has outrun in certain phases of its activities, the normal increases of the consuming population. As a result of this expansion, together with the fact that some of the basic factors affecting the cost of producing and transporting products to the market have been materially increased during the last decade, many horticultural activities must be adjusted to the new economic environment which has been created.

As long as the industrial activities of the Nation remain prosperous and good wage rates are maintained, food materials will be absorbed at prices fairly comparable with those now obtaining. As soon, however, as industrial conditions become less prosperous and the purchasing power of the wage earners is reduced, horticultural products along with other food products will feel the restraining influence of the reduced purchasing power. With industries such as the production of apples and other tree fruits which require several years to come into bearing, but which remain productive for a long period, the relative advantages of various producing regions must be considered together with the rate at which population is increasing at present as compared with the expansion during the period of development of most of our present orchard areas when immigration laws were more liberal than at present. These factors together with the natural hazards of the weather must be taken into account in the planting of new orchards.

Horticultural Production National not Local

Fruit and vegetable production with the present facilities for transportation has developed far beyond any early conception of the market gardener and local fruit grower. The horticultural industries are national in their scope and bearing, and States possess-

ing extraordinary natural advantages for the development of particular industries should see to it that the development of these industries is maintained in such a manner as to adequately provide the demands of the market, but at the same time to safeguard the financial well-being of the industry. It is not to be presumed that every individual who has an orchard or a truck farm will be successful, but, in general, regions possessing satisfactory natural conditions for the development of particular crops and enjoying suitable and adequate transportation facilities should, in the main, be fairly prosperous. As soon as the general condition of an industry in a particular region indicates that the majority of the better growers of the community are not succeeding financially, it is high time that the territory took stock of itself and set about to lower its cost of production or turn its attention to some industry which can be more advantageously and successfully maintained.

Business interests, including manufacture and transportation, are so intimately related with agricultural and horticultural production that their mutual interdependence must at all times be kept in mind and other industries so directed as to help agriculture maintain itself on a satisfactory financial basis. This can not be done if agriculture and other industries are antagonistic and not a part of a common community. One can not succeed without the other, neither can one afford to exploit the other. The experience of the period during and immediately following the World War brought home to the people of the United States a keen realization of the mutual interdependence of its several economic units and consequently the necessity for maintaining a highly self-sustaining industrial and economic fabric.

This dependence of one industry upon another is markedly demonstrated in the results which follow any overdevelopment. Such development usually leads to stagnation in production with its consequent curtailment of employment and, to that extent, impairment of the purchasing power of the population which reflects itself in every line of business. Each business is in a sense its "brother's keeper," and must be developed, maintained, and operated on that basis in order that all may enjoy a fair degree of prosperity.

The horticultural industries of the country can not be economically and successfully expanded out of proportion to the other industrial developments of the Nation. It is essential, therefore, that students of horticulture look not merely to the production possibilities in a given region, but to the total prospective production of a given commodity.

Production and Prices

The prices of fruits and vegetables, like the prices of other commodities, are dependent upon many factors among which are the consumptive capacity and demand of each particular market for the commodity in question and the supply and competition among products themselves. With fruits and vegetables, as with other commodities, a point may be reached at which the supply so completely overtakes the demand that the market may be said to be saturated. Any additional supply of like quality causes a slump and may lead to demoralization of the market. On the other hand a slight decrease

in supply over demand may cause prices to respond out of proportion to the actual shortage of the supply.

This reaction of price levels is frequently observed in the annual harvest of potatoes. A crop slightly above normal frequently depresses prices out of proportion to the actual surplus, and conversely a slight shortage in the supply results in as marked a change in the opposite direction and usually to a degree out of proportion to the shortage of the supply.

Shortages in supply of both fruits and vegetables with consequent increase in prices lead to substitution of other commodities for those, the price of which has been unduly increased. This affects the price of the substitute commodity and leads to dislocation of trade. In general, the production of fruits and vegetables which is well timed and satisfactorily apportioned to the market demands leads to the greatest satisfaction of the producer, the tradesman, and the consumer.

No artificial stimulus or devices can be successfully used to bring about the disposition of abnormally abundant crops at satisfactory prices for the producer. In general, price levels will be governed by supply and demand. The demand will be determined to a large degree by the purchasing power of the public at any given time. On the other hand, the consumer must not reach the conclusion that, because his purchasing power is low, that prices of fruits and vegetables will for any considerable period of time remain below the cost of production plus transportation and other necessary handling and distributing charges. No industry can survive for long on a price basis which does not yield a satisfactory profit above cost of production.

The all-important question in connection with the production of fruits and vegetables of any kind is "Will it pay?" Ultimately in a well-developed system of permanent agriculture consumption requirements will be better understood than at the present time, and the plantings of all important perishable crops will be so adjusted as to provide an adequate quantity to satisfy the demands of the market at a price which will return a reasonable profit to the producer. When such adjustments in agriculture are finally worked out many of the present difficulties and discouragements which beset agricultural industries will disappear. Such a state of industry can hardly be attained with the present knowledge and business organization of the producers. Progress has been made in the right direction and it is believed that each year will witness substantial advances.

Production Adjustment to Food Requirements

If the future production of fruits and vegetables can be maintained with a reasonable degree of accuracy on such a basis as to adequately meet the requirements of the people, both for fresh and for canned products, horticulture has a bright outlook and may count upon reasonable prosperity. Overstimulation of production through exploitation or lack of consideration of competition which such products will meet in the open markets of the country is bound to lead to disaster. Such unfortunate additions to the general market supply not

only disastrously affect the regions responsible for them but the surplus which is thus created acts as a depressing element on the markets for all like products and therefore indirectly affects every region producing that crop.

It is probably too much to expect that knowledge of production and market requirements will be so applied that seasons of scarcity and overproduction will not occur. It is inevitable that seasons will differ and each will return its harvest in proportion to the combination of elements which make up the season.

By a careful study of the range of such fluctuation in a given territory over a long period of years, together with knowledege of the average yield of each commodity, it will become possible for growers more nearly to approach a reasonable supply to meet the demands of the market. Despite the best-laid plans, seasons will occur, particularly with orchard and truck crops, in which there will be unusual yields per acre. When such conditions prevail over a large portion of the territory producing a commodity, the total production will be greatly augmented and a corresponding depression in prices will result. Certain vegetable crops are particularly subject to wide fluctuations in annual yields, and for that reason are highly speculative and constitute a large hazard in agriculture. The best that can be done is to maintain production as close to the average of a considerable period as is practicable and endeavor to arrange a cropping system which is sufficiently diverse so that when there is little or no profit in one commodity, some other may be in sufficient demand to return a profit and thereby provide an income for the grower.

It seldom happens that all of the crops of a satisfactory farming enterprise are unprofitable in any given year. It is the general average of a series of years from a well-ordered system of crop production which should be taken into account in determining the success or failure of a horticultural enterprise, rather than the returns from a single activity. However, no enterprise can long survive if one or more of its major factors is continually operated at a loss.

Although the future of horticulture is dependent upon general business prosperity, the closer relationship that has been formed both among the fruit and vegetable growers themselves and between growers, dealers, and consumers, has tended to stabilize all horticultural production. The results of studies of the nutritive value of fruits and vegetables have popularized horticultural products in the minds of the people in general, and the adoption of standard grades and packs has created a basis on which the business and sale of horticultural products may be definitely conducted.

On the whole, the future outlook for the horticultural industries is good within the limitations of sound judgment and stabilized production. Horticultural enterprises are less subject to exploitation than formerly and the future holds the promise of fewer failures through lack of experience and judgment in the establishment of the various activities. Our export trade is increasing, especially for the standard fruits, and with our own expanding population there is a constantly increasing demand for the products of horticulture within the United States.

Miscellaneous Lists

List of new Farmers' Bulletins, Department Bulletins, Department Circulars, Miscellaneous Circulars, and Statistical Bulletins issued from July 1, 1923, to January 31, 1926, classified by general subject matter

[These different types of publications are indicated by the letters preceding each serial number]

BEES:
- Growth and Feeding of Honeybee Larvae — D. B. 1222
- Flight Activities of the Honeybee — D. B. 1328
- The Effect of Weather Upon the Change in Weight of a Colony of Bees During the Honey Flow — D. B. 1339
- The Brood-rearing Cycle of the Honeybee — D. B. 1349
- Occurrence of Diseases of Adult Bees, 2 — D. C. 287
- Bee Louse (Braula Coeca) in the United States — D. C. 334
- The Color Grading of Honey — D. C. 364

BIRDS:
- Homing Pigeons, their training — F. B. 1373
- Homes for Birds — F. B. 1456
- Report on Bird Censuses in United States 1916–1920 — D. B. 1165
- Food and Economic Relations of North American Grebes — D. B. 1196
- Food Habits of Some Winter Bird Visitants — D. B. 1249
- Returns from Banded Birds, 1920 to 1923 — D. B. 1268
- Food Habits of the Vireos — D. B. 1355
- Food of American Phalaropes, Avocets, and Stilts — D. B. 1359
- Directory of Officials and Organizations Concerned with the Protection of Birds and Game, 1923 — D. C. 298
- Directory of Officials and Organizations Concerned with the Protection of Birds and Game, 1924 — D. C. 328
- Spread of European Starling in North America — D. C. 336
- Directory of Officials and Organizations Concerned with the Protection of Birds and Game, 1925 — D. C. 360
- Local Names of Migratory Game Birds — M. C. 13
- Instructions for Banding Birds — M. C. 18

COTTON:
- Community Cotton Production — F. B. 1384
- Culture of Pima and Upland Cotton in Arizona — F. B. 1432
- Cotton Ginning — F. B. 1465
- Comparative Spinning Tests of Superior Varieties of Cotton, Grown Under Weevil Conditions, in Southeastern States, Crop of 1921 — D. B. 1148
- Segregation and Correlation of Characters in Upland Egyptian Cotton Hybrid — D. B. 1164
- Utilization of Pima Cotton — D. B. 1184
- Delinting and Recleaning Cottonseed for Planting Purposes — D. B. 1219
- Ginning Pima Cotton in Arizona — D. B. 1319
- Classification of American Cotton, with Reference to Standards for Grade, Color, and Staple — D. C. 278
- Production of Acala Cotton in the San Joaquin Valley of California — D. C. 357
- Lessons on Cotton for Elementary Schools — M. C. 43

EXTENSION WORK:
- Extension Work in Agricultural Engineering, 1922 — D. C. 270
- Home Demonstration Work, Northern and Western States, 1921 — D. C. 285
- Farm Management Extension; Early Development and Status in 1922 — D. C. 302
- Statistics of Cooperative Extension Work, 1923–24 — D. C. 306
- Extension Program in Range Livestock, Dairying, and Human Nutrition for Western States — D. C. 308
- Boys' and Girls' Club Work, 1922 — D. C. 312
- Home Demonstration Work, 1922 — D. C. 314
- Methods and Results of Cooperative Extension Work, Reported through County Agricultural Agents, 1922 — D. C. 316
- Extension Work in Plant Pathology, 1923 — D. C. 329
- Extension Program in Crop Production to Reenforce Range Livestock, Dairying, and Human Nutrition for Western States — D. C. 335
- Extension Work in Agronomy, 1923 — D. C. 343
- Extension Work in Agricultural Engineering, 1923 — D. C. 344
- Farm Forestry Extension, Early Development and Status in 1923 — D. C. 345
- Extension Work with Fruits, Vegetables, and Ornamentals, 1923 — D. C. 346
- Methods and Results of Cooperative Extension Work — D. C. 347
- Boys' and Girls' 4-H Club Work, 1923 — D. C. 348
- Extension Work in Foods and Nutrition, 1923 — D. C. 349
- Extension Work Among Negroes — D. C. 355
- An Extension Program in Home Management and Farm Management for the Western States, with Reports of Standing Regional Committees on Range Livestock, Dairying, Farm Crops, and Human Nutrition — D. C. 375
- Posters Prepared by School Children in Milk-for-Health Programs — M. C. 21
- Motion Pictures of Department of Agriculture, List of Films, and How to Obtain Them — M. C. 27

FLOWERS:
- Chrysanthemums for the Home — F. B. 1311
- Dahlias for the Home — F. B. 1370
- Herbaceous Perennials — F. B. 1381
- Production of Narcissus Bulbs — D. B. 1270
- Production of Grape-Hyacinth Bulbs — D. B. 1327
- The Madonna Lily — D. B. 1331

FORAGE CROPS:
- Red Clover Culture, with Notes on Insect Enemies of Red Clover — F. B. 1339
- Clover Failure — F. B. 1365
- Crimson Clover Seed Production — F. B. 1411
- Cultivated Grasses of Secondary Importance — F. B. 1433
- Effects of Different Systems and Intensities of Grazing upon Native Vegetation at the Northern Great Plains Field Station — D. B. 1170
- Hungarian Vetch — D. B. 1174
- Damage to Range Grasses by the Zuni Prairie Dog — D. B. 1227
- Forage Crops in Relation to Agriculture of Semiarid Portion of Northern Great Plains — D. B. 1244
- Common Vetch and Its Varieties — D. B. 1289
- Korean Lespedeza, New Forage Crop — D. C. 317
- Composition of Sugar-beet Pulp and Tops of Silage therefrom — D. C. 319
- United States Grades for Timothy Hayy, Clover Hay, Clover Mixed Hay, and Grass Mixed Hay, Effective February 1, 1924 — D. C. 326
- Hay and Feed Statistics, Year Ended December 31, 1924, with Comparable Data for Earlier Years — S. B. 11

FORESTRY AND TREES:
- Black Walnut for Timber and Nuts — F. B. 1392
- Idle Land and Costly Timber — F. B. 1417
- Growing and Planting Coniferous Trees on the Farm — F. B. 1453
- Selling Black Walnut Timber — F. B. 1459
- Some Results of Cutting in the Sierra Forests of California — D. B. 1176
- Natural Regeneration of Douglas Fir in Pacific Northwest — D. B. 1200
- Forest Types in Central Rocky Mountains as Affected by Climate and Soil — D. B. 1233
- How the United States Can Meet Its Present and Future Pulpwood Requirements — D. B. 1241
- Relative Resistance of Tree Seedlings to Excessive Heat — D. B. 1263
- Forest Planting in the Intermountain Region — D. B. 1264
- Aspen in Central Rocky Mountain Region — D. B. 1291
- Rolê of Fire in California Pine Forests — D. B. 1294
- Arbor Day — D. C. 265
- Slash Disposal in White Pine Forests of Idaho — D. C. 292
- Grading Rules for Structural Timbers — D. C. 295
- Grading Specifications for Yard Lumber — D. C. 296
- Purchase of Land for National Forests under Act of March 1, 1911, the Weeks' Law — D. C. 313
- National Forests of Arizona — D. C. 318
- French Turpentining System Applied to Longleaf Pine — D. C. 327
- Weather Conditions and Forest Fires in California — D. C. 354
- Fire and the Forest — D. C. 358
- Forest Fire Prevention Handbook for School Children of California — M. C. 7
- Demonstration Courses in Kiln Drying, Boxing and Crating, Gluing of Wood, Wood Properties and Uses — M. C. 8
- Importance of Forestry and National Forests — M. C. 15
- Tree Distribution Under the Kinkaid Act of 1911 — M. C. 16
- Forest Fires in Intermountain Region — M. C. 19
- Naval Stores Act, and Regulations for Its Enforcement, Effective March 1, 1924 — M. C. 22
- Demonstration Course in Wood Utilization — M. C. 29
- Let's Know Some Trees — M. C. 31
- Wichita National Forest and Game Preserve — M. C. 36
- Report of National Conference on Utilization of Forest Products, Washington, D. C., November 19 and 20, 1924 — M. C. 39
- Forest Fire Control — M. C. 44
- What the National Forests Mean to the Intermountain Regions — M. C. 47
- When Fire is Banished From the Land of the White Oak — M. C. 53

FRUIT AND TRUCK CROPS:
- Marketing Main-crop Potatoes — F. B. 1317
- Pruning Citrus Trees in the Southwest — F. B. 1333
- Tomatoes as a Truck Crop — F. B. 1338
- Culture of Citrus Fruits in the Gulf States — F. B. 1343
- Increasing the Potato Crop by Spraying — F. B. 1349
- Apple Growing East of the Mississippi River — F. B. 1360
- Bridge Grafting — F. B. 1369
- Plum and Prune Growing in the Pacific States — F. B. 1372
- Vegetable Seed for Home and Market Garden — F. B. 1390
- Watermelons — F. B. 1394
- The Dasheen, A Southern Root Crop for Home Use and Market — F. B. 1396
- Currants and Gooseberries, Their Culture and Relation to White Pine Blister Rust — F. B. 1398
- Blackberry Growing — F. B. 1399
- Establishing Cranberry Fields — F. B. 1400
- Managing Cranberry Fields — F. B. 1401
- Cranberry Harvesting and Handling — F. B. 1402
- Dewberry Growing — F. B. 1403
- Lettuce Growing in Greenhouses — F. B. 1418
- Preparation of Cabbage for Market — F. B. 1423
- Greenhouse Tomatoes — F. B. 1431
- Standard Baskets for Fruits and Vegetables — F. B. 1434
- Why Potatoes Run Out — F. B. 1436
- Storage of Sweet Potatoes — F. B. 1442
- Citrus Fruit Growing in the Southwest — F. B. 1447
- Home Utilization of Muscadine Grapes — F. B. 1454
- Packing Apples in Boxes — F. B. 1457
- Production of Sirup From Sweet Potatoes — D. B. 1158
- Coloring Satsuma Oranges in Alabama — D. B. 1159

FRUIT AND TRUCK CROPS—Continued.
Cultivation of True Yams in the Gulf Region ..... D. B. 1167
Costs and Farm Practices in Producing Potatoes on 461 Farms in Minnesota, Wisconsin, Michigan, New York, and Maine for the Crop Year 1919 ..... D. B. 1188
Fruits in West Virginia, Kentucky, and Tennessee ..... D. B. 1189
Sterilities of Wild and Cultivated Potatoes with Reference to Breeding from Seed ..... D. B. 1195
Marketing Southern-grown Sweet Potatoes ..... D. B. 1206
Chinese Jujube ..... D. B. 1215
Organization and Development of a Cooperative Citrus-fruit Marketing Agency ..... D. B. 1237
Marketing Cabbage ..... D. B. 1242
Taros and Yautias; Promising New Food Plants for the South ..... D. B. 1247
Size of Potato Sets, Comparisons of Whole and Cut Seed ..... D. B. 1248
Relation Between Composition of California Cantaloupes and their Commercial Maturity ..... D. B. 1250
Inheritance of Composition in Fruit through Vegetative Propagation, Bud Varieties of Eureka and Lisbon Lemons ..... D. B. 1255
Operating Methods and Expense of Cooperative Citrus Fruit Marketing Agencies ..... D. B. 1261
Marketing and Distribution of American-grown Bermuda Onions ..... D. B. 1283
Transportation of Citrus Fruit from Porto Rico ..... D. B. 1290
Citrus Pectin ..... D. B. 1323
Marketing Onions ..... D. B. 1325
Commercial Dehydration of Fruits and Vegetables ..... D. B. 1335
American Fruit and Produce Auctions ..... D. B. 1362
The Chayote, Its Culture and Uses ..... D. C. 286
Quarantine Procedure to Safeguard Introduction of Citrus Plants; System of Aseptic Plant Propagation ..... D. C. 299
Solar Propagating Frame for Rooting Citrus and Other Subtropical Plants ..... D. C. 310
Cabbage Seed Treatment ..... D. C. 311
Chilling of Tomatoes ..... D. C. 315
The Van Fleet Raspberry, New Hybrid Variety ..... D. C. 320
An Improved Type of Pressure Tester for the Determination of Fruit Maturity ..... D. C. 350
Shipments and Unloads of Certain Fruits and Vegetables, 1918–1923 ..... S. B. 7
Carload Shipments of Fruits and Melons From Stations in the United States for 1920, 1921, 1922, and 1923 ..... S. B. 8
Carload Shipments of Vegetables From Stations in the United States for 1920, 1921, 1922, 1923 ..... S. B. 9
Statistics of Potatoes and Sweet Potatoes, Year Ended July 31, 1924, with Comparable Data For Earlier Years ..... S. B. 10
GRAIN CROPS:
Growing Rye in Western Half of the United States ..... F. B. 1358
Handling Rough Rice to Produce High Grades ..... F. B. 1420
Emmer and Spelt ..... F. B. 1429
Polish and Poulard Wheats ..... F. B. 1340
More Profit for Wheat Farmers of Central Kansas ..... F. B. 1440
Barley: Culture, Uses, and Varieties ..... F. B. 1464
Cereal Experiments at Chico, Calif ..... D. B. 1172
Experiments in Wheat Production on the Dry Lands of Western United States ..... D. B. 1173
Grain Sorghum Experiments at the Woodward Field Station in Oklahoma ..... D. B. 1175
Milling and Baking Experiments with American Wheat Varieties ..... D. B. 1183
Experimental Milling and Baking, Including Chemical Determinations ..... D. B. 1187
Improvement of Kubanka Durum Wheat by Pure-line Selection ..... D. B. 1192
Experiments with Emmer, Spelt, and Einkorn ..... D. B. 1197
Cost of Producing Winter Wheat in Central Great Plains of United States ..... D. B. 1198
Effects of Selections on Yield of Cross Between Varieties of Corn ..... D. B. 1209
Sorghum Experiments on the Great Plains ..... D. B. 1260
Varietal Susceptibility of Oats to Loose and Covered Smuts ..... D. B. 1275
Varietal Experiments with Hard Red Winter Wheats in Dry Areas of Western United States ..... D. B. 1276
Experiments with Cereals at Akron (Colo.) Field Station in 15-Year Period, 1908 to 1922, Inclusive ..... D. B. 1287
Experiments with Small Grains on Arlington Experiment Farm ..... D. B. 1309
Statistical Study of Relation between Seed-ear Characters and Productiveness in Corn ..... D. B. 1321
Tests of Barley Varieties in America ..... D. B. 1334
Effects of Continuous Selection for Ear Type in Corn ..... D. B. 1341
Improved Oat Varieties for the Corn Belt ..... D. B. 1343
What Makes the Price of Oats ..... D. B. 1351
The Productiveness of Successive Generations of Self-fertilized Lines of Corn and of Crosses between Them ..... D. B. 1354
Experiments in Rice Production in Southwestern Louisiana ..... D. B. 1356
Kota Wheat ..... D. C. 286
United States Grades for Rough Rice ..... D. C. 290
United States Grades for Milled Rice ..... D. C. 291
Electrochemical Treatment of Seed Wheat ..... D. C. 305
Markton, Oat Variety Immune from Covered Smut ..... D. C. 324
Handling the Soft Corn Crop ..... D. C. 333
Improved Oat Varieties for New York and Adjacent States ..... D. C. 352
Estimating the Quantity of Grain in Bins, With Chart Reducing the Necessary Computations ..... M. C. 41
Grain Futures, Daily Data, Volume of Trading on Chicago Board of Trade, January 1, 1921, to May 31, 1924 ..... S. B. 6
HOME ECONOMICS:
Lamb and Mutton and their Use in the Diet ..... F. B. 1324
Carpet Beetles and their Control ..... F. B. 1346
Clothes Moths and their Control ..... F. B. 1353
Milk and Its Uses in the Home ..... F. B. 1359
Care of Food in the Home ..... F. B. 1374
Food Values and Body Needs, Shown Graphically ..... F. B. 1383
The Housefly and How to Suppress It ..... F. B. 1408
Making Vinegar in the Home and on the Farm ..... F. B. 1424
Making Fermented Pickles ..... F. B. 1438
Farmstead Water Supply ..... F. B. 1448

HOME ECONOMICS—Continued.
Home Baking ..... F. B. 1450
Making and Using Cottage Cheese in the Home ..... F. B. 1451
Simple Plumbing Repairs in the Home ..... F. B. 1460
Homemade Apple and Citrus Pectin Extracts ..... D. C. 254
Time-tables for Home Canning of Fruits and Vegetables ..... M. C. 24
LIVESTOCK AND DAIRYING:
Parasites and Parasitic Diseases of Sheep ..... F. B. 1330
Feeding and Managing Dairy Calves and Young Dairy Stock ..... F. B. 1336
Mule Production ..... F. B. 1341
Dairy Barn Construction ..... F. B. 1342
Beef-cattle Barns ..... F. B. 1350
Blackleg, Its Nature, Cause, and Prevention ..... F. B. 1355
Castration of Hogs ..... F. B. 1357
Brahaman (Zebu) Cattle ..... F. B. 1361
Breaking and Training Colts ..... F. B. 1368
Beef Production in the Cotton Belt ..... F. B. 1379
Fattenning Steers in the Corn Belt ..... F. B. 1382
Principles of Dairy Barn Ventilation ..... F. B. 1393
Care and Management of Dairy Bulls ..... F. B. 1412
Beef on the Farm, Slaughtering, Cutting, Curing ..... F. B. 1415
Fattening Beef Calves ..... F. B. 1416
Care and Management of Farm Work Horses ..... F. B. 1419
Saving Livestock from Starvation on Southwestern Ranges ..... F. B. 1428
Swine Production ..... F. B. 1437
Dairy Cattle Breeds ..... F. B. 1443
Cow-testing Associations and Stories the Records Tell ..... F. B. 1446
Fitting, Showing, and Judging Hogs ..... F. B. 1455
Accounting Records and Business Methods for Livestock Shipping Associations ..... D. B. 1150
Apple By-Products as Stock Foods ..... D. B. 1166
Manufacture of Camembert Cheese ..... D. B. 1171
Effect of Feeding Green Alfalfa and Green Corn on Flavor and Odor of Milk ..... D. B. 1190
Effect of Feeding Turnips on Flavor and Odor of Milk ..... D. B. 1208
Woolly-pod Milkweed (Asclepias Eriocarpa) as a Poisonous Plant ..... D. B. 1212
Horseflies, Biologies and Relation to Western Agriculture ..... D. B. 2118
Meadow Death Camas (Zygadenus venenosus) as a Poisonous Plant ..... D. B. 1240
Stock-poisoning Plants of the Range ..... D. B. 1245
Market Classes and Grades of Dressed Beef ..... D. B. 1246
Effect of Winter Rations on Pasture Gains of 2-Year-Old Steers ..... D. B. 1251
Values of Various New Feeds for Dairy Cows ..... D. B. 1272
Cocklebur as Poisonous Plants ..... D. B. 1274
Relative Utilization of Energy in Milk Production and Body Increase of Dairy Cows ..... D. B. 1281
Effect of Feeding Cabbage and Potatoes on Flavor and Odor of Milk ..... D. B. 1297
Steer Feeding in Sugar-cane Belt ..... D. B. 1318
Effect of Garlic on Flavor and Odor of Milk ..... D. B. 1326
Fattening Steers on Velvet Beans ..... D. B. 1333
Effect of Feeding Green Rye and Green Cowpeas on the Flavor and Odor of Milk ..... D. B. 1342
Effect of Various Factors on the Creaming Ability of Market Milk ..... D. B. 1344
Effect of Age and Development on Butterfat Production of Register-of-Merit Jersey and Advanced Register Guernsey Cattle ..... D. B. 1352
Utility Value of Purebred Livestock ..... D. C. 235
Inspection of Milk Supplies ..... D. C. 276
Greasewood as a Poisonous Plant ..... D. C. 279
Livestock Poisoning by Cocklebur ..... D. C. 283
Commercial Cuts of Meat ..... D. C. 300
Mycotic Stomatitis of Cattle ..... D. C. 322
Foot-and-Mouth Disease, with Special Reference to the Outbreak of 1914 ..... D. C. 325
Parasites and Parasitic Diseases of Dogs ..... D. C. 338
Handbook for Better Feeding of Livestock ..... M. C. 12
State Sanitary Requirements Governing Admission of Livestock ..... M. C. 14
The Cow Tester's Handbook ..... M. C. 26
Tested Methods for Livestock Improvement ..... M. C. 33
Cold Storage Holdings, Year Ending January, 1923, with Comparable Data for Earlier Years ..... S. B. 1
Sheep, Lamb, Mutton, and Wool Statistics, Year Ended March 31, 1923, with Comparable Data for Earlier Years ..... S. B. 3
Cold-storage Holdings to October, 1924 ..... S. B. 4
Horses, Mules, and Motor Vehicles, Year Ended March 31, 1924, with comparable data for Earlier Years ..... S. B. 5
MISCELLANEOUS:
Distribution of Types of Farming in the United States ..... F. B. 1289
Rural Planning, the Social Aspects ..... F. B. 1325
Home Tanning of Leather and Small Fur Skins ..... F. B. 1334
Corrugation Method of Irrigation ..... F. B. 1348
Yellow-fever Mosquito ..... F. B. 1354
Production of Maple Sirup and Sugar Production ..... F. B. 1366
Game Laws for the Season 1923–24 ..... F. B. 1375
Buying a Farm in an Undeveloped Region ..... F. B. 1385
Terracing Farm Lands ..... F. B. 1386
Laws Relating to Fur Animals for Season 1923–24 ..... F. B. 1387
Rural Planning, Social Aspects of Recreation Places ..... F. B. 1388
Sorgo Sirup Manufacture ..... F. B. 1389
Mouse Control in Field and Orchard ..... F. B. 1397
Pumping from Wells for Irrigation ..... F. B. 1404
The Windbreak as a Farm Asset ..... F. B. 1405
Successful Farming on 80-Acre Farms in Central Indiana ..... F. B. 1421
Farm Plumbing ..... F. B. 1426
Power for the Farm from Small Streams ..... F. B. 1430
Rural Planning, the Village ..... F. B. 1441
Game Laws for the Season, 1924–25 ..... F. B. 1444

MISCELLANEOUS—Continued.
Laws Relating to Fur Animals for the Season 1924–25 ..... F. B. 1445
Painting on the Farm ..... F. B. 1452
Successful Farming on 160-Acre Farms in Central Indiana ..... F. B. 1463
Game Laws for the Season 1925–26 ..... F. B. 1466
Laws Relating to Fur Animals for the Season 1925–26 ..... F. B. 1469
Lead-cable Borer or Short-circuit Beetle in California ..... D. B. 1107
Wearing Qualities of Shoe Leathers ..... D. B. 1168
Irrigation District Operation and Finance ..... D. B. 1177
Investigations of Manufacture of Phosphoric Acid by Volatilization Process ..... D. B. 1179
Field Experiments with Atmospheric Nitrogen Fertilizers ..... D. B. 1189
Labor Requirements of Arkansas Crops ..... D. B. 1181
Flax-stem Anatomy in Relation to Retting ..... D. B. 1185
Potash from Kelp, Early Development and Growth of Giant Kelp, Macrocystis Pyrifera ..... D. B. 1191
Estimation of Colloidal Material in Soils by Absorption ..... D. B. 1193
Chemical and Structural Study of Mesquite, Carob, and Honey Locust Beans ..... D. B. 1194
List of Bulletins of Agricultural Experiment Stations in the United States from their establishment to End of 1920 ..... D. B. 1199
Plants Tested for or Reported to Possess Insecticidal Properties ..... D. B. 1201
Tractors and Horses in Winter Wheat Belt, Oklahoma, Kansas, Nebraska ..... D. B. 1202
Experimentl Production of Straw Gas ..... D. B. 1203
Drainage District Assessments ..... D. B. 1207
Sources of Supply and Conditions of Employment of Harvest Labor in Wheat Belt ..... D. B. 1211
Digestibility of Raw Starches and Carbohydrates ..... D. B. 1213
Family Living in Farm Homes, Economic Study of 402 Farm Families in Livingston County, New York ..... D. B. 1214
Tentative Standard Methods of Sampling and Testing Highway Materials ..... D. B. 1216
Mixing Emulsified Mineral Lubricating Oils with Deep Well Waters and Lime-Sulphur Solutions ..... D. B. 1217
Farm Labor in Massachusetts, 1921 ..... D. B. 1220
Capillary Distribution of Moisture in Soil Columns of Small Cross Section ..... D. B. 1221
Relation of Land Income to Land Value ..... D. B. 1224
Recovery of Potash as a By-product in Blast-furnace Industry ..... D. B. 1226
Conditions Affecting Demand for Harvest Labor in Wheat Belt ..... D. B. 1230
Agricultural Survey of Europe: Danube Basin, part 1 ..... D. B. 1234
Farming Logged-off Uplands in Western Washington ..... D. B. 1236
Farm Motor Truck Operation in New England and Central Atlantic States ..... D. B. 1254
Land Reclamation Policies in the United States ..... D. B. 1257
Farm Organization and Management in Clinton County, Ind., Business Analysis of 100 Farms in Forest and Johnson Townships for Eight Years, 1910, and 1913–1919 ..... D. B. 1258
Standard Specifications for Steel Highway Bridges ..... D. B. 1259
Scalding, Precooking, and Chilling, as Preliminary Canning Operations ..... D. B. 1265
Agricultural Cooperation in Denmark ..... D. B. 1266
Relation of Land Tenure to Plantation Organization ..... D. B. 1269
Study of Farm Organization Southwestern Minnesota ..... D. B. 1271
Input as Related to Output in Farm Organization and Cost-of-Production Studies ..... D. B. 1277
Production of Henequen Fiber in Yucatan and Campeche ..... D. B. 1278
Rural Highway Mileage, Income, and Expenditures, 1921 and 1922 ..... D. B. 1279
Computation of Fertilizer Mixtures from Concentrated Materials ..... D. B. 1280
Almond Varieties in the United States ..... D. B. 1282
Truck Farm Labor in New Jersey, 1922 ..... D. B. 1285
Field and Crop Labor on Georgia Farms (Coastal Plain Area) ..... D. B. 1292
Tillage and Rotation Experiments at Dickinson, Hettinger, and Williston, N. Dak ..... D. B. 1293
Land Settlement and Colonization in Great Lakes States ..... D. B. 1295
Study of Farm Organization in Central Kansas ..... D. B. 1296
Corn and hay correlations ..... D. B. 1300
Report of Northern Great Plains, Field Station for 10-Year Period, 1913–1922, inclusive ..... D. B. 1301
Development and Present Status of Farmers' Cooperative Business Organizations ..... D. B. 1302
Crop Rotation and Cultural Methods at Akron (Colo.) Field Station ..... D. B. 1304
Utilization of Almonds for Various Food Products ..... D. B. 1305
Work of Sheridan Field Station for Seven Years from 1917 to 1923, Inclusive ..... D. B. 1306
Absorption and Retention of Hydrocyanic Acid by Fumigated Food Products, part 2 ..... D. B. 1307
Chemical and Physical Methods for Control of Saponified Cresol Solutions ..... D. B. 1308
Experiments with Fallow in North Central Montana ..... D. B. 1310
Chemical Composition of Soil Colloids ..... D. B. 1311
Loss of Nicotine From Nicotine Dusts During Storage ..... D. B. 1312
Bibliography Relating to Soil Alkalies ..... D. B. 1314
Dry Farming in Southeastern Wyoming ..... D. B. 1315
Retail Marketing of Meats ..... D. B. 1317
Some Economic Aspects of Farm Ownership ..... D. B. 1322
Bamboos, their Culture and Uses in the United States ..... D. B. 1329
Abbreviations Employed in Experiment Station Record for Titles of Periodicals ..... D. B. 1330
The Family Living from the Farm ..... D. B. 1338
Irrigation Requirements of the Arable Lands of the Great Basin ..... D. B. 1340
Saltbushes and their Allies in the United States ..... D. B. 1345
Status of the Pronghorned Antelope, 1922–1924 ..... D. B. 1346
An Appraisal of Power Used on Farms in the United States ..... D. B. 1348
Blue Fox Farming in Alaska ..... D. B. 1350
The Efficiency of a Short Type Refrigerator Car ..... D. B. 1353
Sugar-cane Sirup Manufacture ..... D. B. 1370
Work of Newlands Reclamation Project Experiment Farm 1920–21 ..... D. C. 267
Work of Huntley Reclamation Project Experiment Farm, 1921 ..... D. C. 275
Crop Tests at Sacaton, Ariz ..... D. C. 277
Puss Caterpillar and Effects of Its Sting on Man ..... D. C. 288
Work of Scottsbluff Experiment Farm, 1920 and 1921 ..... D. C. 289
Bat Mite Attacking Man ..... D. C. 294
United States Grades for Shelled White Spanish Peanuts ..... D. C. 304
Method of Testing Farm-management and Cost-of-production Data for Validity of Conclusions ..... D. C. 307

MISCELLANEOUS—Continued.
How to Collect, Label, and Pack Living Plant Material for Long Distance Shipment ..... D. C. 323
Work of the Huntley Reclamation Project Experiment Farm, 1922 ..... D. C. 330
Standard Specifications for Corrugated Metal Pipe Culverts ..... D. C. 331
Work of Belle Fourche Reclamation Experiment Farm, 1919–1922 ..... D. C. 339
Cost of Producing Field Crops, 1923 ..... D. C. 340
Seed Flax as a Farm Crop in 1925 ..... D. C. 341
Work of Umatilla Reclamation Project Experiment Farm, 1920, 1921, and 1922 ..... D. C. 342
Centralized Management of a Large Corporate Estate Operated by Tenants in the Wheat Belt ..... D. C. 351
Work of the Newlands Reclamation Project Experiment Farm, 1922 ..... D. C. 352
List of Workers in Subjects Pertaining to Agriculture, 1922–23, part 2, State Agricultural Colleges and Experiment Stations ..... M. C. 4
In the Land of the Ancient Cliff Dweller ..... M. C. 5
Crop and Livestock Estimates, 1910–1922 ..... M. C. 6
Importation and Exportation of Tea ..... M. C. 9
Grain Futures Act, 1922 ..... M. C. 10
Agricultural Cooperation, a List with Special Reference to Purchasing, Marketing, and Credit ..... M. C. 11
List of Workers in Subjects Pertaining to Agriculture, part 2, State Agricultural Colleges and Experiment Stations, 1923–24 ..... M. C. 17
Crop Report Regulations, Effective on and After January 1, 1924 ..... M. C. 20
Agricultural Outlook for 1924 ..... M. C. 23
Tables for Converting Crude Protein and Ash Content to Uniform Moisture Base ..... M. C. 28
Directory of Field Activities of Bureau of Plant Industry ..... M. C. 30
Practical Farm Economics ..... M. C. 32
List of Workers in Subjects Pertaining to Agriculture in State Agricultural Colleges and Experiment Stations, 1924–25 ..... M. C. 34
Bibliography on Marketing of Agricultural Products ..... M. C. 35
Crop Report Regulations, Effective January 1, 1925 ..... M. C. 37
Agricultural Outlook for 1925 ..... M. C. 38
List of Technical Workers in the United States Department of Agriculture, 1924–25 ..... M. C. 45
Certification of Coal-tar Food Colors ..... M. C. 52
Efficient Methods of Retailing Meat ..... M. C. 54
Seed Statistics, Year Ending May 31, 1923, with Comparable Data for Earlier Years ..... S. B. 2

PLANT DISEASES:
Root-knot, Its Cause and Control ..... F. B. 1345
Cabbage Diseases ..... F. B. 1351
Control of Potato Tuber Diseases ..... F. B. 1367
Diseases and Insects of Garden Vegetables ..... F. B. 1371
Apple Scald and Its Control ..... F. B. 1380
Control of Brown-rot of Prunes and Cherries in the Pacific Northwest ..... F. B. 1410
Rosette Disease of Wheat and Its Control ..... F. B. 1414
Disease of Stone Fruits on the Market ..... F. B. 1435
Strawberry Diseases ..... F. B. 1453
Rôle of the Genus Rhamnus in the Dissemination of Crown Rust ..... D. B. 1162
Study of Decay in Douglas Fir in the Pacific Northwest ..... D. B. 1163
Bordeaux Oil Emulsion ..... D. B. 1178
White Pine Blister Rust in Western Europe ..... D. B. 1186
Summary of Literature on Bunt, or Stinking Smut, of Wheat ..... D. B. 1210
Studies in Physiology and Control of Bunt, or Stinking Smut, of Wheat ..... D. B. 1239
Prune and Cherry Brown Rot Investigations in the Pacific Northwest ..... D. B. 1252
Diseases of Apples on the Market ..... D. B. 1253
Tobacco Diseases and their Control ..... D. B. 1256
Effect of Kiln Drying, Steaming, and Air Seasoning on Certain Fungi in Wood ..... D. B. 1262
Sorghum Smuts and Varietal Resistance in Sorghums ..... D. B. 1284
South American Leaf Disease of Para Rubber ..... D. B. 1286
Control of Tomato Leaf Spot ..... D. B. 1288
Control of Decay in Pulp and Pulpwood ..... D. B. 1298
Relative Resistance of Wheat to Bunt in Pacific Coast States ..... D. B. 1299
Some Effects of Sodium Arsenite when Used to Kill the Common Barberry ..... D. B. 1316
Foot-rot Diseases of Wheat in America ..... D. B. 1347
A Mosaic Disease of Winter Wheat and Winter Rye ..... D. B. 1361
Commercial Control of Citrus Melanose ..... D. C. 259
Flag Smut of Wheat ..... D. C. 273
Potato Brown Rot ..... D. C. 281
Commercial Control of Citrus Stem-end Rot ..... D. C. 293
Eelworm Disease: A Menace to Alfalfa in America ..... D. C. 297
Spraying Strawberries for the Control of Fruit Rots ..... D. C. 309
Control of Cucumber Mosaic in the Greenhouse ..... D. C. 321
Chemical Eradication of the Common Barberry ..... D. C. 332
The Common Barberry and How to Kill It ..... D. C. 356
White Pine is Profitable if Protected from Blister Rust ..... M. C. 40

PLANT INSECTS:
Fumigation of Citrus Trees for Control of Insect Pests ..... F. B. 1321
Wheat Straw Worm and Its Control ..... F. B. 1323
Control of Codling Moth in the Pacific Northwest ..... F. B. 1326
Boll-weevil Problem ..... F. B. 1329
Controlling the Gipsy Moth and Brown-tail Moth ..... F. B. 1335
Strawberry Rootworm as an Enemy of the Greenhouse Rose ..... F. B. 1344
Tobacco Flea Beetle in Southern Cigar Wrapper District ..... F. B. 1352
Tobacco Hornworm Insecticide, Recommendations for Use of Powdered Arsenate of Lead in Dark Tobacco District ..... F. B. 1356
Insects Injurious to Ornamental Greenhouse Plants ..... F. B. 1362
Important Pecan Insects and their Control ..... F. B. 1364
The Mexican Bean Beetle in the East ..... F. B. 1407
Tobacco Flea Beetle in the Dark Fire-cured Tobacco Districts of Kentucky and Tennessee ..... F. B. 1425
Further Studies with Paradichlorobenzene for Peach Borer Control, with Special Reference to Its Use on Young Peach Trees ..... D. B. 1169

PLANT INSECTS—Continued.
Imported Pine Sawfly ..... D. B. 1182
Dusting Cotton from Airplanes ..... D. B. 1204
Dusting and Spraying Peach Trees after Harvest for Control of the Plum Curculio ..... D. B. 1205
European Elm Scale in the West ..... D. B. 1223
Camphor Thrips ..... D. B. 1225
Stem Nematode Tylenchus Dipsaci on Wild Hosts in the Northwest ..... D. B. 1229
Tests of Methods of Protecting Woods Against Termites or White Ants ..... D. B. 1231
Damage by Termites in the Canal Zone and Panama and How to Prevent It ..... D. B. 1232
Life History of Codling Moth in the Yakima Valley of Washington ..... D. B. 1235
Cankerworms ..... D. B. 1238
Studies of the Mexican Bean Beetle in the Southeast ..... D. B. 1243
Rough-headed Corn Stalk Beetle ..... D. B. 1267
The Bud Moth ..... D. B. 1273
Pecan Nut Case-bearer ..... D. B. 1303
Fumigation against Grain Weevils with Various Volatile Organic Compounds ..... D. B. 1313
Behavior of Cotton Planted at Different Dates in Weevil Control Experiments in Texas and South Carolina ..... D. B. 1320
Oviposition Response of Insects ..... D. B. 1324
Emulsions of Wormseed Oil and of Carbon Disulfide for Destroying Larvae of the Japanese Beetle in Roots of Perennial Plants ..... D. B. 1332
Biological Studies of the Green Clover Worm ..... D. B. 1336
Australian Tomato Weevil Introduced in the South ..... D. C. 282
Introduction of Parasites of Alfalfa Weevil into United States ..... D. C. 301
Hot Water Treatment of Sugar Cane for Insect Pests ..... D. C. 303
Hot Water Treatment of Dormant and Sprouted Seed Cane ..... D. C. 337
A Bibliography of the European Corn Borer ..... M. C. 46
POULTRY:
Backyard Poultry Keeping ..... F. B. 1331
Diseases of Poultry ..... F. B. 1337
Standard Varieties of Chickens: 1. The American Class ..... F. B. 1347
Natural and Artificial Incuabtion of Hens' Eggs ..... F. B. 1363
Natural and Artificial Brooding of Chickens ..... F. B. 1376
Marketing Poultry ..... F. B. 1377
Marketing Eggs ..... F. B. 1378
The Guinea Fowl ..... F. B. 1391
Turkey Raising ..... F. B. 1409
Poultry House Construction ..... F. B. 1413
Poultry Accounts ..... F. B. 1427
Results of Experiments with Miscellaneous Substances against the Chicken Mite ..... D. B. 1228
How to Pick Chickens ..... M. C. 42

List of Land-Grant Colleges in the United States

May, 1926

This list includes all colleges of agriculture and mechanic arts receiving the benefits of the acts of Congress of July 2, 1862, and August 30, 1890. Those marked with an asterisk (*) do not maintain courses of instruction in agriculture.

State or Territory	Name of institution and location	President [1]
ALABAMA	Alabama Polytechnic Institute, Auburn	Spright Dowell.
	Agricultural and Mechanical Institute for Negroes, Normal	T. R. Parker.
ALASKA	Alaska Agricultural College and School of Mines, Fairbanks	C. E. Bunnell.
ARIZONA	College of Agriculture of University of Arizona, Tucson	J. J. Thornber. [3]
ARKANSAS	College of Agriculture of University of Arkansas, Fayetteville	D. T. Gray. [2]
	State Agricultural, Mechanical and Normal School, Pine Bluff	R. E. Malone. [3]
CALIFORNIA	College of Agriculture of University of California, Berkeley	E. D. Merrill. [2]
COLORADO	State Agricultural College of Colorado, Fort Collins	C. A. Lory.
CONNECTICUT	Connecticut Agricultural College, Storrs	C. L. Beach.
DELAWARE	School of Agriculture, University of Delaware, Newark	C. A. McCue. [2]
	State College for Colored Students, Dover	R. S. Grossley.
FLORIDA	College of Agriculture of University of Florida, Gainesville	Wilmon Newell. [2]
	Florida Agricultural and Mechanical College for Negroes, Tallahassee.	J. R. E. Lee.
GEORGIA	Georgia State College of Agriculture, Athens	A. M. Soule.
	Georgia State Industrial College, Savannah	C. G. Wiley.
HAWAII	University of Hawaii, Honolulu	A. L. Dean. *
IDAHO	College of Agriculture of University of Idaho, Moscow	E. J. Iddings. [2]
ILLINOIS	College of Agriculture of University of Illinois, Urbana	H. W. Mumford. [2]
INDIANA	School of Agriculture of Purdue University, LaFayette	J. H. Skinner. [2]
IOWA	Iowa State College of Agricultural and Mechanical Arts, Ames	R. A. Pearson.
KANSAS	Kansas State Agricultural College, Manhattan	F. D. Farrell.
KENTUCKY	College of Agriculture of University of Kentucky, Lexington	T. P. Cooper. [2]
	Kentucky Normal and Industrial Institute for Colored Persons, Frankfort.	G. P. Russell.
LOUISIANA	Louisiana State University and Agricultural and Mechanical College, Baton Rouge.	T. D. Boyd.
	Southern University and Agricultural and Mechanical College, Scotlandville.	J. S. Clark.

[1] The name of the dean of the college of agriculture is given where that college is a part of a university.
[2] Dean.
[3] Superintendent.

List of Land-Grant Colleges in the United States—Continued

State or Territory	Name of institution and location	President
MAINE	College of Agriculture of University of Maine, Orono	L. S. Merrill.[3]
MARYLAND	University of Maryland, College Park	A. F. Woods.
	Princess Anne Academy, Princess Anne	T. H. Kiah.[4]
MASSACHUSETTS	Massachusetts Agricultural College, Amherst	E. M. Lewis.[5]
	*Massachusetts Institute of Technology, Cambridge	S. W. Stratton.
MICHIGAN	Michigan State College of Agriculture and Applied Science, East Lansing.	K. L. Butterfield.
MINNESOTA	Department of Agriculture of the University of Minnesota, University Farm, St. Paul.	W. C. Coffey.[3]
MISSISSIPPI	Mississippi Agricultural and Mechanical College, A. & M. College.	B. M. Walker.
	Alcorn Agricultural and Mechanical College, Alcorn	L. J. Rowan.
MISSOURI	College of Agriculture of University of Missouri, Columbia	F. B. Mumford.[3]
	*School of Mines and Metallurgy of University of Missouri, Rolla.	A. L. McRae.[5]
	Lincoln University, Jefferson City	N. B. Young.
MONTANA	Montana State College of Agricultural and Mechanical Arts, Bozeman.	Alfred Atkinson.
NEBRASKA	College of Agriculture of University of Nebraska, Lincoln	E. A. Burnett.[3]
NEVADA	College of Agriculture of University of Nevada, Reno	Robert Stewart.[3]
NEW HAMPSHIRE	The University of New Hampshire, Durham	R. D. Hetzel.
NEW JERSEY	State College of Agricultural and Mechanical Arts of Rutgers University and State University of New Jersey, New Brunswick.	J. G. Lipman.[3]
NEW MEXICO	New Mexico College of Agricultural and Mechanical Arts, State College.	H. L. Kent.
NEW YORK	New York State College of Agriculture, Ithaca	A. R. Mann.[3]
NORTH CAROLINA	North Carolina State College of Agriculture and Engineering, State College Station, Raleigh.	E. C. Brooks.
	Negro Agricultural and Technical College, Greensboro	F. D. Bluford.
NORTH DAKOTA	North Dakota Agricultural College, State College Station, Fargo	J. L. Coulter.
OHIO	College of Agriculture of Ohio State University, Columbus	Alfred Vivian.[3]
OKLAHOMA	Oklahoma Agricultural and Mechanical College, Stillwater	Bradford Knapp.
	Colored Agricultural and Normal University, Langston	I. W. Young.
OREGON	Oregon Agricultural College, Corvallis	W. J. Kerr.
PENNSYLVANIA	School of Agriculture of Pennsylvania State College, State College.	R. L. Watts.[3]
PORTO RICO	College of Agricultural and Mechanical Arts of University of Porto Rico, Mayaguez.	C. E. Horne.[3]
RHODE ISLAND	Rhode Island State College, Kingston	Howard Edwards.
SOUTH CAROLINA	Clemson Agricultural College of South Carolina, Clemson College.	E. W. Sikes.
	The Colored Normal, Industrial, Agricultural and Mechanical College of South Carolina, Orangeburg.	R. S. Wilkinson.
SOUTH DAKOTA	South Dakota State College of Agricultural and Mechanical Arts, Brookings.	C. W. Pugsley.
TENNESSEE	College of Agriculture of University of Tennessee, Knoxville	C. A. Willson.[3]
	Tennessee Agricultural and Industrial State Normal School, Nashville.	W. J. Hale.
TEXAS	Agricultural and Mechanical College of Texas, College Station	T. O. Walton.
	Prairie View State Normal and Industrial College, Prairie View	P. E. Bledsoe.[4]
UTAH	Agricultural College of Utah, Logan	E. G. Peterson.
VERMONT	College of Agriculture of University of Vermont, Burlington	J. L. Hills.[3]
VIRGINIA	Virginia Agricultural and Mechanical College and Polytechnic Institute, Blacksburg.	J. A. Burruss.
	Virginia Normal and Industrial Institute, Ettricks	J. M. Gandy.
WASHINGTON	State College of Washington, Pullman	E. O. Holland.
WEST VIRGINIA	College of Agriculture of West Virginia University, Morgantown	G. R. Lyman.[3]
	West Virginia Collegiate Institute, Institute	J. W. Davis.
WISCONSIN	College of Agriculture of University of Wisconsin, Madison	H. L. Russell.[3]
WYOMING	College of Agriculture of University of Wyoming, Laramie	J. A. Hill.[3]

[3] Dean.
[4] Principal.
[5] Acting president.
[6] Director.

List of Agricultural Experiment Stations in the United States

May, 1926

This list gives the post-office addresses of the agricultural experiment stations in the United States, followed by the name of the director or other officer in charge:

ALABAMA—
(College station), Auburn: M. J. Funchess.
(Canebrake station), Uniontown: W. A. Cammack.
(Tuskegee station), Tuskegee Institute: G. W. Carver.
ALASKA—Sitka: C. C. Georgeson.
ARIZONA—Tucson: J. J. Thornber.
ARKANSAS—Fayetteville: D. T. Gray.
CALIFORNIA—Berkeley: E. D. Merrill.
COLORADO—Fort Collins: C. P. Gillette.
CONNECTICUT—
State station, New Haven:
Storrs station, Storrs: } W. L. Slate, Jr.
DELAWARE—Newark: C. A. McCue.
FLORIDA—Gainesville: Wilmon Newell.
GEORGIA—
(State station), Experiment: H. P. Stuckey.
Coastal Plain station), Tifton: S. H. Starr.
GUAM, ISLAND OF—Guam: C. W. Edwards.
HAWAII—
(Federal station), Honolulu: J. M. Westgate.
(Sugar Planters' station), Honolulu: H. P. Agee.
IDAHO—Moscow: E. J. Iddings.
ILLINOIS—Urbana: H. W. Mumford.
INDIANA—La Fayette: G. I. Christie.
IOWA—Ames: C. F. Curtiss.
KANSAS—Manhattan: L. E. Call.
KENTUCKY—Lexington: T. P. Cooper.
LOUISIANA—
State station, University Station, Baton Rouge:
Sugar station, Baton Rouge:
North Louisiana station, Calhoun: } W. R. Dodson.
Rice station, Crowley:
Fruit and Truck station, Hammond:
MAINE—Orono: W. J. Morse.
MARYLAND—College Park: H. J. Patterson.
MASSACHUSETTS—Amherst: S. B. Haskell.
MICHIGAN—East Lansing: R. S. Shaw.
MINNESOTA—University Farm, St. Paul: W. C. Coffey.
MISSISSIPPI—A. and M. College: J. R. Ricks.
MISSOURI—
(College station), Columbia: F. B. Mumford.
(Fruit station), Mountain Grove: F. W. Faurot.
(Poultry station), Mountain Grove: T. W. Noland.
MONTANA—Bozeman: F. B. Linfield.
NEBRASKA—Lincoln: E. A. Burnett.
NEVADA—Reno: S. B. Doten.
NEW HAMPSHIRE—Durham: J. C. Kendall.
NEW JERSEY—New Brunswick: J. G. Lipman.
NEW MEXICO State College: Fabian Garcia.
NEW YORK—
State station, Geneva:
Cornell station, Ithaca: } R. W. Thatcher.
NORTH CAROLINA—State College Station, Raleigh: R. Y. Winters.
NORTH DAKOTA—State College Station, Fargo: P. F. Trowbridge.
OHIO—Wooster: C. G. Williams.
OKLAHOMA—Stillwater: C. T. Dowell.
OREGON—Corvallis: J. T. Jardine.
PENNSYLVANIA—
(College station), State College: R. L. Watts.
(Institute of Animal Nutrition), State College: E. B. Forbes.
PORTO RICO—
(Federal station), Mayaguez: D. W. May.
(Insular station), Rio Piedras: R. M. Ramos.
RHODE ISLAND—Kingston: B. L. Hartwell.
SOUTH CAROLINA—Clemson College: H. W. Barre.
SOUTH DAKOTA—Brookings: J. W. Wilson.
TENNESSEE—Knoxville: C. A. Mooers.
TEXAS—College Station: B. Youngblood.
UTAH—Logan: William Peterson.
VERMONT—Burlington: J. L. Hills.
VIRGINIA—
(College station), Blacksburg: A. W. Drinkard, Jr.
(Truck station), Norfolk: T. C. Johnson.
VIRGIN ISLANDS, U. S. A.—St. Croix: J. B. Thompson.
WASHINGTON—
(College station), Pullman: E. C. Johnson.
(Western Washington station), Puyallup: W. A. Linklater.[1]
WEST VIRGINIA—Morgantown: H. G. Knight.
WISCONSIN—Madison: H. L. Russell.
WYOMING—Laramie: J. A. Hill.

[1] Superintendent.

National Forests

June 30, 1925

Forest	State in which located	Net area
		Acres
Absaroka	Montana	841,086
Alabama	Alabama	105,054
Allegheny	Pennsylvania	103,285
Angeles	California	829,499
Apache	Arizona and New Mexico.	1,564,218
Arapaho	Colorado	635,900
Arkansas	Arkansas	663,378
Ashley	Utah and Wyoming	986,199
Beartooth	Montana	659,919
Beaverhead	do	1,339,273
Benning	Georgia	78,560
Bighorn	Wyoming	1,125,632
Bitterroot	Montana	1,047,071
Blackfeet	do	836,967
Black Hills	South Dakota and Wyoming.	626,441
Boise	Idaho	1,032,693
Cabinet	Montana	829,077
Cache	Idaho and Utah	776,952
California	California	820,105
Caribou	Idaho and Wyoming	704,569
Carson	New Mexico	1,067,092
Cascade	Oregon	1,023,510
Challis	Idaho	1,253,519
Chelan	Washington	1,835,855
Cherokee	Georgia, North Carolina, and Tennessee.	211,824
Chugach	Alaska	4,792,060
Clearwater	Idaho	785,376
Cleveland	California	549,575
Cochetopa	Colorado	908,787
Coconino	Arizona	1,716,896
Coeur d'Alene	Idaho	661,692
Colorado	Colorado	828,403
Columbia	Washington	764,926
Colville	do	746,135
Coronado	Arizona and New Mexico.	1,461,429
Crater	California and Oregon.	853,267
Crook	Arizona	1,398,814
Custer	Montana and South Dakota.	590,703
Datil	New Mexico	1,754,161
Deerlodge	Montana	829,158
Deschutes	Oregon	1,294,743
Dix	New Jersey	6,785
Divide	Nevada and Utah	852,208
Eldorado	California and Nevada.	552,918
Enstis	Virginia	4,220
Fishlake	Utah	1,362,600
Flathead	Montana	1,721,478
Florida	Florida	342,771
Fremont	Oregon	849,284
Gallatin	Montana	575,189
Gila	New Mexico	1,596,215
Grand Mesa	Colorado	659,264
Gunnison	do	905,156
Harney	South Dakota	568,701
Hayden	Colorado and Wyoming.	393,893
Helena	Montana	684,291
Holy Cross	Colorado	1,124,329
Humboldt	Nevada	1,324,170
Humphreys	Virginia	3,184
Idaho	Idaho	1,856,722
Inyo	California and Nevada.	1,697,126
Jackson	South Carolina	20,225
Jefferson	Montana	1,040,636
Kaibab	Arizona	769,894
Kaniksu	Idaho and Washington.	444,481
Klamath	California and Oregon.	1,533,980
Knox	Kentucky	22,660
Kootenai	Montana	1,331,543
La Sal	Colorado and Utah	330,922
Lassen	California	886,366
Leadville	Colorado	927,444
Lemhi	Idaho	1,354,747
Lee	Virginia	7,177
Lewis and Clark	Montana	810,731
Lincoln	New Mexico	1,114,127
Lolo	Montana	850,677
Luquillo	Porto Rico	12,443
Madison	Montana	931,020
Malheur	Oregon	1,048,666
Manti	Utah	723,897
Manzano	New Mexico	668,051
McClellan	Alabama	15,350
Meade	Maryland	4,725
Medicine Bow	Wyoming	550,911
Michigan	Michigan	126,762
Minidoka	Idaho and Utah	591,199
Minnesota	Minnesota	190,945
Missoula	Montana	1,030,257
Modoc	California	1,462,532
Mono	California and Nevada.	1,259,888
Monongahela	Virginia and West Virginia.	170,902
Montezuma	Colorado	696,583
Mount Baker	Washington	1,460,697
Mount Hood	Oregon	1,058,879
Nantahala	Georgia, North Carolina, and South Carolina.	226,086
Natural Bridge	Virginia	142,721
Nebraska	Nebraska	205,945
Nevada	Nevada	1,175,222
Nezperce	Idaho	1,058,759
Ochoco	Oregon	717,904
Olympic	Washington	1,530,867
Ozark	Arkansas	299,909
Payette	Idaho	1,204,150
Pend Oreille	do	674,579
Pike	Colorado	1,084,936
Pine Plains	New York	9,800
Pisgah	North Carolina and Tennessee.	268,124
Plumas	California	1,109,864
Powell	Utah	1,050,462
Prescott	Arizona	1,164,968
Ranier	Washington	1,276,954
Rio Grande	Colorado	1,135,778
Routt	do	748,558
Salmon	Idaho	1,664,026
San Isabel	Colorado	598,936
San Juan	do	1,239,361
Santa Barbara	California	2,022,126
Santa Fe	New Mexico	1,270,150
Santiam	Oregon	610,918
Savanna	Illinois	10,710
Sawtooth	Idaho	1,158,259
Selway	do	1,089,157
Sequoia	California	1,450,484
Shasta	do	853,786
Shenandoah	Virginia and West Virginia.	302,387
Shoshone	Wyoming	1,583,986
Sierra	California	1,493,400
Siskiyou	California and Oregon.	1,362,167
Sitgreaves	Arizona	639,635
Siuslaw	Oregon	547,436
Snoqualmie	Washington	689,574
Stanislaus	California	810,657
St. Joe	Idaho	551,170
Superior	Minnesota	800,161
Tahoe	California and Nevada.	514,159
Targhee	Idaho and Wyoming	1,376,417

National Forests—Continued

Forest	State in which located	Net area	Forest	State in which located	Net area
		Acres			*Acres*
Teton	Wyoming	1,880,812	Uncompahgre	Colorado	778,341
Tobyhanna	Pennsylvania	20,870	Upton	New York	6,154
Toiyabe	Nevada	1,882,659	Wallowa	Oregon	957,240
Tongass	Alaska	16,542,214	Wasatch	Utah	608,261
Tonto	Arizona	2,259,865	Washakie	Wyoming	860,326
Trinity	California	1,410,027	Weiser	Idaho	565,945
Tusayan	Arizona	1,271,170	Wenatchee	Washington	838,184
Uinta	Utah	1,076,978	White River	Colorado	884,974
Umatilla	Oregon and Washington.	1,228,900	Whitman	Oregon	1,319,035
			White Mountain	Maine and New Hampshire.	439,508
Umpqua	Oregon	1,009,687	Wichita	Oklahoma	61,480
Unaka	North Carolina, Tennessee, and Virginia.	152,195	Wyoming	Wyoming	1,667,549

Federal Game and Bird Refuges

DEPARTMENT OF AGRICULTURE

Designation	Acres	Game and birds on refuge
Bureau of biological survey		
ALABAMA: Petit Bois island.	635	Sea birds.
ALASKA:		
Aleutian Islands		Do.
Bering Sea		Do.
Bogoslof		Do.
Chamisso Island		Do.
Forrester Island		Do.
Hazy Islands		Do.
St. Lazaria		Do.
Tuxedni		Do.
Yukon Delta		Do.
ARIZONA: Salt River.	21,120	White pelicans, cormorants, waterfowl, waders.
ARKANSAS:		
Big Lake	7,774	Waterfowl.
Walker Lake	15	Waders.
CALIFORNIA:		
Clear Lake	33,840	Waterfowl, waders, cormorants.
Farallon		Sea birds.
FLORIDA:		
Caloosahatchee		Waders.
Indian Key	90	Sea birds, waders.
Island Bay		Waders.
Key West		Sea birds.
Matlacha Pass		Waders.
Mosquito Inlet		Waders, pelicans, ducks.
Palma Sola		Waders.
Passage Key	37	Sea birds, waders.
Pelican Island	6	Brown pelicans, shorebirds.
Pine Island		Shorebirds, waders.
Tortugas Keys	141	Sea birds.
HAWAII: Hawaiian Islands.		Do.
IDAHO:		
Deer Flat	12,360	Waterfowl, waders.
Minidoka	13,240	Waterfowl, waders, shorebirds.
LOUISIANA:		
Breton Island		Sea birds.
East Timbalier	63	Do.
Shell Keys		Do.
Tern Islands		Do.
Bureau of biological survey—Continued		
MICHIGAN:		
Huron Islands	83	Sea birds.
Siskiwit Islands.	9	Do.
MINNESOTA: Mille Lacs.	7	Do.
MONTANA:		
Montana National Bison range.	18,522	Buffalo, 390; elk, 275; antelope, 57; deer, 69; grouse, ring-necked pheasants, ducks.
Nine pipe		Waterfowl.
Pablo		Do.
Pishkun	3,160	Do.
Willow Creek	3,200	Do.
NEBRASKA:		
Niobrara	16,125	Buffalo, 37; elk, 50; deer, 1; pinnated and sharp-tailed grouse.
North Platte	5,107	Waterfowl, waders.
NEVADA: Anaho Islands.	248	White pelicans, cormorants, gulls.
NEW MEXICO:		
Carlsbad	18,680	Waterfowl, waders.
Rio Grande	55,680	Do.
NORTH DAKOTA:		
Chase Lake	2,839	Waterfowl, white pelicans, gulls, terns, waders, shore birds.
Stump Lake	28	Same as on Chase Lake.
Sullys Hill National Game Preserve.	700	Buffalo, 10; elk, 44; deer, 3; sharp-tailed and pinnated grouse, ring-necked pheasants.
OREGON:		
Cold Springs	2,520	Waterfowl.
Klamath Lake	81,619	Waterfowl, pelicans, gulls, waders, shore birds.
Lake Malheur	88,960	Same as Klamath Lake.
Three Arch Rocks.		Sea birds.

Federal Game and Bird Refuges—Continued

DEPARTMENT OF AGRICULTURE—Continued.

Designation	Acres	Game and birds on refuge
Bureau of biological survey—Continued		
PORTO RICO:		
Culebra	----------	Sea birds, nongame birds.
Desecheo Island.	----------	Do.
SOUTH DAKOTA:		
Belle Fourche	13,680	Waterfowl, waders.
Wind Cave National Game Preserve.	4,160	Buffalo, 72; elk, 150; deer, 2; antelope, 24; grouse.
UTAH: Strawberry Valley.	8,560	Waterfowl.
WASHINGTON:		
Conconully	1,120	Do.
Copalis Rock	5	Sea birds.
Dungeness Spit	227	Sea birds, waterfowl.
Ediz Hook	84	Waterfowl.
Flattery Rocks	68	Sea birds.
Smith Island	----------	Waterfowl
Quillayute Needles.	117	Sea birds.
WISCONSIN:		
Gravel Island (Lake Michigan).	----------	Gulls.
Green Bay	----------	Do.

Designation	Acres	Game and birds on refuge
Bureau of biological survey—Continued		
WYOMING:		
Elk Refuge	2,760	Elk (in winter), ducks, sage grouse.
Pathfinder	35,120	Waterfowl.
Shoshone	10,040	Do.
Flat Creek	40	Do.
Forest Service		
ARIZONA: Grand Canyon Game Preserve.	613,120	Deer, mountain sheep, grouse.
NORTH CAROLINA Pisgah Game Preserve.	77,045	Buffalo, elk, deer, turkeys, quail.
OKLAHOMA: Wichita National Game Preserve.	57,120	Buffalo, elk, deer, antelope, turkeys, quail.
SOUTH DAKOTA: Custer State Park Game Sanctuary.	26,640	Deer, blue and ruffed grouse.
WASHINGTON: Mount Olympus National Monument.	299,370	Olympic elk, deer, bear, grouse.

DEPARTMENT OF COMMERCE

Bureau of Fisheries		
ALASKA:		
Afognak Forest and Fish Cultural Reserve.	512,000	Sea otters.
Pribilof Islands Reservation.	49,000	Fur seals, sea lions, sea birds.
Bureau of Lighthouses		
CALIFORNIA:		
Ano Nuevo Island Lighthouse Reservation.		

Bureau of Lighthouses—Continued		
CALIFORNIA—Con.		
South Farallon Island Lighthouse Reservation.	120	Auklets, guillemots, cormorants, petrels, gulls, puffins.
LOUISIANA: Chandeleur Lighthouse Reservation.	5,000	Gulls, terns, skimmers, pelicans, willet.
WASHINGTON:		
New Dungeness Lighthouse Reservation.	190	Sea birds.
Smith Island Lighthouse Reservation.	5,600	Sea birds, geese, brant.

DEPARTMENT OF THE INTERIOR

National Park Service[1]		
ALASKA:		
Katmai National Monument.	1,080,000	Brown bears, foxes, waterfowl.
Mount McKinley National Park.	1,498,000	Sheep 800, caribou numerous, moose very numerous, bears, grouse.
ARIZONA:		
Grand Canyon National Park.	613,120	Sheep, deer, beavers, grouse.

National Park Service—Continued		
ARIZONA—Contd.		
Papago Saguaro National Monument.	2,050	Nongame birds.
Petrified Forest National Monument.	25,625	Do.
CALIFORNIA:		
General Grant National Park.	2,536	Deer, bears, grouse, quail

[1] There are many national monuments under the National Park Service on which wild animals and birds are protected, in addition to those listed, which are not especially adapted for game refuges, as follows: Sitka, Montezuma, Tumacacori, Casa Grande, Navajo, Lewis and Clark, Scotts Bluff, El Morro, Chaco Canyon, Gran Quivera, Capulin Mountain, Verendrye, Natural Bridge, Rainbow, Dinosaur, and Devils Tower.

Federal Game and Bird Refuges—Continued

DEPARTMENT OF THE INTERIOR—Continued

Designation	Acres	Game and birds on refuge
National Park Service—Contd.		
CALIFORNIA—Con.		
Lassen Volcanic National Park.	79,562	Deer, bears, grouse, quail.
Muir Woods National Monument.	424	Nongame birds.
Sequoia National Park.	161,597	Elk, bears, deer, grouse, quail.
Yosemite National Park.	719,622	Deer, bears, grouse, quail.
COLORADO:		
Colorado National Monument.	13,883	Deer.
Mesa Verde National Park.	46,937	Elk, deer.
Rocky Mountain National Park.	254,327	Elk, sheep, deer, bears (grizzly, brown and black), grouse.
HAWAIIAN ISLANDS: Hawaii National Park.	75,295	Hawaiian geese, nongame birds.
IDAHO: Yellowstone National Park (see Montana and Wyoming).	23,040	(See Wyoming.)
MAINE: Lafayette National Parks.	5,000	Deer, moose, beavers grouse, ducks, geese.
MONTANA:		
Glacier National Park.	981,681	Deer, elk, moose, sheep, goats, bears, grouse, ptarmigan, waterfowl, nongame birds.
National Park Service—Contd.		
MONTANA—Con.		
Yellowstone National Park (see Idaho and Wyoming).	126,720	(See Wyoming.)
NORTH DAKOTA: Sullys Hill National Park.	780	Buffalo, elk, white-tailed deer, ring-necked pheasants, sharp-tailed and pinnated grouse.
OKLAHOMA: Platt National Park.	849	Buffalo, 2; elk, 1; deer, in exhibition inclosure.
OREGON: Crater Lake National Park.	159,359	Black bears, deer, grouse.
SOUTH DAKOTA: Wind Cave National Park.	10,900	Grouse.
UTAH: Zion National Park.	76,800	Deer, grouse.
WASHINGTON: Mount Rainier National Park.	207,360	Black bears, deer, goats, grouse.
WYOMING: Yellowstone National Park (see Idaho and Montana)	1,992,960	Buffalo, tame, 506; wild, over 100; mountain sheep, 250; antelope, no estimate—150 kids in 1921; moose 800; elk; white-tailed deer, 100; mule deer, 1,200; grizzly bears, 40; black bears, 120.

NAVY DEPARTMENT [2]

CALIFORNIA: South Farallon Islands (see Department of Commerce, Bureau of Lighthouses).	10	Cormorants and sea birds.	VIRGINIA: Naval Operation Base, Hampton Roads.	945	Nongame birds.
HAWAII: Midway Islands.	----------	Sea birds.	Navy Mine Depot, Yorktown.	12,467	Turkeys, quail, rabbits.

WAR DEPARTMENT [3]

GEORGIA: Chickamauga and Chattanooga National Military Park (see Tennessee).	6,543		TENNESSEE: Chickamauga and Chattanooga National Military Park (see Georgia).	6,543	
MISSISSIPPI: Vicksburg National Military Park.	1,323		Shiloh National Military Park.	3,546	

[2] Naval ammunition depot, St. Juliens Creek, 221.6 acres; navy yard, Norfolk, 361.6 acres—both largely covered by buildings and plants. Birds protected by order of Commandant, Fifth Naval District.

[3] There are four other national military parks which afford protection to birds but are not strictly game refuges. These are Antietam battle field, Guilford Courthouse, Gettysburg, and Lincoln's birthplace.

AGRICULTURAL STATISTICS

UNITED STATES DEPARTMENT OF AGRICULTURE YEARBOOK, 1925

Prepared under the direction of the Statistical Committee: W. F. Callander, Lewis B. Flohr, Joseph A. Becker, and G. B. L. Arner

INTRODUCTION

Statistics of acreage, yield per acre, and production in the United States are estimates made by the Division of Crop and Livestock Estimates. For the year 1909, acreages are as reported by the Bureau of the Census; acreages in 1919 are based upon the census, supplemented by State enumerations. Acreages in 1924 are revised to or toward the preliminary reports of the agricultural census of 1924. In the intercensal years from 1911 to 1915, estimated acreages were obtained by applying estimated percentages of decrease or increase to the published acreage in the preceding year. The estimates from 1915 to 1918, from 1919 to 1923, and for 1925 are based upon acreage changes from year to year as shown by a sample of approximately 2 per cent of the crop acreages in each year, supplemented by State enumerations. Yields per acre are estimates based upon reports of one or more farmers in each agricultural township, on the average yield per acre in their localities. Production is acreage times yield per acre. Production estimates are in some cases revised in the following year on the basis of State enumerations and record of shipments.

Estimates of farm stocks, shipments, quality, crop condition, and miscellaneous information concerning crops are based either upon sample data or upon estimates of crop reporters for their localities. The sources of these data are indicated in the notes accompanying the tables.

Estimated prices received by producers on the specified dates are based upon reports of farmers and country dealers on the average price paid to farmers, and do not relate to any specified grade. Farm value as shown is computed by applying the December 1 farm price to the total production. The average price received for the portion of the crop sold may be greater or less than this price, depending upon the price changes previous and subsequent to December 1 and the amount of the crop sold at the different prices.

Numbers of livestock on farms in 1910 correspond to the census enumeration as of April 15 in that year. The number on January 1, 1920, is based upon the census enumeration as of that date, supplemented by enumerations by State agencies, such as assessors and brand inspection boards and by records of shipments during 1920. The number on January 1, 1925, is revised to or toward the preliminary reports of the agricultural census of 1924, supplemented by enumerations by State agencies, such as assessor and brand inspection boards, and by records of shipments during 1925. In the intercensal years, from 1911 to 1916 the numbers of livestock were obtained by methods identical with those used for crop acreages. Estimates from 1917 to 1919, from 1920 to 1923, and for 1926 are based upon a sample of approximately 2 per cent, supplemented by trends derived from assessors' enumerations, reports of brand inspection boards, market movements, and stockyard receipts. The census bases are not always comparable from one decade to another, due both to changes of dates and classifications.

The average value per head on January 1 is estimated from reports of correspondents relating to livestock in their vicinity. These are inventory values as distinguished from the monthly prices which relate to sales. The farm value on January 1 is computed by applying the average value per head to the number of head on farms.

Certain statistics represent enumerations made by the department in connection with the administration of regulatory and inspection laws. Certain other statistics represent enumerations made by the department in compliance with general legislation authorizing the collection and dissemination of information on agricultural products.

Statistics relating to supplies, movements, and market prices of agricultural products in the United States are derived from official sources as far as available; otherwise from reliable unofficial sources. In all cases wherein the data presented did not cover the field or a major sample thereof, data most representative of the various commodities, movements, and markets have been selected.

With some crops marketing and movement into consumptive channels takes place entirely within the calendar year in which the crop was produced. For many crops marketing takes place during portions of two calendar years. For a few crops, as potatoes, marketing extends beyond a 12-month period. In order that the movement and prices of the particular crop may be followed through, the months in which the crop moved have been used as the "year." Estimated prices received by producers are indices of price trends rather than prices actually received.

Weighted averages of prices are shown in all cases where a weighting factor was available. For instance, the weighted price of wheat in Chicago is based on the number of carload sales reported, which range from 42 to 55 per cent of all receipts on that market. In the case of hogs at Chicago, the weighted average price is based on total sales of butcher hogs to slaughterers. With many commodities, however, data as to quantities sold are unobtainable; in all such cases average prices are based on price quotations without reference to quantity.

It should be remembered that, due to changes in market conditions or quality of delivery in different years on or under the same grade description or specifications, prices derived from different sources may not be strictly comparable, although for most general purposes they are entirely satisfactory. For instance, the changes in the description of many kinds of livestock which were made July 1, 1925, while not affecting certain price series, made others only fairly comparable and made comparison impossible in other cases. The data as to commercial stocks and movements of various commodities are as nearly complete as practicable and feasible, and are considered fairly representative.

Data originating with other departments and agencies are included because of their general interest to the agricultural industry. The sources of such data are given in connection with the tables. Care has been taken to quote only such sources as are generally considered reliable.

Statistics of acreage and production in foreign countries are compiled as far as possible from official sources and are therefore subject to whatever errors may result from shortcomings in the reporting and statistical services of the various countries. Inaccuracies also result from differences in nomenclature and classification in foreign countries, and through the conversion of foreign units into domestic equivalents. Except where otherwise stated, pre-war data refer to pre-war boundaries. Yields per acre are calculated from acreage and production, both rounded to thousand units, and are therefore subject to a greater possibility of error when calculated for countries with small acreage.

The tables of international trade cover substantially the international trade of the world. The total imports and the total exports in any one year can not be expected to balance, although disagreements tend to be compensated over a series of years. Among the sources of disagreement are: The different periods covered by the "year" of various countries; imports received in the year subsequent to the year of export; lack of uniformity in classification of goods as among countries; different trade practices and varying degrees of failure in recording countries of origin and ultimate destination; different practices in recording reexported goods; and different methods of treating free ports. The exports given are domestic exports and the imports given are imports for consumption, whenever it is possible to distinguish such imports from general imports. While there are some inevitable omissions, there may be some duplication because of reshipments which do not appear as such in the official reports. In the trade tables, figures for the United States include Alaska, Porto Rico, and Hawaii, but not the Philippine Islands.

Since the statistics for the current year are in many cases preliminary and subject to revision on the basis of later and fuller information, the reader is cautioned to use always the figures as they appear in the latest issue of the Yearbook. For many commodities, long-time tables appear in the Statistical Bulletin series of the department. Current information gathered by the department may be found in the current issues of the Monthly Supplement to "Crops and Markets," "Foreign Crops and Markets," and in various mimeographed or multigraphed releases. Current information gathered by other governmental agencies and by private agencies may be found in the current issues of reports by those agencies.

STATISTICS OF GRAINS

WHEAT

TABLE 1.—*Wheat: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage harvested	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Chicago cash price per bushel No. 2 northern spring [2]				Domestic exports, including flour, fiscal year beginning July 1 [3]	Imports, including flour, fiscal year beginning July 1 [3]	Per cent of crop exported
							December		Following May				
							Low	High	Low	High			
	1,000 acres	*Bush. of 60 lbs.*	*1,000 bushels*	*Cents*	*1,000 dollars*	*Dollars*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Bushels*	*Bushels*	*Per cent*
1909	*44,263*	15.8	700,434	98.4	689,108	15.57	106	119¾	100	119¼	87,364,318	815,617	12.5
1910	45,681	13.9	635,121	88.3	561,051	12.28	104	110	98	106	69,311,760	1,146,558	10.9
1911	49,543	12.5	621,338	87.4	543,063	10.96	105	110	115	122	79,689,404	3,413,626	12.8
1912	45,814	15.9	730,267	76.0	555,280	12.12	85	90¾	90½	96	142,879,596	1,282,039	19.6
1913	50,184	15.2	763,380	79.9	610,122	12.16	89½	93	96	100	145,590,349	2,383,537	19.1
Aver. 1909–1913	47,097	14.7	690,108	85.7	591,725	12.56	97.9	104.7	99.9	108.6	104,967,085	1,808,275	15.2
1914	*53,541*	16.6	891,017	98.6	878,680	16.41	115	131	141	164½	332,464,975	715,369	37.3
1915	*60,469*	17.0	1,025,801	91.9	942,303	15.58	106	128½	116	126	243,117,026	7,187,650	23.7
1916	52,316	12.2	636,318	160.3	1,019,968	19.50	155½	190	258	340	203,573,928	24,924,985	32.0
1917	45,089	14.1	636,655	200.8	1,278,112	28.35	220	220	220	220	132,578,633	31,215,213	20.8
1918	59,181	15.6	921,438	204.2	1,881,826	31.80	220	220	245	280	287,401,579	11,288,591	31.2
1919	75,694	12.8	967,979	214.9	2,080,056	27.48	280	325	295	345	219,864,548	5,495,516	22.7
1920	61,143	13.6	833,027	143.7	1,197,263	19.58	164	187	142	178	366,077,439	57,398,002	43.9
Aver. 1914–1920	58,205	14.5	844,605	156.9	1,325,458	22.77	180.1	200.2	202.4	236.2	255,011,161	19,746,475	30.2
1921	63,696	12.8	814,905	92.6	754,834	11.85	118½	138	127	173	379,406,799	17,251,482	34.3
1922	62,317	13.9	867,598	100.7	873,412	14.02	121	139¾	120¼	129¼	221,923,184	19,944,934	91.2
1923	59,659	13.4	797,394	92.3	736,006	12.34	110	119½	111¼	130	156,429,824	28,044,999	69.2
1924	52,364	16.5	862,627	129.9	1,120,787	21.40	156½	190	159½	175	258,022,900	6,199,424	65.6
1925 [4]	52,200	12.8	669,365	141.6	947,993	18.16	165⅝	186½					

Division of Crop and Livestock Estimates. Figures in *italics* are census returns.

[1] Based on price received by producers, Dec. 1.
[2] No. 1 northern spring to 1915. Chicago Daily Trade Bulletin.
[3] Compiled from Foreign Commerce and Navigation of U. S. 1909–1918 and June issues of the Monthly Summaries of Foreign Commerce, 1919–1925.
[4] Preliminary.

TABLE 2.—*Winter and spring wheat: Acreage sown and harvested, production, and farm value, United States, 1910–1925*

Year	Winter wheat						Spring wheat				
	Acreage sown in preceding fall	Acreage harvested	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Total farm value Dec. 1	Acreage	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Total farm value Dec. 1
	1,000 acres	*1,000 acres*	*Bush.*	*1,000 bushels*	*Cents*	*1,000 dollars*	*1,000 acres*	*Bush.*	*1,000 bushels*	*Cents*	*1,000 dollars*
1910	31,659	27,329	15.9	434,142	88.1	382,318	18,352	11.0	200,979	88.9	178,733
1911	32,648	29,162	14.8	430,656	88.0	379,151	20,381	9.4	190,682	86.0	163,912
1912	33,229	26,571	15.1	399,919	80.9	323,572	19,243	17.2	330,348	70.1	231,708
1913	33,274	31,699	16.5	523,561	82.9	433,995	18,485	13.0	239,819	73.4	176,127
1914	37,158	36,008	19.0	684,990	98.6	675,623	17,533	11.8	206,027	98.6	203,057
1915	42,431	41,308	16.3	673,947	94.7	638,149	19,161	18.4	351,854	86.4	304,154
1916	39,245	34,709	13.8	480,553	162.7	781,906	17,607	8.8	155,765	152.8	238,062
1917	38,359	27,257	15.1	412,901	202.8	837,237	17,832	12.5	223,754	197.0	440,875
1918	43,126	37,130	15.2	565,099	206.3	1,165,995	22,051	16.2	356,339	200.9	715,831
1919	51,483	50,494	15.1	760,377	210.5	1,600,805	25,200	8.2	207,602	230.9	479,251
1920	44,861	40,016	15.3	610,597	148.6	907,291	21,127	10.5	222,430	130.4	289,972
1921	45,625	43,414	13.8	600,316	95.1	571,044	20,282	10.6	214,589	85.6	183,790
1922	47,930	42,358	13.8	586,878	104.7	614,399	19,959	14.1	280,720	92.3	259,013
1923	46,091	39,508	14.5	571,777	95.1	543,530	20,151	11.2	225,617	85.3	192,476
1924	38,664	35,489	16.6	589,632	131.6	776,227	16,875	16.2	272,995	126.2	344,560
1925	39,956	31,269	12.7	398,486	147.9	589,504	20,931	12.9	270,879	132.3	358,489

Division of Crop and Livestock Estimates.

TABLE 3.—*Wheat: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
Maine	4	6	104	168	177	286
Vermont	1	2	21	42	32	63
New York	327	308	6,117	5,908	8,869	9,117
New Jersey	54	58	999	1,218	1,508	1,742
Pennsylvania	1,136	1,136	18,744	22,720	26,991	33,598
Ohio	1,857	1,598	33,446	24,002	48,495	37,920
Indiana	1,704	1,772	28,972	25,790	41,140	39,833
Illinois	2,307	2,231	37,052	35,880	50,391	53,774
Michigan	840	823	20,132	13,996	27,782	21,893
Wisconsin	116	120	2,786	2,414	3,566	3,284
Minnesota	1,716	2,200	37,863	29,110	49,222	39,853
Iowa	455	412	9,199	6,952	11,683	9,431
Missouri	1,607	1,671	21,388	22,077	28,446	33,115
North Dakota	8,509	9,605	133,450	112,378	165,147	147,215
South Dakota	2,408	2,747	36,120	32,378	45,150	41,420
Nebraska	3,061	2,676	58,519	34,150	71,393	47,927
Kansas	9,817	8,501	159,964	74,810	204,754	110,708
Delaware	100	103	1,780	1,906	2,563	2,764
Maryland	510	520	8,058	10,920	11,684	16,489
Virginia	630	630	8,442	8,946	12,494	14,403
West Virginia	122	128	1,586	1,728	2,381	2,730
North Carolina	414	406	4,968	4,466	7,919	7,637
South Carolina	57	46	627	506	1,066	936
Georgia	76	99	722	1,040	1,220	1,893
Kentucky	200	236	2,060	3,394	2,946	5,286
Tennessee	310	367	3,255	4,588	4,785	7,616
Alabama	6	7	60	77	97	135
Mississippi	5	5	62	90	93	144
Arkansas	33	30	380	390	505	585
Oklahoma	3,556	3,449	56,896	28,282	70,551	41,575
Texas	1,365	819	25,252	6,552	32,575	10,156
Montana	3,163	3,221	51,799	34,601	64,330	48,243
Idaho	827	926	16,059	26,042	21,037	32,552
Wyoming	141	149	2,141	2,624	2,377	3,253
Colorado	1,360	1,148	19,520	14,532	23,033	19,726
New Mexico	215	80	3,050	492	3,812	738
Arizona	32	32	672	672	948	1,176
Utah	201	233	3,313	5,949	4,307	7,704
Nevada	14	15	321	468	481	683
Washington	1,850	2,072	26,390	36,840	34,294	47,981
Oregon	890	910	14,693	18,900	18,954	25,704
California	377	603	5,655	11,457	8,709	16,956
United States	52,364	52,200	862,627	609,365	1,130,787	947,993

Division of Crop and Livestock Estimates.

[1] Preliminary

TABLE 4.—*Winter and spring wheat: Acreage sown and harvested, production, and farm value December 1, by States, 1925* [1]

States	Winter wheat						Spring wheat				
	Acreage sown in preceding fall	Acreage harvested	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Total farm value Dec. 1	Acreage	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Total farm value Dec. 1
	1,000 acres	*1,000 acres*	*Bushels*	*1,000 bushels*	*Cents*	*1,000 dollars*	*1,000 acres*	*Bushels*	*1,000 bushels*	*Cents*	*1,000 dollars*
Maine							6	28.0	168	170	286
Vermont							2	21.0	42	150	63
New York	308	300	19.5	5,850	152	8,892	8	18.5	148	152	225
New Jersey	59	58	21.0	1,218	143	1,742					
Pennsylvania	1,159	1,136	20.0	22,720	147	33,398					
Ohio	2,070	1,594	15.6	23,910	158	37,778	4	22.9	92	154	142
Indiana	1,973	1,788	14.5	25,636	155	39,736	4	16.0	64	151	97
Illinois	2,269	2,185	16.0	34,960	150	52,440	46	20.0	920	145	1,334
Michigan	830	818	17.0	13,906	156	21,693	5	18.0	90	155	140
Wisconsin	76	53	19.6	1,007	136	1,370	67	21.0	1,407	136	1,914
Minnesota	202	170	16.0	2,720	136	3,699	2,030	13.6	26,390	137	36,154
Iowa	424	386	17.0	6,562	136	8,924	26	15.0	390	130	507
Missouri	1,752	1,694	13.2	21,965	150	32,948	7	16.0	112	149	167
North Dakota							9,605	11.7	112,378	131	147,215
South Dakota	167	125	11.5	1,438	127	1,826	2,622	11.8	30,940	128	39,603
Nebraska	3,078	2,493	12.7	31,661	141	44,642	183	13.6	2,489	132	3,285
Kansas	10,740	8,592	8.7	74,750	148	110,630	9	6.7	60	130	78
Delaware	105	103	18.5	1,906	145	2,764					
Maryland	528	520	21.0	10,920	151	16,489					
Virginia	643	630	14.2	8,946	161	14,403					
West Virginia	142	128	13.5	1,728	158	2,730					
North Carolina	412	406	11.0	4,466	171	7,637					
South Carolina	48	46	11.0	506	185	936					
Georgia	104	99	10.5	1,040	182	1,893					
Kentucky	271	236	14.0	3,304	160	5,286					
Tennessee	390	367	12.5	4,588	166	7,616					
Alabama	7	7	11.0	77	175	135					
Mississippi	8	5	18.0	90	160	144					
Arkansas	33	30	13.0	390	150	585					
Oklahoma	4,479	3,449	8.2	28,282	147	41,575					
Texas	1,730	819	8.0	6,552	155	10,156					
Montana	650	195	14.5	2,828	133	3,761	3,026	10.5	31,773	140	44,482
Idaho	478	406	27.0	10,962	125	13,702	520	29.0	15,080	125	18,850
Wyoming	34	29	16.0	464	124	575	120	18.0	2,160	124	2,678
Colorado	1,337	896	12.0	10,752	136	14,623	252	15.0	3,780	135	5,103
New Mexico	173	52	3.0	156	150	234	28	12.0	336	150	504
Arizona	33	32	21.0	672	175	1,176					
Utah	148	145	21.0	3,045	130	3,958	88	33.0	2,904	129	3,746
Nevada	2	2	26.0	52	146	76	13	32.0	416	146	607
Washington	1,240	372	25.0	9,300	128	11,904	1,700	16.2	27,540	131	36,077
Oregon	1,000	350	22.0	7,700	136	10,472	560	20.0	11,200	136	15,232
California	804	603	19.0	11,457	148	16,956					
United States	39,956	31,269	12.7	398,486	147.9	589,504	20,931	12.9	270,879	132.3	358,489

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 5.—*Wheat: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
Me	25.5	29.7	21.0	23.5	25.5	25.0	27.0	28.0	27.0	14.0	22.0	18.8	22.0	22.7	17.0	25.0	26.0	26.0	28.0	24.4
Vt	25.0	29.3	27.8	25.0	24.5	26.3	29.0	30.0	25.0	20.0	22.0	16.0	19.0	23.0	14.0	21.0	21.0	21.0	21.0	19.6
N. Y	21.0	23.7	19.5	16.0	20.0	20.0	22.5	25.0	21.0	21.0	18.2	21.0	21.8	21.5	19.2	19.4	20.2	18.7	19.5	19.4
N. J	17.9	18.5	17.4	18.5	17.6	18.0	18.0	20.0	20.0	19.0	17.0	18.0	16.0	18.3	19.0	20.0	20.0	18.5	21.0	19.7
Pa	17.0	17.8	13.5	18.0	17.0	16.7	18.1	18.5	19.0	17.5	17.0	17.5	16.6	17.7	17.5	18.5	19.0	16.5	20.0	18.3
Ohio	15.9	16.2	16.0	8.0	18.0	14.8	18.5	20.3	13.5	22.0	19.0	19.9	12.7	18.0	12.4	14.0	18.2	18.0	15.0	15.5
Ind	15.3	15.6	14.7	8.0	18.5	14.4	17.4	17.2	12.0	18.5	21.0	14.9	12.0	16.1	12.0	14.5	16.5	17.0	14.5	14.9
Ill	17.4	15.0	16.0	8.3	18.7	15.1	18.5	19.0	11.0	18.7	22.1	17.1	15.2	17.4	16.1	17.3	18.0	16.1	16.1	16.7
Mich	18.8	18.0	18.0	10.0	15.3	16.0	19.7	21.3	16.6	18.0	14.2	19.4	15.3	17.8	15.7	14.0	17.0	24.0	17.0	17.5
Wis	19.5	19.3	15.9	19.0	19.3	18.6	19.1	22.7	17.6	22.3	24.2	13.5	15.1	19.2	13.1	17.1	16.6	24.0	20.1	18.2
Minn	16.8	16.0	10.1	15.5	16.2	14.9	10.6	17.0	7.6	17.5	20.9	9.4	9.8	13.3	9.7	13.7	12.7	22.1	13.2	14.3
Iowa	17.0	21.0	16.4	19.8	20.6	19.0	18.6	20.0	16.3	19.9	18.9	14.8	17.5	18.0	17.9	22.5	18.5	20.2	16.9	19.2
Mo	14.7	13.8	15.7	12.5	17.1	14.8	17.0	12.3	8.5	15.3	17.2	13.5	12.5	13.8	10.9	12.5	13.0	13.3	13.2	12.6
N. Dak	13.7	5.0	8.0	18.0	10.5	11.0	11.2	18.2	5.5	8.0	13.6	6.9	9.0	10.3	8.5	14.1	7.4	15.7	11.7	11.5
S. Dak	14.1	12.8	4.0	14.2	9.0	10.8	9.1	17.1	6.8	14.0	19.0	8.2	9.2	11.9	9.1	13.4	9.6	15.0	11.8	11.8
Nebr	18.8	16.2	13.4	17.6	17.9	16.8	18.6	18.3	19.4	13.8	11.2	13.8	16.8	16.0	15.1	14.3	9.9	19.1	12.8	14.2
Kans	14.4	14.1	10.7	15.5	13.0	13.5	20.5	12.5	12.0	12.2	14.1	13.8	15.4	14.4	12.2	12.6	10.1	16.3	8.7	12.0
Del	14.0	17.0	16.7	17.5	14.5	15.9	20.5	15.0	15.0	16.5	13.0	12.0	17.0	15.6	11.5	16.2	18.0	17.8	18.5	16.4
Md	14.5	17.4	15.5	15.0	13.3	15.1	21.5	16.1	16.0	17.0	15.5	13.5	17.0	16.7	14.0	16.5	19.2	15.8	21.0	17.3
Va	11.2	12.8	12.0	11.6	13.6	12.2	14.5	13.8	12.7	13.0	12.0	11.8	12.5	12.9	9.8	12.5	13.3	13.4	14.2	12.6
W. Va	13.0	12.5	11.5	14.5	13.0	12.9	15.0	15.0	14.5	14.0	14.2	13.5	12.5	14.1	12.5	11.5	13.0	13.0	13.5	12.7
N. C	9.5	11.4	10.6	8.9	11.7	10.4	12.0	10.9	10.5	10.0	7.0	7.9	11.7	10.0	7.5	9.0	11.1	12.0	11.0	10.1
S. C	10.0	11.0	11.4	9.2	12.3	10.8	11.5	10.8	10.6	10.5	11.0	10.0	11.0	10.8	11.0	8.0	11.0	11.0	11.0	10.4
Ga	10.0	10.5	12.0	9.3	12.2	10.8	12.1	11.0	11.4	8.5	10.2	10.5	10.0	10.5	10.5	8.0	9.2	9.5	10.5	9.5
Ky	11.8	12.8	12.7	10.0	13.6	12.2	16.5	11.0	9.0	12.0	13.0	11.5	10.2	11.9	10.0	11.5	12.4	10.3	14.0	11.6
Tenn	10.4	11.7	11.5	10.5	12.0	11.2	15.5	10.5	9.5	9.2	10.0	9.3	9.5	10.5	10.0	9.5	10.2	10.5	12.5	10.5
Ala	10.5	12.0	11.5	10.6	11.7	11.3	13.0	12.0	9.5	10.0	9.0	9.0	9.6	10.3	10.5	10.9	10.0	10.0	11.0	10.5
Miss	11.0	14.0	12.0	12.0	14.0	12.6	13.0	20.0	15.0	15.0	16.5	14.0	10.0	14.8	14.0	12.0	15.0	12.4	18.0	14.3
Ark	11.4	13.9	10.5	10.0	13.0	11.8	13.0	12.5	8.0	16.0	12.0	9.5	9.5	11.5	9.3	13.0	11.0	11.5	13.0	11.6
Okla	12.8	16.3	8.0	12.8	10.0	12.0	19.0	11.6	9.7	11.5	12.6	14.0	16.0	13.5	12.5	9.5	11.0	16.0	8.2	11.4
Tex	9.1	15.0	9.4	15.0	17.5	13.2	13.0	15.5	11.0	12.0	10.0	16.5	13.0	13.0	10.0	8.0	10.5	18.5	8.0	11.0
Mont	30.8	22.0	28.7	24.1	23.8	25.9	20.2	26.5	19.3	10.4	12.6	2.7	10.3	14.6	12.3	14.6	14.6	16.4	10.7	13.7
Idaho	27.8	22.6	30.7	28.6	27.6	27.5	26.2	28.0	23.8	20.3	21.3	18.2	22.4	22.9	24.0	21.6	28.6	19.4	28.1	24.3
Wyo	28.7	25.0	26.0	28.7	25.0	26.7	22.9	26.5	21.6	21.2	25.4	14.4	20.0	21.7	17.2	14.0	15.9	15.2	17.6	16.0
Colo	29.5	22.3	18.9	24.2	21.0	23.2	23.8	24.2	19.8	22.6	12.3	13.7	18.0	19.2	13.5	13.4	13.0	14.4	12.7	13.4
N. Mex	24.5	20.0	22.9	20.9	18.8	21.4	24.2	22.2	18.6	12.7	16.7	19.0	18.3	18.8	13.6	8.4	12.0	14.2	6.2	10.9
Ariz	25.0	22.3	29.6	30.7	32.0	27.9	28.0	28.0	29.0	25.0	26.0	25.0	24.0	26.4	21.0	26.0	26.0	21.0	21.0	23.0
Utah	25.9	22.1	22.3	25.7	24.2	24.0	25.0	25.7	21.2	19.1	20.2	15.4	19.5	20.9	22.8	19.3	24.1	16.5	25.5	21.6
Nev	28.7	26.5	28.3	29.2	27.7	28.1	29.6	29.6	28.9	27.8	25.5	21.2	22.3	26.4	23.5	26.2	25.4	22.9	31.2	25.8
Wash	23.2	16.9	22.7	23.5	23.2	21.9	23.5	25.7	23.7	15.8	13.1	16.8	16.9	19.4	22.8	12.9	25.0	14.3	17.8	18.6
Oreg	20.2	22.1	21.0	25.0	21.0	21.9	20.8	22.2	23.0	14.5	14.7	19.2	20.9	19.3	23.4	17.3	24.1	16.5	20.8	20.4
Calif	14.0	18.0	18.0	17.0	14.0	16.2	17.0	16.0	16.0	19.8	15.0	15.5	14.0	16.2	15.0	21.5	21.6	15.0	19.0	18.4
U. S	15.8	13.9	12.5	15.9	15.2	14.7	16.6	17.0	12.2	14.1	15.6	12.8	13.6	14.6	12.8	13.9	13.4	16.5	12.8	13.9

Division of Crop and Livestock Estimates.

TABLE 6.—*Winter wheat: Yield per acre in States producing both winter and spring wheat, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
N. Y	21.0	23.7	19.5	16.0	20.0	20.0	22.5	25.0	21.0	21.0	18.0	22.0	22.3	21.7	19.5	19.5	20.4	18.7	19.5	19.5
Ohio	15.9	16.2	16.0	8.0	18.0	14.8	18.5	20.3	13.5	22.0	19.0	20.0	12.7	18.0	12.4	14.0	18.2	18.0	15.0	15.5
Ind	15.3	15.6	14.7	8.0	18.5	14.4	17.4	17.2	12.0	18.5	21.0	15.0	12.0	16.2	12.0	14.5	16.5	17.0	14.5	14.9
Ill	17.4	15.0	16.0	8.3	18.7	15.1	18.5	19.0	11.0	18.5	21.5	17.5	15.1	17.3	16.2	17.5	18.0	16.0	16.0	16.7
Mich	18.8	18.0	18.0	10.0	15.3	16.0	19.7	21.3	16.6	18.0	14.0	20.3	15.6	17.9	16.0	14.0	17.0	24.0	17.0	17.6
Wis	20.4	20.0	17.5	19.5	20.1	19.5	21.5	23.0	19.0	24.0	21.2	19.6	22.0	21.5	16.0	18.6	17.0	25.6	19.0	19.2
Minn	----	----	----	----	16.2	----	19.5	19.5	14.0	18.0	18.0	15.0	19.6	17.7	14.0	14.0	16.0	25.0	16.0	17.0
Iowa	21.6	21.2	19.7	23.0	23.4	21.8	21.6	21.5	18.5	17.5	20.5	18.3	19.7	19.7	19.2	23.2	18.9	20.4	17.0	19.7
Mo	14.7	13.8	15.7	12.5	17.1	14.8	17.0	12.3	8.5	15.3	17.2	13.5	12.5	13.8	10.9	12.5	13.0	13.3	13.2	12.6
S. Dak	----	----	----	----	9.0	----	14.0	20.5	18.5	14.0	17.0	13.0	14.5	15.9	14.0	19.0	12.0	15.0	11.5	14.3
Nebr	19.4	16.5	13.8	18.0	18.6	17.3	19.3	18.5	20.0	12.0	11.1	14.8	17.4	16.2	15.3	14.5	10.0	19.5	12.7	14.4
Kans	14.5	14.2	10.8	15.5	13.0	14.6	20.5	12.5	12.0	12.2	14.1	13.8	15.4	14.4	12.2	12.6	10.1	16.3	8.7	12.0
Mont	32.5	22.0	31.7	24.5	25.6	27.3	23.0	27.0	21.5	13.0	12.7	5.2	12.0	16.3	14.0	15.2	17.0	17.1	14.5	15.6
Idaho	29.0	23.7	31.5	28.7	27.4	28.1	27.5	29.0	24.0	18.0	22.0	18.5	20.0	22.7	24.0	19.5	28.0	17.0	27.0	23.1
Wyo	32.5	25.0	26.0	28.0	25.0	27.3	24.0	26.0	21.0	20.0	24.0	12.0	20.0	21.0	18.0	14.0	15.0	16.0	16.0	15.8
Colo	29.7	23.0	18.0	24.5	21.1	23.3	25.0	26.0	20.0	23.0	10.5	13.2	17.5	19.3	12.0	13.0	12.0	14.0	12.0	12.6
N. Mex	----	20.0	25.0	20.0	18.6	----	25.0	22.0	16.5	10.0	10.0	19.1	18.2	17.3	12.6	5.5	9.5	14.0	3.0	8.9
Utah	24.0	20.5	20.0	24.0	23.0	22.3	25.0	25.0	20.0	14.0	16.6	12.7	15.9	18.5	19.9	14.0	19.9	13.3	21.0	17.6
Nev	----	24.0	23.0	27.5	23.0	----	29.0	26.0	24.5	26.0	29.0	19.7	18.7	24.7	20.2	19.7	25.7	23.0	26.0	22.9
Wash	25.8	20.5	27.3	27.6	27.0	25.6	26.5	27.6	26.5	21.5	23.5	21.1	24.0	24.4	27.9	15.6	27.5	17.0	25.0	22.6
Oreg	21.0	23.7	22.2	26.8	21.4	23.0	22.0	24.0	23.0	17.5	17.0	21.2	22.2	21.0	25.5	19.0	25.0	16.7	22.0	21.6
U. S	15.8	15.9	14.8	15.1	16.5	15.6	19.0	16.3	13.8	15.1	15.2	15.1	15.3	15.7	13.8	13.8	14.5	16.6	12.7	14.3

Division of Crop and Livestock Estimates.

TABLE 7.—*Spring wheat: Yield per acre in States producing both winter and spring wheat, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
N. Y	----	----	----	----	----	----	----	----	----	21.0	20.0	15.0	18.0	----	14.5	16.0	16.5	19.0	18.5	16.9
Ohio	----	----	----	----	----	----	----	----	----	----	21.5	16.0	13.0	----	12.5	15.0	19.5	23.0	22.9	18.6
Ind	----	----	----	----	----	----	----	----	----	20.0	23.0	9.0	12.0	----	12.0	11.0	15.0	18.0	16.0	14.4
Ill	----	----	----	----	----	----	----	----	----	25.0	26.9	14.5	16.5	----	14.5	14.5	17.0	20.5	20.0	17.3
Mich	----	----	----	----	----	----	----	----	----	17.7	18.0	11.2	10.0	----	9.0	14.5	15.0	18.5	18.0	15.0
Wis	19.0	18.7	14.5	18.5	18.6	17.9	17.0	22.5	16.6	21.2	24.7	12.4	12.6	18.1	11.1	15.3	16.0	21.0	21.0	16.9
Minn	16.8	16.0	10.1	15.5	16.2	14.9	10.5	17.0	7.5	17.5	21.0	9.3	9.5	13.2	9.5	13.7	12.5	21.8	13.0	14.1
Iowa	14.7	20.9	13.8	17.0	17.0	16.7	13.5	16.7	13.0	21.5	18.0	9.5	11.3	14.8	10.3	14.3	12.9	17.2	15.0	13.9
Mo	----	----	----	----	----	----	----	----	----	9.0	15.6	8.5	13.0	----	12.0	13.5	13.0	15.4	16.0	14.0
S. Dak	14.1	12.8	4.0	14.2	9.0	10.8	9.0	17.0	6.3	14.0	19.0	8.0	9.0	11.8	9.0	13.2	9.5	15.0	11.8	11.7
Nebr	14.0	13.9	10.0	14.1	12.0	12.8	11.5	16.0	12.5	16.5	11.9	8.5	9.5	12.3	11.3	11.4	9.0	13.5	13.6	11.8
Kans	11.5	8.4	4.2	15.0	8.5	9.5	15.0	12.0	10.5	6.0	8.0	9.3	12.5	10.5	8.2	8.3	9.0	10.5	6.7	8.5
Mont	28.8	22.0	25.2	23.5	21.5	24.2	17.0	26.0	18.0	9.0	12.5	2.3	10.0	13.5	12.0	14.4	14.0	16.2	10.5	13.4
Idaho	26.0	20.4	29.0	28.3	28.0	26.3	24.0	26.5	23.5	22.0	21.0	18.0	24.0	22.7	24.0	23.0	29.0	22.0	29.0	25.4
Wyo	27.0	25.0	26.0	29.2	25.0	26.4	22.0	27.0	22.0	22.0	26.0	15.0	20.0	22.0	17.0	14.0	16.0	15.0	18.0	16.0
Colo	29.4	21.9	19.5	24.0	21.0	23.2	22.5	21.0	19.5	22.0	17.5	15.4	19.4	19.6	19.0	15.0	16.0	16.0	15.0	16.2
N. Mex	24.5	20.0	20.5	22.0	19.0	21.2	23.0	22.5	21.5	18.0	24.0	18.7	18.5	20.9	16.6	11.1	14.0	15.0	12.0	13.7
Utah	28.5	25.3	27.0	29.2	28.0	27.6	25.0	28.0	25.0	25.0	23.8	18.7	23.7	24.2	26.3	25.6	29.2	22.7	33.0	27.4
Nev	28.7	29.0	32.5	30.2	31.0	30.3	30.0	32.0	31.5	28.0	25.0	21.4	23.0	27.3	24.0	27.3	25.3	22.9	32.0	26.3
Wash	20.6	14.5	19.5	20.4	19.0	18.8	20.0	22.2	21.5	13.6	9.5	13.0	11.9	16.0	15.0	9.3	22.0	9.2	16.2	14.3
Oreg	18.7	18.0	17.7	19.5	19.5	18.7	16.5	17.0	23.0	11.0	11.0	13.0	17.0	15.5	17.0	11.5	21.0	15.0	20.0	16.9
U. S	15.8	11.0	9.4	17.2	13.0	13.3	11.8	18.4	8.8	12.5	16.2	8.2	10.5	12.3	10.6	14.1	11.2	16.2	12.9	13.0

Division of Crop and Livestock Estimates.

TABLE 8.—*Durum wheat:* [1] *Acreage harvested, yield per acre, and production, by States, 1917–1925*

State and year	Acreage harvested	Average yield per acre	Production	State and year	Acreage harvested	Average yield per acre	Production
Minnesota:	*1,000 acres*	*Bushels*	*1,000 bushels*	South Dakota—Continued.	*1,000 acres*	*Bushels*	*1,000 bushels*
1917	100	15.5	1,557	1922	1,239	15.5	19,206
1918	123	20.0	2,460	1923	1,275	12.0	15,300
1919	125	11.9	1,485	1924	997	15.3	15,254
1920	115	12.0	1,383	1925 [2]	1,049	13.8	14,476
1921	147	11.9	1,754	Montana:			
1922	248	16.0	3,960	1917	149	9.0	1,343
1923	225	12.7	2,858	1918	350	12.9	4,516
1924	126	21.5	2,709	1919	209	4.5	943
1925 [2]	142	15.2	2,158	1920	368	11.5	4,231
North Dakota:				1921	380	11.2	4,259
1917	1,574	9.0	14,168	1922	279	14.7	4,106
1918	2,204	14.0	30,856	1923	128	10.2	1,306
1919	2,749	7.9	21,720	1924	126	18.0	2,268
1920	3,210	10.5	33,702	1925 [2]	121	10.0	1,210
1921	3,788	9.7	36,741				
1922	4,026	15.0	60,397	Total, 4 States:			
1923	3,667	9.1	33,370	1917	2,397	10.9	26,009
1924	2,922	16.2	47,336	1918	3,313	15.2	50,235
1925 [2]	3,362	14.5	48,749	1919	3,782	8.2	30,996
South Dakota:				1920	4,409	10.9	48,200
1917	573	15.6	8,941	1921	5,276	10.1	53,324
1918	636	19.5	12,403	1922	5,792	15.1	87,669
1919	699	9.8	6,848	1923	5,295	10.0	52,834
1920	716	12.4	8,884	1924	4,171	16.2	67,567
1921	961	11.0	10,570	1925 [2]	4,674	14.2	66,593

Division of Crop and Live stock Estimates.

[1] Included in spring wheat in Table 4.

[2] Preliminary.

TABLE 9.—*Wheat: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost, freeze, or winter kill	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	8.5	3.2	0.7	2.4	2.0	1.2	0.6	0.3	18.9	1.6	1.1	0.3	0.1	0.8	22.8
1910	18.9	.9	.2	6.6	.5	2.6	.2	.1	30.0	.8	1.9	.4	.2	.5	33.8
1911	25.5	.8	(1)	1.5	.4	3.8	.1	.2	32.3	1.9	1.9	.2	.2	1.3	37.8
1912	8.1	1.8	.3	9.5	1.5	1.8	.4	.6	24.0	1.8	2.3	.3	.2	.9	29.5
1913	14.1	.4	.2	1.9	.7	1.7	.3	.5	19.8	.3	2.2	.1	.1	1.0	23.5
1914	6.7	1.4	.1	1.1	1.0	2.7	.2	.2	13.4	3.0	2.6	.1	.1	.6	19.8
1915	1.3	7.3	1.0	1.2	1.6	.1	.4	.1	13.0	2.4	3.6	.1	.1	.5	19.7
1916	6.9	3.8	.6	5.1	1.3	2.7	.2	.6	21.2	12.5	4.0	.1	.1	.8	38.7
1917	19.1	.4	.1	11.8	1.0	1.6	.2	.2	34.4	.7	.7	.1	.1	.3	36.3
1918	14.6	.3	.1	3.8	1.1	2.0	.2	.2	22.3	1.5	1.1	.2	.1	.5	25.7
1919	12.3	6.2	.4	1.3	.8	2.8	.3	.2	24.3	10.2	2.5	.1	(1)	.5	37.6
1920	8.1	2.3	.2	4.2	1.0	1.5	.4	.0	17.7	9.5	4.4	.1	.1	.4	32.2
1921	13.3	2.0	.2	3.1	1.4	3.6	.3	.0	23.9	5.2	3.6	.1	.1	.2	33.1
1922	13.1	2.0	.4	2.2	2.0	1.4	.2	.1	21.4	3.4	3.4	.1	.1	.3	28.7
1923	8.6	4.0	.5	4.0	1.4	.8	.2	.0	19.5	4.6	4.6	.1	.1	.3	29.2
1924	9.4	2.3	.2	3.6	1.4	.5	.2	.2	17.8	1.5	2.1	.2	.1	.2	21.9

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 10.—*Winter wheat: Percentage of acreage abandoned,*[1] *1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
N. Y	5.5	1.4	4.2	5.1	2.0	3.6	1.0	1.2	1.0	4.0	15.0	0.7	1.5	3.5	2.0	2.5	3.2	3.8	2.5	2.8
N. J	3.2	3.4	3.4	5.7	4.0	3.9	4.5	4.0	3.0	5.0	6.0	1.5	10.0	4.9	1.8	4.0	3.0	4.0	2.5	3.1
Pa	2.7	2.3	3.8	4.6	3.0	3.3	2.0	4.9	2.5	4.0	5.0	.5	3.5	3.2	1.0	2.0	2.5	3.0	2.9	2.3
Ohio	10.0	5.6	3.2	45.2	3.3	13.5	1.3	1.8	18.0	4.0	5.0	.1	16.0	6.6	2.0	2.5	12.5	12.0	30.0	11.8
Ind	8.5	6.0	3.6	46.5	3.5	13.6	1.3	2.0	30.0	20.0	1.0	1.0	13.0	9.8	3.0	5.0	6.0	9.0	14.0	7.4
Ill	7.5	8.0	4.1	53.5	2.0	15.0	2.0	2.0	33.0	35.0	3.0	1.0	18.0	13.4	2.3	5.0	5.5	17.0	3.7	6.7
Mich	5.0	5.5	3.2	26.0	4.5	8.8	2.3	1.0	3.5	5.0	24.0	1.0	7.0	6.3	2.5	2.0	4.5	1.0	2.5	2.5
Wis	6.0	4.4	7.2	7.2	4.6	5.9	5.0	3.0	20.0	5.0	15.0	2.0	4.0	12.0	10.0	16.0	4.0	3.0	22.0	11.0
Minn							8.0	3.0	25.0	15.0	18.0	3.5	14.0	12.4	7.0	12.0	15.0	5.0	16.0	11.0
Iowa	4.0	28.1	4.0	18.3	3.5	11.6	2.0	1.0	18.0	32.0	13.0	.4	6.0	14.6	1.0	2.0	5.0	2.5	9.0	3.9
Mo	9.0	17.5	3.0	23.2	1.5	10.8	1.4	2.5	20.0	22.0	1.0	.6	9.0	8.1	2.0	3.7	1.8	7.0	1.5	3.2
S. Dak							14.0	3.0	9.0	34.0	20.0	5.0	15.0	14.3	7.5	6.0	40.0	10.7	20.0	16.8
Nebr	7.2	28.5	10.0	10.5	2.0	11.6	4.0	1.0	4.0	75.0	10.0	.3	8.0	14.6	2.0	12.0	25.0	3.0	21.0	12.6
Kans	8.0	30.7	27.0	18.0	6.0	17.9	4.5	3.5	5.0	53.0	29.0	.4	16.0	15.9	8.0	27.0	28.0	4.5	24.8	18.5
Del	2.0	1.7	3.4	3.9	2.7	2.7	2.0	2.5	3.0	3.5	9.0	.0	5.0	3.6	2.5	2.0	3.0	5.0	3.0	3.1
Md	1.5	1.1	2.9	3.0	1.8	2.1	1.5	3.0	3.8	4.2	5.0	.5	4.0	3.1	2.0	2.0	3.2	3.8	3.5	2.9
Va	1.3	2.9	2.6	2.8	1.8	2.3	1.9	3.5	2.0	5.0	1.0	1.0	3.0	2.5	2.2	1.5	2.5	5.0	4.0	3.0
W. Va	1.7	3.6	4.0	3.3	3.3	3.2	2.0	2.0	2.0	2.5	2.0	.5	4.0	2.1	1.5	1.5	3.5	10.0	12.5	5.8
N. C	1.8	3.5	3.8	3.3	2.5	3.0	2.6	4.0	1.5	10.0	2.0	1.0	2.0	3.3	2.0	1.0	2.0	3.0	2.5	2.1
S. C	3.3	3.8	3.5	4.3	4.0	3.8	3.0	3.3	3.0	25.0	2.0	2.0	2.0	5.8	2.5	10.0	2.0	5.0	4.0	4.7
Ga	3.0	6.0	3.3	5.0	3.0	4.1	3.0	5.0	4.0	38.0	11.0	6.0	5.0	10.3	3.5	9.0	5.0	42.0	5.5	13.0
Ky	5.5	6.5	3.9	13.0	5.0	6.8	2.3	7.0	6.0	16.0	2.0	1.0	14.0	6.9	3.5	3.0	3.5	25.0	13.0	9.6
Tenn	3.0	6.4	4.3	5.6	3.2	4.5	2.0	4.5	4.5	35.0	2.0	1.8	14.0	9.1	2.0	2.0	2.5	14.0	6.0	5.3
Ala	5.0	6.7	6.2	7.0	4.3	5.8	8.0	5.0	6.0	30.0	3.0	2.0	3.0	8.1	5.0	6.0	7.0	26.0	6.0	10.0
Miss	0	0	10.0	17.0	2.5	5.9	15.0	10.0	6.0	25.0	5.0	5.0	10.0	10.9	20.0	5.0	8.0	50.0	25.0	21.6
Ark	3.0	3.3	5.0	7.0	2.4	4.1	2.5	2.0	5.0	5.0	1.0	1.7	6.0	3.3	4.0	3.5	4.0	5.0	7.0	4.7
Tex	37.0	3.3	7.0	1.5	11.0	12.0	5.0	.5	33.0	25.0	45.0	3.0	10.0	17.4	4.0	41.0	8.0	2.0	62.0	23.4
Okla	7.5	5.0	34.0	10.5	7.0	12.8	3.0	.5	5.0	17.0	20.0	.1	13.0	8.4	4.0	24.0	9.0	2.0	17.0	11.2
Mont	15.5	15.0	5.4	3.7	7.0	9.3	5.0	5.0	25.0	22.0	12.0	4.5	22.0	13.6	15.0	9.0	18.0	6.0	70.0	23.6
Idaho	4.2	4.0	4.7	3.8	5.0	4.3	2.0	4.0	5.5	10.0	4.0	2.0	10.0	5.4	3.0	6.0	4.0	4.0	17.5	6.9
Wyo	2.9	4.5	7.7	8.7	4.6	5.7	4.0	2.0	5.0	15.0	10.0	4.0	6.0	6.6	8.0	11.0	17.0	3.0	17.0	11.2
Colo	6.0	10.0	11.4	7.8	5.1	8.1	8.0	3.0	8.0	20.0	7.0	1.0	12.0	8.4	8.0	20.0	33.0	4.5	14.0	15.9
N. Mex	0	0	0	10.9	14.2	5.0	7.0	2.5	8.0	28.0	35.0	5.0	15.0	14.4	10.0	60.0	50.0	10.0	70.0	40.0
Ariz	0	0	0	15.0	5.0	4.0	5.0	3.5	6.0	10.0	13.0	5.0	5.0	6.8	10.0	1.0	8.0	2.0	3.0	4.8
Utah	9.0	5.0	2.6	7.1	8.5	6.4	3.0	3.0	2.0	5.0	2.0	4.5	4.0	3.4	4.0	2.0	2.5	2.0	2.0	2.5
Nev	5.0	0	5.9	5.0	13.3	5.8	4.5	4.0	3.0	5.0	1.0	5.0	12.0	4.9	8.0	1.0	2.0	2.0	2.0	3.0
Wash	4.0	7.6	4.9	4.5	5.6	5.3	4.5	4.0	20.0	33.0	5.0	3.0	20.0	12.8	2.0	7.0	5.0	18.0	72.0	20.8
Oreg	3.0	6.0	3.9	1.6	5.0	3.9	2.0	2.5	2.0	11.0	2.0	1.5	3.0	3.4	1.0	4.0	3.0	1.0	70.0	15.8
Calif	16.3	5.2	8.0	8.0	30.0	13.5	5.0	5.0	20.0	20.0	15.0	10.0	16.0	13.0	28.0	8.7	8.0	54.0	19.0	23.5
U. S	7.4	13.7	10.7	20.0	5.0	11.4	3.1	2.6	11.8	28.9	13.2	1.1	12.3	10.4	4.7	14.4	14.3	7.4	21.7	12.5

Division of Crop and Livestock Estimates.

[1] Based on percentages reported abandoned to May 1 by crop reporters. Total for season used in December estimate may be greater or less.

TABLE 11.—*Wheat: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Canada	9,945	22,423	22,672	22,056	21,958	19.8	17.8	20.9	11.9	19.0
United States	47,097	62,317	59,659	52,364	52,200	14.7	13.9	13.4	16.5	12.8
Mexico	[2] 2,174	2,618	3,055	1,404	1,717	.....	5.2	4.5	7.4	6.0
Total North America	59,216	87,358	85,386	75,824	75,875	.....	.....	.....	.....	.....
EUROPE										
United Kingdom:										
England and Wales	1,787	1,967	1,740	1,545	1,499	31.2	31.2	31.5	32.2	33.9
Scotland	57	65	59	49	48	39.9	38.8	39.3	37.3	41.0
Ireland	43	41	39	32	.....	37.0	34.6	32.5	32.7	.....
Norway	12	25	25	21	21	25.5	25.7	23.5	23.5	26.7
Sweden	255	356	362	322	363	31.8	26.7	30.4	21.4	38.7
Denmark	154	237	205	149	196	41.1	39.0	43.2	39.3	45.0
Netherlands	138	150	154	118	130	36.1	41.1	40.3	39.2	39.5
Belgium	404	300	345	340	378	37.6	35.4	38.8	38.2	37.2
Luxemburg	27	23	16	22	22	22.8	7.5	18.8	14.2	22.0
France	16,500	13,072	13,672	13,620	13,754	19.7	18.6	20.2	20.6	23.9
Spain	9,547	10,309	10,488	10,379	10,722	13.7	12.2	15.0	11.7	15.2
Portugal	[3] 1,211	1,156	1,055	945	.....	.....	8.6	12.5	9.1	.....
Italy	11,793	11,489	11,554	11,284	11,673	15.6	14.1	19.5	15.1	20.6
Switzerland	105	103	105	104	105	31.6	22.8	34.2	29.9	33.5
Germany	4,029	3,395	3,653	3,623	3,835	32.6	21.2	29.1	24.6	30.8
Austria	635	460	475	482	487	20.2	16.1	18.7	17.6	24.6
Czechoslovakia	1,718	1,675	1,507	1,497	1,526	22.0	20.1	24.0	21.5	24.0
Hungary	3,712	3,522	3,320	3,499	3,602	19.3	15.5	20.4	14.7	18.8
Yugoslavia	3,982	3,673	3,842	4,244	4,382	15.6	12.1	15.9	13.6	18.8
Greece	[4] 1,134	890	1,071	.....	.....	[4] 14.4	10.7	12.5	.....	.....
Bulgaria	2,409	2,226	2,303	2,462	2,537	15.7	16.9	15.7	11.5	19.6
Rumania	[5] 9,515	6,547	6,648	7,838	8,157	[5] 16.7	14.1	15.4	9.0	12.8
Poland	3,550	2,574	2,514	2,651	2,724	19.0	16.5	19.8	12.3	21.2
Lithuania	211	194	202	210	277	15.5	16.9	14.7	15.8	19.1
Latvia	85	70	106	106	119	17.4	13.7	15.5	14.9	18.2
Esthonia	23	52	56	44	30	15.8	14.6	13.2	12.3	18.1
Finland	8	38	40	37	37	17.1	18.7	17.2	21.4	20.2
Russia, European	57,420	16,418	26,478	33,214	36,561	10.6	9.6	10.1	7.4	13.2
Total European countries reporting all years shown:										
Excluding Russia	70,456	62,522	63,391	64,646	66,624	18.7	16.4	19.5	16.0	20.6
Including Russia	127,876	78,940	89,869	97,860	103,185	15.1	14.9	16.7	13.1	17.9
NORTH AFRICA										
Morocco	(1,700)	2,068	2,249	2,461	2,545	.....	6.2	8.9	11.6	8.3
Algeria	3,521	3,739	3,118	3,492	3,640	10.0	6.0	11.6	4.9	11.1
Tunis	1,310	1,072	1,606	1,108	1,507	4.8	3.4	6.2	4.7	6.6
Egypt	1,314	1,518	1,537	1,416	1,380	25.6	24.1	26.5	24.1	26.6
Total North Africa countries reporting all years shown	7,845	8,397	8,510	8,477	9,072	.....	.....	.....	.....	.....

[1] Where changes in boundary have occurred averages are estimates for territory within present boundaries.
[2] Two-year average.
[3] Three-year average.
[4] One year only.
[5] Four-year average.

TABLE 11.—*Wheat: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE—Continued										
ASIA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Cyprus	------	191	191	190	------	------	13.1	13.7	------	------
India	29,224	28,207	30,852	31,181	31,773	12.0	13.1	12.1	11.6	10.6
Russia (Asiatic)	16,789	[6] 5,822	[6] 7,556	12,800	[6] 10,528	9.0	7.8	7.9	10.5	-----
Japanese Empire:										
Japan	1,179	1,229	1,196	1,150	1,156	21.3	23.9	22.2	22.1	25.6
Chosen	574	890	873	884	------	12.0	11.1	9.3	11.6	------
Formosa	15	10	8	------	------	11.3	9.1	9.5	------	------
Kwantung	[3] 4	4	------	------	------	10.0	12.0	------	------	------
Total Northern Hemisphere countries reporting all years shown:										
Excluding Russia	167,920	187,713	189,335	181,278	184,500	------	------	------	------	------
Including Russia	242,129	209,953	223,369	227,292	231,589	------	------	------	------	------
SOUTHERN HEMISPHERE										
Argentina	16,051	16,254	17,177	17,792	19,197	9.2	12.0	14.4	10.7	11.2
Uruguay	[5] 791	663	1,055	850	1,047	8.2	7.8	12.6	11.7	------
Chile	1,003	1,473	1,379	1,400	1,503	20.0	17.6	20.4	17.8	------
Peru	[2] 192	278	------	------	------	------	10.8	------	------	------
Union of South Africa [7]	[4] 803	(800)	779	741	1,058	7.5	------	7.7	7.6	7.9
Australia	7,603	9,764	9,540	10,755	10,000	11.9	11.2	13.1	15.3	11.0
New Zealand	241	276	174	167	158	28.7	30.4	24.0	32.8	------
Total Southern Hemisphere countries excluding Peru	26,492	29,230	30,104	31,705	32,963	------	------	------	------	------
Total all countries reporting all years shown:										
Excluding Russia	194,412	216,943	219,439	212,983	217,463	------	------	------	------	------
Including Russia	268,621	239,183	253,473	258,997	264,552	------	------	------	------	------

Division of Statistical and Historical Research. Official sources and the International Institute of Agriculture unless otherwise stated. Estimates given are for crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[6] Excluding Turkestan and Transcausasia.
[7] Excluding native locations.

TABLE 12.—*Wheat: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1917–1924*

Year beginning July 1	Percentage of year's receipts												
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Season
1917	7.4	12.4	19.3	18.0	13.7	7.6	4.7	3.9	3.7	4.1	3.1	2.1	100.0
1918	17.6	19.9	18.0	13.8	8.7	7.3	4.6	3.1	2.0	1.6	1.9	1.5	100.0
1919	17.1	23.2	15.6	11.1	7.5	5.7	4.2	3.0	2.9	3.1	3.4	3.2	100.0
1920	12.1	14.3	15.9	10.6	6.9	6.2	5.5	5.3	4.9	5.0	6.4	6.9	100.0
1921	19.1	18.2	16.4	10.6	6.8	5.4	4.4	4.9	3.9	3.2	3.5	3.6	100.0
1922	14.8	17.3	14.2	12.0	8.6	7.4	5.5	5.1	4.3	3.7	3.4	3.7	100.0
1923	13.4	17.6	16.7	13.7	9.5	6.2	4.6	4.8	3.3	2.9	3.7	3.6	100.0
1924	13.6	19.8	17.5	14.5	8.6	5.6	5.3	4.2	2.5	1.6	3.1	3.7	100.0

Division of Crop and Livestock Estimates.

TABLE 13.—*Wheat: Production in specified countries, average 1909–1913, annual 1922–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Average [1] 1909–1913	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE					
NORTH AMERICA					
Canada	197,119	399,786	474,199	262,097	416,850
United States	690,108	867,598	797,381	862,627	669,365
Mexico	[2] 11,481	13,626	13,657	10,357	10,321
Total North America	898,708	1,281,010	1,285,237	1,135,081	1,096,536
EUROPE					
United Kingdom:					
England and Wales	55,770	61,312	54,872	49,760	50,773
Scotland	2,273	2,520	2,320	1,829	1,968
Ireland	1,597	1,417	1,269	1,045	----------
Norway	306	643	587	493	561
Sweden	8,103	9,513	11,005	6,876	14,056
Denmark	6,322	9,249	8,858	5,864	8,818
Netherlands	4,976	6,161	6,211	4,631	5,135
Belgium	15,199	10,615	13,376	13,004	14,064
Luxemburg	615	173	301	312	484
France	325,644	243,315	275,569	281,179	329,077
Spain	130,446	125,469	157,110	121,778	162,594
Portugal	[3] 11,850	10,008	13,190	8,630	----------
Italy	184,393	161,641	224,836	170,144	240,849
Switzerland	3,314	2,348	3,593	3,112	3,518
Germany	131,274	71,926	106,448	89,199	118,213
Austria	12,813	7,422	8,889	8,490	11,986
Czechoslovakia	37,879	33,621	36,226	32,238	36,574
Hungary	71,493	54,729	67,705	51,568	67,553
Yugoslavia	62,024	44,472	61,068	57,771	82,317
Greece	[3] 16,273	9,553	13,356	9,661	11,441
Bulgaria	37,823	37,704	36,223	28,317	49,645
Rumania	[2] 158,672	92,007	102,120	70,421	104,608
Poland	63,675	42,378	49,735	32,498	57,871
Lithuania	3,264	3,274	2,965	3,319	5,291
Latvia	1,475	958	1,641	1,582	2,168
Esthonia	364	761	737	543	544
Finland	137	710	687	790	746
Russia, European	607,828	157,009	266,953	246,919	482,164
Total European countries reporting all years shown:					
Excluding Russia	[4] 1,334,527	1,032,474	1,246,438	1,045,379	1,380,854
Including Russia	1,942,355	1,189,483	1,513,191	1,292,298	1,863,018
NORTH AFRICA					
Morocco	(17,000)	12,894	20,050	28,660	21,078
Algeria	35,161	22,575	36,168	17,156	40,309
Tunis	6,224	3,674	9,921	5,181	9,921
Egypt	33,662	36,648	40,654	34,186	36,642
Total North Africa	92,047	75,791	106,793	85,183	107,950
ASIA					
Cyprus	2,216	2,496	2,611	1,851	----------
India	351,841	366,987	372,363	360,640	324,651
Russia (Asiatic)	151,113	[5] 45,359	[5] 59,932	134,808	178,966
Japanese Empire:					
Japan	25,088	29,315	26,578	25,406	29,539
Chosen	6,898	9,922	8,101	10,289	10,933
Formosa	169	91	76	----------	----------
Kwantung	[6] 40	48	----------	----------	----------
Total Northern Hemisphere countries reporting all years shown:					
Excluding Russia	2,709,109	2,795,499	3,045,510	2,661,978	2,950,463
Including Russia	3,468,050	2,997,867	3,372,185	3,043,705	3,611,593

[1] Where changes in boundary have occurred as a result of the world war estimates have been adjusted to correspond with the area within the post-war boundaries.

[2] Four-year average.

[3] One year only.

[4] The estimate for the five-year period 1909–1913 given in this table is somewhat larger than the figures obtained by averaging those five years in Table 14. This is because in the detailed table estimates for warring countries are for postwar boundaries, whereas in Table 14 they are for prewar territory. As a result, in excluding Russia, which lost territory in the war, a smaller area is excluded in the detailed table than in Table 14.

[5] Excluding Turkestan and Transcansia.

[6] Three-year average.

TABLE 13.—*Wheat: Production in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Average [1] 1909–1913	1922	1923	1924	1925 preliminary
SOUTHERN HEMISPHERE					
Argentina	147,059	195,842	247,807	191,138	214,765
Uruguay	[2] 6,517	5,152	13,344	9,909	
Chile	20,062	25,937	28,090	24,865	29,652
Peru	[2] 2,866	2,995			
Union of South Africa [7]	6,034	6,059	5,973	5,667	8,333
Australia	90,497	109,455	124,993	164,612	107,000
New Zealand	6,925	8,395	4,175	5,471	4,953
Total Southern Hemisphere countries reporting all periods shown	270,577	345,688	411,038	391,753	364,703
Total Northern Hemisphere and Southern Hemisphere countries reporting all years shown:					
Excluding Russia	2,979,686	3,141,187	3,456,548	3,053,730	3,315,166
Including Russia	3,738,627	3,343,555	3,783,233	3,435,450	3,976,296
Estimated world total: [3]					
Excluding Russia	[4] 3,006,000	3,184,000	3,510,000	3,099,000	3,349,000
Including Russia	3,765,000	3,386,000	3,837,000	3,481,000	4,010,000

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Production as reported is for the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[2] Four-year average.
[3] One year only.
[4] See p. 752 footnote [4].
[7] Excluding native locations, which produced 359,000 bushels in 1918 and 290,000 bushels in 1921.
[3] Excludes a few minor producing countries which do not enter into world trade or for which no estimates are available.

TABLE 14.—*Wheat: World production, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year	Production for countries reporting all years	Preliminary estimate of world production, excluding Russia	Preliminary estimate of total Europe excluding Russia	Selected countries						
				Russia [2]	France	Italy	India	Argentina	Australia	Canada
1909	2,256,298	2,804,000	1,240,000	846,166	359,174	190,378	285,197	131,010	90,414	166,744
1910	2,132,508	2,762,000	1,201,000	836,242	252,963	153,403	359,647	145,981	95,112	132,049
1911	2,276,539	3,028,000	1,347,000	563,485	322,339	192,395	375,629	166,190	71,636	230,924
1912	2,368,759	3,077,000	1,284,000	801,497	334,333	165,720	370,515	187,391	91,981	224,159
1913	2,378,490	3,080,000	1,301,000	1,027,662	319,370	214,772	368,219	104,723	103,344	231,717
1914	2,308,555	2,815,000	1,072,000	[3] 827,756	282,689	169,582	312,368	169,166	24,892	161,280
1915	2,629,132	3,477,000	1,125,000	[3] 826,784	222,776	170,541	376,992	169,019	179,066	393,543
1916	2,022,136	2,713,000	1,049,000		204,908	176,530	323,045	84,121	152,420	262,781
1917	2,022,502	2,553,000	740,000		134,575	139,999	382,144	234,818	114,734	233,743
1918	2,372,983	2,869,000	909,000		[4] 228,688	183,294	370,421	180,182	75,638	189,075
1919	2,238,391	2,797,000	899,000		[4] 187,091	169,769	280,261	216,954	45,975	193,260
1920	2,261,992	2,922,000	949,000	[4] 267,141	[4] 236,929	141,337	377,888	156,133	145,874	263,189
1921	2,349,616	3,133,000	1,216,000	[4] 171,384	[4] 323,467	[4] 194,071	250,357	191,012	129,089	300,858
1922	2,310,268	3,184,000	1,044,000	[4] 202,368	[4] 243,315	[4] 161,641	366,987	195,842	109,455	399,786
1923	2,479,146	3,509,000	1,261,000	[4] 326,685	[4] 275,569	[4] 224,836	372,363	247,807	124,993	474,199
1924	2,380,864	3,099,000	1,055,000	[4] 381,727	[4] 281,179	[4] 170,144	360,640	191,138	164,612	262,097
1925 [1]	2,352,180	3,349,000	1,381,000	[4] 661,130	[4] 329,077	[4] 240,849	324,651	214,765	107,000	416,850

Division of Statistical and Historical Research. For each year is shown the production during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Preliminary.
[2] Includes all Russian territory reporting for years named.
[3] Excludes Poland.
[4] Production within postwar boundaries, and therefore not comparable with earlier years.

TABLE 15.—*Wheat: Supply and distribution and per capita disappearance in the United States*

[Thousand bushels—i. e., 000 omitted]

Item	Year beginning July 1							
	Average, 1899–1908	Average, 1909–1913	Average, 1914–1920	1921	1922	1923	1924	1925
Supply:								
Stocks on farms July 1	46,423	28,872	32,631	56,707	32,359	35,894	30,980	29,348
Stocks in country mills and elevators, July 1	27,000	29,000	26,997	27,167	28,756	37,117	36,626	25,287
Commercial visible (Bradstreet's), July 1	31,817	24,168	19,290	9,966	20,342	29,403	38,597	31,803
Stocks of flour (in terms of wheat), July 1	7,114	8,024	8,240	6,651	7,461	10,048	9,207	8,168
New crop	677,927	690,108	844,605	814,905	867,598	797,381	862,627	669,365
Imports (flour included), July 1 to June 30	746	1,808	19,746	17,252	19,945	28,045	6,199	.....
Total supply	791,027	781,980	951,509	932,648	976,461	937,888	984,236	.....
Distribution:								
Exports (flour included), July 1–June 30	152,623	104,967	255,011	279,407	221,923	156,430	258,023	.....
Reexports, July 1–June 30	397	195	561	383	208	88	92	.....
Shipments (flour included) to Alaska, Hawaii, Porto Rico	1,722	2,445	2,476	2,576	2,787	2,851	2,662	.....
Estimated seed requirements	70,444	72,326	88,312	96,249	91,413	79,378	87,627	.....
Carry over on June 30—								
On farms	40,654	32,485	36,127	32,359	35,894	30,980	29,348	.....
In country mills and elevators [1]	25,400	31,600	26,449	28,756	37,117	36,626	25,287	.....
Commercial visible (Bradstreet's)	28,668	25,326	18,265	20,342	29,403	38,597	31,803	.....
Flour (in terms of wheat) [1]	6,986	8,628	7,938	7,461	10,048	9,207	8,168	.....
Total distribution	326,894	277,972	435,139	467,533	428,793	354,157	443,010	.....
Disappearance for food, feed, and loss	464,133	504,008	516,370	465,115	547,668	583,731	541,226	.....
Population, Jan. 1	82,614	94,378	102,880	108,541	109,956	111,371	112,786	.....
Per capita disappearance, food, feed, and loss, bushels	5.6	5.3	5.0	4.3	5.0	5.2	4.8	.....

Division of Statistical and Historical Research.

[1] Compiled from Chicago Daily Trade Bulletin. Stocks in country mills and elevators, from 1899-1918, are stocks in second hands less visible supply on July 1, as given by Chicago Daily Trade Bulletin.

TABLE 16.—*Wheat: Farm stocks, supplies, and shipments, United States, 1909–1925*

Year beginning July 1	Stocks in mills and elevators July 1 [1]	Old stocks on farms July 1 [2]	Crop			Total supplies (except visible)	Stocks on farms Mar. 1, following [2]	Stocks in mills and elevators Mar. 1, following [1]	Shipped out of county where grown [5]
			Quantity	Weight per bushel [3]	Quality [4]				
	1,000 bushels	*1,000 bushels*	*1,000 bushels*	*Pounds*	*Per cent*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1909	.....	14,171	700,434	57.9	90.4	714,605	163,371	.....	428,262
1910	.....	36,725	635,121	58.5	93.1	671,846	162,705	98,597	352,906
1911	.....	34,071	621,338	57.8	88.3	655,409	122,041	95,710	348,739
1912	.....	23,876	730,267	58.3	90.0	754,143	156,471	118,400	449,881
1913	.....	35,515	763,380	58.7	93.2	798,895	151,795	93,627	411,733
1914	.....	32,236	891,017	58.0	89.7	923,253	152,903	85,955	541,198
1915	.....	28,972	1,025,801	57.9	88.4	1,054,773	244,448	155,027	633,380
1916	.....	74,731	636,318	57.1	87.0	711,049	100,650	89,173	361,088
1917	.....	15,611	636,855	58.5	92.4	652,266	107,745	66,138	325,500
1918	.....	8,063	921,438	58.8	93.1	929,501	128,703	107,037	541,666
1919	19,672	19,261	967,979	56.3	82.1	1,006,912	169,904	123,233	591,552
1920	37,304	49,546	833,027	57.4	88.9	919,877	217,037	87,075	491,035
1921	27,167	56,707	814,905	57.0	85.8	898,779	134,253	75,071	502,470
1922	28,756	32,359	867,598	57.7	87.6	928,713	156,087	102,908	584,089
1923	37,117	35,894	797,394	57.4	87.5	870,405	137,721	98,284	505,785
1924	36,626	30,981	862,627	58.9	93.1	930,234	112,042	67,622	629,438
1925 [6]	25,287	29,348	669,365	58.3	89.0	724,000	99,279	75,429	459,397

Division of Crop and Livestock Estimates. Prior to 1918 stocks in mills and elevators not included.

[1] Based on percentage of crop as estimated by about 3,500 mill and elevator operators.
[2] Based on percentage of crop on farms as estimated by crop reporters.
[3] Based on estimates of crop reporters on Nov. 1.
[4] Percentage of "a high medium grade" as estimated by crop reporters at time of harvest.
[5] Based on percentage shipped out as estimated by crop reporters.
[6] Preliminary.

TABLE 17.—*Wheat: Receipts and shipments, 11 primary markets, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning July 1	Chicago		Milwaukee		Minneapolis		Duluth		St. Louis		Toledo	
	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments
1909	27,542	20,586	8,482	2,757	92,833	20,546	54,687	50,280	22,064	19,622	4,426	1,474
1910	27,400	17,259	10,062	7,875	90,774	20,866	28,628	25,352	20,127	20,082	4,122	1,556
1911	35,563	30,003	8,497	3,411	96,889	52,745	30,598	25,571	15,336	12,790	6,930	4,644
1912	44,168	43,325	10,337	5,685	126,161	32,761	83,530	75,435	38,792	27,179	4,734	2,475
1913	50,884	47,905	6,372	3,442	103,679	28,994	62,799	64,799	27,244	22,242	5,802	3,704
Average 1909–1913	37,111	31,816	8,750	4,634	102,067	31,182	52,048	48,287	24,713	20,383	5,203	2,771
1914	107,708	91,112	9,550	7,010	112,716	39,510	62,268	59,867	34,196	26,913	7,089	4,168
1915	85,819	61,531	7,337	3,505	163,202	54,932	95,674	82,540	42,226	31,046	9,965	5,571
1916	56,708	47,342	10,595	8,099	119,701	39,689	30,978	36,789	41,024	33,080	5,719	2,590
1917	13,735	8,118	13,138	1,336	82,229	19,072	16,602	13,646	17,023	13,234	4,583	1,379
1918	54,533	67,122	15,535	12,575	117,787	38,174	88,383	86,932	42,547	25,621	5,940	1,348
1919	74,167	57,215	7,006	3,674	119,419	37,468	18,317	13,664	45,266	32,956	8,046	2,285
1920	30,615	27,886	4,424	2,556	118,579	50,724	45,083	43,272	45,316	31,479	5,052	1,400
Average 1914–1920	60,469	51,475	9,655	5,536	119,090	39,938	51,044	48,101	38,228	27,761	6,628	2,677
1921	51,548	45,803	9,676	7,464	105,343	43,237	49,226	49,843	39,009	29,404	6,753	3,622
1922	51,660	44,203	3,681	3,145	133,830	48,648	65,541	55,036	40,605	33,561	10,472	5,524
1923	49,804	31,683	2,307	2,397	105,958	46,425	38,201	36,270	33,119	25,829	15,401	6,851
1924	71,009	67,028	8,934	7,895	104,037	57,166	111,194	103,449	44,047	37,101	12,434	4,942
1924												
July	3,590	1,809	165	200	5,523	3,234	2,264	3,426	3,693	1,843	580	207
August	28,347	17,809	2,310	1,536	6,720	4,471	2,704	2,506	8,774	4,633	2,801	91
September	15,059	16,268	2,254	2,072	21,076	7,608	16,764	10,034	5,567	4,142	1,721	953
October	8,102	11,005	1,656	1,672	16,859	10,388	32,784	28,013	5,354	4,304	1,702	694
November	3,363	2,963	1,163	830	11,909	6,507	27,633	27,804	3,345	2,885	1,798	145
December	2,638	3,238	181	576	9,865	3,861	10,063	11,916	2,876	2,928	1,494	216
1925												
January	1,702	3,759	184	176	8,949	3,951	1,821	515	3,541	2,875	328	264
February	1,511	2,545	222	170	5,293	2,811	2,634	922	2,822	3,045	580	136
March	1,055	2,498	398	154	5,998	2,879	2,135	515	2,899	4,610	116	974
April	962	1,318	121	181	3,319	3,002	1,909	3,297	1,309	2,400	582	774
May	3,249	1,386	104	144	3,128	5,574	4,811	8,491	1,904	1,729	409	291
June	1,431	2,430	176	184	5,398	2,880	5,672	6,010	1,963	1,707	323	197
July	6,008	1,797	747	90	5,448	3,435	1,475	5,324	6,841	4,287	879	53
August	5,257	4,956	1,081	1,203	13,058	5,287	3,020	3,690	4,259	3,854	828	62
September	2,853	1,129	456	45	20,709	7,703	22,906	11,836	2,101	1,776	915	122
October	1,825	2,139	393	225	11,966	5,577	10,828	10,998	1,717	1,663	1,099	407
November	739	900	212	68	11,956	5,306	10,894	12,730	2,115	1,383	1,173	316
December	1,571	995	486	95	13,159	4,712	6,728	8,848	2,623	2,010	918	334

TABLE 17.—*Wheat: Receipts and shipments, 11 primary markets, 1909–1925*—Continued

[Thousands of bushels—i. e., 000 omitted]

Year beginning July 1	Detroit		Kansas City		Peoria		Omaha		Indianapolis		Total	
	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments
1909	1,821	167	34,092	22,057	1,304	1,002	(1)	(1)	(1)	(1)	247,251	138,491
1910	2,003	105	40,537	26,709	1,225	1,074	(1)	(1)	(1)	(1)	224,878	120,878
1911	2,861	401	23,627	16,970	1,518	1,106	11,030	9,690	176	173	233,025	157,504
1012	977	715	48,374	33,415	1,951	1,616	20,193	13,133	1,560	462	380,777	236,201
1913	1,442	842	32,152	23,730	1,629	1,424	16,453	11,958	1,898	812	310,354	209,852
Average 1909–1913	1,821	446	35,756	24,576	1,525	1,244	15,892	11,594	1,211	482	279,257	172,585
1914	2,763	2,012	77,745	65,650	3,786	3,527	17,767	11,639	3,028	916	438,616	312,324
1915	2,809	1,580	70,442	51,632	4,503	5,336	25,613	16,215	4,851	1,967	512,441	315,855
1916	2,724	1,082	68,720	62,878	2,870	2,468	31,194	29,221	2,890	929	373,123	264,167
1917	1,597	260	22,226	8,255	2,195	1,422	8,565	6,096	2,990	1,192	184,883	74,010
1918	1,608	306	54,106	35,696	3,405	3,371	19,730	15,115	6,477	2,080	410,051	288,340
1919	1,688	289	92,215	55,673	3,663	4,285	26,585	21,992	7,471	1,340	403,843	230,841
1920	1,656	149	87,148	64,637	2,199	2,011	28,192	24,372	4,491	458	372,755	248,944
Average 1914–1920	2,121	811	67,515	49,203	2,232	3,203	22,521	17,807	4,600	1,269	385,102	247,783
1921	1,578	234	90,574	69,085	2,564	1,709	25,310	25,559	4,056	890	385,637	276,850
1922	1,797	80	77,684	52,464	4,355	4,070	25,356	19,505	5,185	909	420,166	267,145
1923	1,884	120	60,516	33,053	2,221	1,678	17,896	13,441	6,081	1,450	333,388	199,197
1924	1,915	304	89,444	64,590	2,095	1,699	29,120	26,529	4,336	811	478,555	371,514
1924												
July	43		19,732	4,860	100	73	2,032	874	404	11	38,126	16,537
August	203	6	23,698	12,677	670	527	8,541	5,485	1,354	79	86,012	49,820
September	499	102	11,657	10,637	324	328	4,383	4,284	444	115	79,748	56,543
October	224	5	10,677	7,714	214	174	5,183	4,795	335	67	83,090	68,831
November	184	4	5,145	4,933	135	106	1,994	2,626	293	10	56,962	48,813
December	209	4	3,348	5,021	68	49	1,158	1,552	195	136	32,095	29,497
1925												
January	130		2,972	4,405	242	94	1,689	1,886	417	193	21,975	18,118
February	175	116	2,687	3,500	53	97	1,305	1,677	326	111	17,608	15,130
March	79	23	2,375	4,383	48	33	944	1,631	143	28	16,190	17,728
April	38	16	874	2,486	41	20	372	418	104	53	9,631	13,965
May	86	13	2,326	2,095	115	63	920	874	186	7	17,238	20,667
June	45	15	3,953	1,879	85	135	599	427	135	1	19,780	15,865
July	97		10,624	4,513	191	138	2,462	961	1,199	36	35,971	20,634
August	144		8,576	3,811	250	216	2,996	2,160	955	57	40,424	25,783
September	106		4,550	2,511	273	266	1,688	1,770	289	26	56,846	27,184
October	74		3,409	2,115	193	188	1,324	1,159	209	38	33,037	24,409
November	140	35	4,307	1,346	200	174	1,010	450	277	114	33,023	22,822
December	94	31	5,324	1,916	97	99	1,388	845	91	157	32,479	20,042

Division of Statistical and Historical Research. Compiled from the Chicago Daily Trade Bulletin and the Annual Reports of the Chicago Board of Trade.

[1] No report

TABLE 18.—*Wheat: Estimated requirements, surplus, and deficiency, by States, 1925–26*

Geographic division and State	Population, Jan. 1, 1926	Estimated, per capita consumption		Estimated requirements for food and feed, average 1920–1924 per capita basis	Estimated seed requirements [3]	Total requirements, average 1920–1924 food and feed basis plus seed	December, 1925, production estimate	Surplus (+) or deficiency (−) for export and unaccounted disposition 1925–26, average 1920–1924 per capita basis
		1911 [1]	Average 1924 [2]					
		Bushels	*Bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
New England:								
Maine	788,383	4.7	4.2	3,311	12	3,323	168	−3,155
New Hampshire	452,817	5.0	4.4	1,992	.....	1,992	.....	−1,992
Vermont	352,428	5.4	4.8	1,692	4	1,696	42	−1,654
Massachusetts	4,170,747	5.0	4.4	18,351	.....	18,351	.....	−18,351
Rhode Island	686,027	4.3	3.8	2,607	.....	2,607	.....	−2,607
Connecticut	1,589,089	4.5	4.0	6,356	.....	6,356	.....	−6,356
Middle Atlantic:								
New York	11,232,724	5.4	4.8	53,917	570	54,487	5,998	−48,489
New Jersey	3,640,142	5.0	4.4	16,017	108	16,125	1,218	−14,907
Pennsylvania	9,544,843	5.8	5.1	48,679	2,191	50,870	22,720	−28,150
E. North Central:								
Ohio	6,535,462	6.2	5.5	35,945	3,237	39,182	24,002	−15,180
Indiana	3,109,558	5.7	5.0	15,548	2,640	18,188	25,700	+7,512
Illinois	7,147,791	5.6	5.0	35,739	2,767	38,506	35,880	−2,626
Michigan	4,339,756	5.0	4.4	19,095	1,529	20,624	13,996	−6,628
Wisconsin	2,865,311	5.2	4.6	13,180	232	13,412	2,414	−10,998
W. North Central:								
Minnesota	2,631,005	7.2	6.4	16,838	3,207	20,045	29,110	+9,065
Iowa	2,421,421	5.3	4.7	11,381	706	12,087	6,952	−5,135
Missouri	3,490,936	5.2	4.6	16,058	1,674	17,732	22,077	+4,345
North Dakota	641,192	7.2	6.4	4,104	12,967	17,071	112,378	+95,307
South Dakota	685,303	6.5	5.8	3,975	3,675	7,650	32,378	+24,728
Nebraska	1,377,936	5.8	5.1	7,027	4,167	11,194	34,150	+22,956
Kansas	1,816,941	5.8	5.1	9,266	13,686	22,952	74,810	+51,858
South Atlantic:								
Delaware	238,955	5.0	4.4	1,051	220	1,271	1,906	+635
Maryland	1,570,249	5.0	4.4	6,909	875	7,784	10,920	+3,136
District of Columbia	520,937	5.3	4.7	2,448	.....	2,448	.....	−2,448
Virginia	2,502,506	4.5	4.0	10,010	972	10,982	8,946	−2,036
West Virginia	1,653,504	5.7	5.0	8,268	223	8,491	1,728	−6,763
North Carolina	2,834,908	4.5	4.0	11,340	511	11,851	4,466	−7,385
South Carolina	1,815,035	4.3	3.8	6,897	54	6,951	506	−6,445
Georgia	3,120,243	4.0	3.5	10,921	118	11,039	1,040	−9,999
Florida	1,290,355	4.5	4.0	5,161	.....	5,161	.....	−5,161
E. South Central:								
Kentucky	2,515,948	4.5	4.0	10,064	339	10,403	3,304	−7,099
Tennessee	2,457,660	4.1	3.6	8,848	479	9,327	4,588	−4,739
Alabama	2,512,291	4.0	3.5	8,793	10	8,803	77	−8,726
Mississippi	1,790,618	4.0	3.5	6,267	10	6,277	90	−6,187
W. South Central:								
Arkansas	1,891,447	4.0	3.5	6,620	34	6,654	390	−6,264
Louisiana	1,909,363	4.5	4.0	7,637	.....	7,637	.....	−7,637
Oklahoma	2,318,305	6.0	5.3	12,287	6,125	18,412	28,282	+9,870
Texas	5,262,742	5.4	4.8	25,261	1,976	27,237	6,552	−20,685
Mountain:								
Montana	683,715	5.8	5.1	3,487	5,236	8,723	34,601	+25,878
Idaho	515,232	6.5	5.8	2,988	1,128	4,116	26,042	+21,926
Wyoming	232,525	6.3	5.6	1,302	257	1,559	2,624	+1,065
Colorado	1,049,582	6.0	5.3	5,563	2,352	7,915	14,532	+6,617
New Mexico	386,036	7.9	7.0	2,702	210	2,912	492	−2,420
Arizona	436,183	7.2	6.4	2,792	41	2,833	672	−2,161
Utah	508,789	6.1	5.4	2,747	389	3,136	5,949	+2,813
Nevada	77,407	6.1	5.4	418	24	442	468	+26
Pacific:								
Washington	1,524,254	6.0	5.3	8,079	3,053	11,132	36,840	+25,708
Oregon	870,270	6.1	5.4	4,699	2,324	7,023	18,900	+11,877
California	4,248,084	5.6	5.0	21,240	1,245	22,485	11,457	−11,028
United States	116,256,955	5.31	4.70	545,877	81,577	627,454	669,365	+41,911

Division of Statistical and Historical Research.

[1] The consumption figures in this column were obtained by a survey in 1911 by the Bureau of Crop Estimates.

[2] The figures in this column shown for the individual States were computed on the ratio between the United States consumption in 1911 (5.31 bushels) and the per capita disappearance during the five years July, 1920–June 30, 1925 (4.701 bushels). The average disappearance for the latter period was 88.53 per cent of the 1911 disappearance.

[3] The seed requirements are based on the spring acreage of 1925 and the 1925 fall sowing according to the December, 1925, estimates. The rate of seeding in each State was applied to the acreage in that State.

TABLE 19.—*Wheat: Visible supply in the United States, 1909–1925*

CHICAGO BOARD OF TRADE [1]

[Thousand bushels—i. e., 000 omitted]

Year beginning July 1	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1909	9,756	7,609	9,166	19,442	27,001	31,086 [2]	27,738	26,463	25,515	29,013	26,228	18,647
1910	12,034	12,375	26,457	34,969	40,120	42,989	44,282	43,251	39,868	34,152	27,605	26,888
1911	23,803	41,316	48,057	52,709	65,199	69,948	70,489	60,425	57,080	51,042	41,722	30,847
1912	23,350	18,841	19,586	31,658	41,712	55,400	65,342	64,913	63,786	58,996	47,157	37,940
1913	30,163	37,677	44,530	52,061	55,105	58,508	63,743	60,806	57,021	51,862	43,378	29,775
Av. 1909–1913	19,833	23,564	29,559	38,168	45,827	51,658	54,319	51,172	48,654	45,013	37,218	28,809
1914	13,248	29,744	31,534	51,586	65,922	74,086	72,861	60,252	49,686	39,323	26,439	19,682
1915	7,948	6,582	7,767	15,900	22,639	48,797	67,311	68,458	63,553	57,387	48,864	44,463
1916	42,628	40,889	54,660	57,418	60,703	62,026	59,534	48,721	44,916	39,317	25,756	28,896
1917	14,209	5,819	5,058	7,789	14,908	21,031	18,936	13,869	9,739	5,381	2,194	1,146
1918	785	17,155	48,821	90,623	122,604	121,561	119,711	130,613	118,219	92,546	49,502	23,702
1919	8,681	20,903	56,828	84,909	96,352	89,742	75,363	60,359	50,875	44,787	42,784	37,101
1920	19,799	17,487	20,758	27,391	35,500	43,127	43,063	34,212	28,159	18,463	13,448	8,334
Av. 1914–1920	15,328	19,797	32,204	47,945	59,804	65,767	65,254	59,498	52,164	42,458	29,855	23,246
1921	8,061	24,658	38,741	52,795	54,333	47,763	49,468	42,280	40,055	35,897	31,281	26,341
1922	17,773	19,667	27,349	32,354	32,278	33,428	37,673	46,776	47,507	45,785	44,521	32,981
1923	26,312	36,693	56,541	63,932	69,189	71,808	74,852	67,162	64,072	59,549	51,461	43,111
1924	34,901	41,734	69,119	81,897	89,902	100,363	91,492	77,510	70,677	57,434	45,681	34,968
1925	26,670	29,655	32,566	49,371	43,920	44,780						

BRADSTREET'S [3]

1909	12,771	12,611	15,514	28,589	37,820	41,688	37,949	36,638	34,461	37,558	33,771	24,795
1910	16,396	17,053	38,352	48,437	53,420	57,002	59,369	56,357	50,566	42,697	34,656	32,769
1911	29,639	46,389	54,581	61,500	73,792	81,215	81,501	70,748	66,982	59,826	48,022	35,994
1912	27,615	23,595	26,862	40,998	52,494	67,575	77,471	76,131	73,895	69,000	53,508	43,697
1913	34,420	43,198	51,980	61,485	66,663	72,061	74,854	71,264	66,191	59,931	49,327	38,692
Av. 1909–1913	24,168	28,569	37,458	48,202	56,838	63,908	66,229	62,228	58,419	53,802	43,857	34,183
1914	17,136	36,456	39,964	61,784	76,262	86,332	85,957	81,776	58,923	46,287	31,407	22,871
1915	10,734	9,361	12,679	22,498	33,338	60,678	80,150	77,834	73,748	66,691	57,658	52,512
1916	50,515	49,591	65,754	70,420	75,455	76,191	73,584	59,477	54,160	48,525	32,831	34,876
1917	19,901	11,692	10,315	13,072	22,855	29,633	26,476	20,436	15,484	10,180	6,656	4,379
1918	2,465	20,462	54,236	98,155	131,852	131,584	129,627	140,607	127,207	100,505	55,247	27,626
1919	10,873	25,968	65,479	95,550	107,783	101,058	85,117	68,494	58,632	51,909	47,756	41,233
1920	23,404	20,226	24,195	32,169	41,596	48,273	47,797	38,475	31,945	22,229	17,584	10,598
Av. 1914–1920	19,290	24,822	38,946	56,235	69,877	76,250	75,530	69,586	60,014	49,475	35,591	27,728
1921	9,966	28,727	47,159	62,758	62,767	53,507	56,776	48,802	46,714	42,287	36,644	31,497
1922	20,342	23,077	32,479	38,025	39,023	39,764	43,856	53,823	54,562	51,862	49,521	37,203
1923	29,403	40,526	63,922	72,930	79,034	82,269	84,030	75,111	72,914	66,739	50,383	48,686
1924	38,597	46,193	79,700	92,353	100,712	108,997	99,121	84,476	76,437	62,766	49,529	38,328
1925	29,285	34,041	39,800	56,639	52,394	52,686						

Division of Statistical and Historical Research.

[1] Compiled from the annual reports of the Chicago Board of Trade to December, 1922. January, 1923, to date from the Chicago Daily Trade Bulletin. Reported on the Saturday nearest the first of the month. The Chicago Board of Trade "visible" includes grain stored east of the Rockies only. It covers 22 interior and seaboard points of large accumulation and grain in transit by canals and lakes.

[2] From the Chicago Daily Trade Bulletin.

[3] Compiled from Bradstreet's. Includes grain stored at approximately fifty interior and seaboard points of accumulation and grain in transit by canals and lakes; also Pacific coast stocks at Portland, Tacoma, and Seattle. Reported on the Saturday nearest the first of the month.

TABLE 20.—*Wheat: Classification of cars graded by licensed inspectors, all inspection points*

Year beginning July 1	Total of all classes and subclasses under each grade, by cars, annual inspections 1917–1924													
	Receipts							Shipments						
	No. 1	No. 2	No. 3	No. 4	No. 5	Sample	Total	No. 1	No. 2	No. 3	No. 4	No. 5	Sample	Total
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
1917	60, 848	91, 143	59, 421	23, 435	15, 766	15, 402	266, 015	17, 926	26, 559	17, 833	6, 503	4, 299	3, 625	76, 745
1918	300, 264	203, 965	63, 827	26, 660	10, 017	18, 247	622, 980	246, 577	87, 173	14, 106	4, 496	1, 519	3, 181	357, 052
1919	45, 427	192, 003	187, 533	101, 279	49, 423	28, 799	604, 464	16, 602	143, 770	86, 744	18, 460	6, 335	4, 648	276, 559
1920	153, 069	241, 339	124, 184	49, 703	38, 367	49, 675	656, 337	44, 837	268, 752	44, 407	9, 889	8, 930	7, 724	384, 539
1921	91, 844	269, 250	147, 537	51, 763	27, 090	59, 290	647, 374	21, 414	255, 512	34, 243	7, 864	4, 753	11, 662	335, 448
1922	138, 020	210, 527	131, 368	48, 466	15, 626	38, 998	583, 005	28, 387	226, 008	37, 610	6, 421	2, 823	6, 495	307, 744
1923	107, 481	163, 393	101, 759	43, 887	24, 069	24, 984	465, 573	45, 617	137, 406	28, 290	5, 605	4, 978	5, 816	227, 712
1924	191, 525	263, 763	97, 583	43, 749	10, 298	18, 559	625, 477	104, 344	260, 291	14, 293	4, 160	2, 194	3, 617	388, 899
Class	Total inspections, by grade and class, July 1, 1924, to June 30, 1925													
Hard Red Spring	78, 680	19, 236	13, 018	8, 758	1, 817	2, 291	123, 800	72, 426	6, 932	2, 487	1, 242	285	565	83, 937
Durum	6, 575	17, 205	5, 423	4, 237	479	912	34, 831	1, 411	24, 757	672	115	27	48	27, 030
Hard Red Winter	79, 421	182, 837	52, 800	16, 389	4, 788	10, 215	346, 450	24, 803	192, 397	7, 028	1, 323	991	1, 293	227, 835
Soft Red Winter	7, 710	19, 792	12, 096	6, 422	1, 610	2, 787	50, 417	2, 142	17, 968	2, 602	737	374	523	24, 346
White	2, 000	6, 930	6, 214	1, 956	272	170	17, 542	213	4, 606	309	36	1	7	5, 172
Mixed	17, 139	17, 763	8, 032	5, 987	1, 332	2, 184	52, 437	3, 349	13, 631	1, 195	707	516	1, 181	20, 579
Year beginning July 1	Total of all classes and subclasses under each grade, by percentages, annual inspections 1917–1924													
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1917	22. 9	34. 3	22. 3	8. 8	5. 9	5. 8	100	23. 4	34. 6	23. 2	8. 5	5. 6	4. 7	100
1918	48. 2	32. 7	10. 2	4. 3	1. 6	3. 0	100	69. 1	24. 4	3. 9	1. 3	0. 4	0. 9	100
1919	7. 5	31. 8	31. 0	16. 7	8. 2	4. 8	100	6. 0	52. 0	31. 3	6. 7	2. 3	1. 7	100
1920	23. 3	36. 8	18. 9	7. 6	5. 8	7. 6	100	11. 7	69. 9	11. 5	2. 6	2. 3	2. 0	100
1921	14. 2	41. 6	22. 8	8. 0	4. 3	9. 1	100	6. 4	76. 2	10. 2	2. 3	1. 4	3. 5	100
1922	23. 7	36. 1	22. 5	8. 3	2. 7	6. 7	100	9. 2	73. 5	12. 2	2. 1	0. 9	2. 1	100
1923	25. 1	35. 1	21. 8	9. 4	5. 2	5. 4	100	20. 0	60. 3	12. 4	2. 5	2. 2	2. 6	100
1924	30. 6	42. 2	15. 6	7. 0	1. 6	3. 0	100	26. 8	66. 9	3. 7	1. 1	0. 6	0. 9	100
Class	Total inspections, by grade and class, July 1, 1924, to June 30, 1925													
Hard Red Spring	63. 6	15. 5	10. 5	7. 1	1. 5	1. 8	100	86. 3	8. 2	3. 0	1. 5	0. 3	0. 7	100
Durum	18. 9	49. 4	15. 6	12. 1	1. 4	2. 6	100	5. 2	91. 6	2. 5	0. 4	0. 1	0. 2	100
Hard Red Winter	22. 9	52. 8	15. 2	4. 7	1. 4	3. 0	100	10. 9	84. 4	3. 1	0. 6	0. 4	0. 6	100
Soft Red Winter	15. 3	39. 3	24. 0	12. 7	3. 2	5. 5	100	8. 8	73. 8	10. 7	3. 0	1. 5	2. 2	100
White	11. 4	39. 5	35. 4	11. 1	1. 6	1. 0	100	4. 1	89. 1	6. 0	0. 7	----------	0. 1	100
Mixed	32. 7	33. 9	15. 3	11. 4	2. 5	4. 2	100	16. 3	66. 2	5. 8	3. 4	2. 5	5. 8	100

TABLE 21.—*Dockage assessed on wheat at Minnesota markets, 1909–1924*

Year beginning Sept. 1	Number of cars on which dockage is assessed	Amount of wheat in cars [1]	Amount of dockage assessed [2]	Percentage of dockage assessed	Year beginning Sept 1	Number of cars on which dockage is assessed	Amount of wheat in cars [1]	Amount of dockage assessed [2]	Percentage of dockage assessed
	Cars	*Bushels*	*Bushels*	*Per ct.*		*Cars*	*Bushels*	*Bushels*	*Per ct.*
1909	150, 699	195, 908, 700	5, 354, 837. 8	2. 7	1917	88, 830	115, 479, 000	4, 041, 765. 0	3. 5
1910	91, 995	119, 593, 500	2, 272, 276. 5	1. 9	1918	157, 452	204, 687, 600	4, 776, 044. 0	2. 3
1911	103, 399	134, 418, 700	4, 054, 964. 1	3. 0	1919	85, 657	111, 354, 100	5, 010, 934. 5	4. 5
1912	182, 800	237, 640, 000	6, 495, 493. 3	2. 7	1920	127, 976	166. 368, 800	7, 486, 596. 0	4. 5
1913	137, 483	178, 727, 900	6, 553, 356. 3	3. 7	1921	107, 452	139, 687, 600	5. 343, 050. 7	3. 8
1914	126, 897	164, 966, 100	5, 911, 285. 2	3. 6	1922	138, 668	180, 268, 400	7, 589, 299. 6	4. 2
1915	219, 165	284, 914, 500	10, 826, 751. 0	3. 8	1923	97, 469	133, 801, 162	7, 091, 462. 0	5. 3
1916	94, 942	123, 424, 600	5, 986, 093. 1	4. 8	1924	161, 426	219, 377. 934	7, 311. 867. 0	3. 3

Division of Statistical and Historical Research. Compiled from Minnesota State Grain Inspection Department data.

[1] Based on 1,300 bushels to the car, from 1909–1922; on number of cars and total wheat, 1923–24.
[2] Based on 60 pounds to bushel.

TABLE 22.—*Wheat, and wheat including flour: Domestic, exports from the United States by months, 1910–1925*

[Thousand bushels—i. e., 000 omitted]

WHEAT

Year ended June 30	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1910	2, 783	6, 157	7, 156	8, 566	8, 427	3, 727	1, 428	1, 166	1, 204	2, 953	2, 487	626	46, 680
1911	862	2, 131	2, 226	3, 260	2, 505	3, 409	2, 802	1, 349	1, 883	1, 315	1, 371	616	23, 729
1912	3, 260	6, 253	5, 088	3, 350	2, 299	3, 084	2, 043	1, 243	1, 352	1, 386	603	199	30, 160
1913	545	5, 800	13, 153	15, 255	10, 584	9, 490	8, 441	4, 356	4, 569	6, 590	7, 159	5, 661	91, 603
1914	9, 404	24, 346	11, 971	7, 434	3, 852	5, 727	4, 985	3, 947	3, 457	3, 066	6, 810	7, 395	92, 394
Av. 1910–1914	3, 371	8, 937	7, 919	7, 573	5, 533	5, 087	3, 940	2, 412	2, 493	3, 062	3, 686	2, 900	56, 913
1915	26, 357	24, 341	25, 867	19, 578	19, 182	28, 876	24, 088	24, 432	20, 541	22, 758	14, 227	9, 396	259, 643
1916	7, 956	16, 838	21, 526	18, 040	13, 500	12, 624	13, 461	15, 054	17, 293	16, 506	14, 571	5, 905	173, 274
1917	6, 355	11, 060	13, 108	11, 985	14, 279	14, 473	18, 906	10, 384	7, 885	14, 233	11, 359	15, 804	149, 831
1918	5, 059	5, 170	2, 613	5, 415	4, 878	4, 491	1, 914	1, 048	1, 687	1, 024	353	467	34, 119
1919	225	15, 120	26, 848	21, 319	16, 087	25, 084	9, 943	5, 992	10, 208	17, 338	14, 029	16, 390	178, 583
1920	5, 834	12, 941	17, 090	13, 687	15, 116	9, 520	8, 480	4, 938	6, 939	4, 176	10, 864	12, 846	122, 431
1921	23, 838	27, 694	30, 771	35, 803	26, 035	25, 903	21, 345	18, 469	14, 601	17, 642	25, 932	25, 235	293, 268
Av. 1915–1921	10, 804	16, 166	19, 689	17, 975	15, 582	17, 282	14, 019	11, 474	11, 308	13, 382	13. 048	12. 292	173, 021
1922	24, 842	58, 537	30, 842	18, 206	13, 955	10, 451	10, 038	5, 577	7, 645	4, 856	9, 366	14, 006	208, 321
1923	14, 979	33, 703	25, 987	18, 282	10, 577	9, 676	7, 297	5, 991	4, 291	4, 943	9, 973	9, 252	154, 951
1924	8, 843	14, 198	15, 408	9, 239	4, 148	4, 950	4, 421	3, 095	2, 958	3, 747	2, 811	4, 975	78, 793
1925	4, 048	16, 835	32, 662	45, 128	27, 831	17, 791	8, 484	7, 387	9, 960	8, 424	9, 870	7, 070	195, 490
1926	5, 295	7, 901	9, 391	4, 354	4, 696	3, 695							

WHEAT, INCLUDING FLOUR, IN TERMS OF GRAIN [1]

1910	4, 629	8, 835	12, 472	13. 898	12, 996	9, 126	4, 973	3, 527	3, 737	5, 330	4, 977	2, 864	87, 364
1911	3, 132	4, 948	6, 185	7, 451	6, 755	8, 043	7. 001	5, 128	5, 617	5, 242	5, 852	3, 958	69, 312
1912	6, 276	10, 176	10, 700	8, 823	6, 576	7, 981	5, 816	5, 031	5, 853	4, 923	4, 385	3, 149	79, 689
1913	3, 008	8, 911	16, 987	20, 746	16, 154	14, 488	13, 446	9, 194	8, 800	10, 819	11, 178	9, 149	142, 880
1914	12, 966	28, 348	17, 513	13, 111	9, 617	10, 621	9, 704	7, 555	6, 953	7. 040	10, 915	11, 247	145, 590
Av. 1910–1914	6, 002	12, 244	12, 771	12, 806	10, 419	10, 052	8, 188	6, 087	6, 192	6. 671	7. 461	6, 074	104, 967
1915	30, 174	27, 618	31, 433	25, 664	25, 897	37, 122	32, 027	31, 428	28, 145	29, 224	20, 288	13, 445	332, 465
1916	11, 661	20, 439	26, 301	23, 769	19, 264	20, 416	20, 892	21, 066	24, 071	22, 424	20, 593	12, 221	243, 117
1917	10, 583	14, 919	18, 160	16, 131	19, 006	18, 689	24, 003	13, 560	12, 439	18, 505	16, 221	21, 358	203, 574
1918	8, 422	9, 736	7, 182	11, 523	10, 614	15, 301	12, 450	10, 492	12, 207	12, 364	10, 915	11, 373	132, 579
1919	11, 154	19, 496	28, 348	24, 531	21, 989	33, 539	22, 103	15, 842	20, 314	31, 129	26, 306	32, 652	287, 402
1920	13, 624	20, 310	25, 029	20, 979	23, 396	15, 428	12, 274	10, 581	16, 881	13, 721	25, 888	21, 754	219, 865
1921	34, 655	32, 674	34, 994	43, 033	30, 989	30, 186	27, 105	23, 074	20, 765	24, 801	31, 624	32, 177	366, 077
Av. 1915–1921	17, 182	20, 742	24, 492	23, 662	21, 593	24, 383	21, 551	18, 006	19, 260	21, 738	21, 691	20, 711	255, 011
1922	30, 413	66, 963	38, 950	25, 211	19, 563	15, 015	15, 011	10, 991	14, 374	10, 449	14, 267	18, 200	279, 407
1923	19, 124	38, 964	31, 839	25, 077	17, 578	16, 428	12, 519	12, 197	10, 725	10, 195	14, 396	12, 881	221, 923
1924	12, 822	19, 929	22, 465	18, 652	12, 147	13, 000	12, 143	10, 019	9, 374	8, 416	7, 206	10, 257	156, 430
1925	7, 600	21, 106	39, 244	53, 463	35, 102	24, 326	12, 928	11, 597	16, 202	12, 721	12, 976	10, 758	258, 023
1926	8, 789	11, 832	12, 992	8, 910	8, 621	8, 235							

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, July, 1910–December, 1925.

[1] Includes exports of flour milled from Canadian wheat imported in bond. Does not include reexports.

TABLE 23.—*Wheat, flour not included: Imports into the United States from Canada, 1914–1926* [1]

[Thousand bushels—i. e., 000 omitted]

Year ended June 30	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1914	4	(2)	(2)	231	104	127	885	175	235	13	73	43	1,890
1915	35	69	7	3	102	5	14	47	35	13	19	21	270
1916	60	441	348	1,755	796	470	386	218	194	258	504	243	5,673
1917	128	394	943	1,507	2,606	838	805	1,337	2,993	3,125	5,459	3,574	23,709
1918	1,954	1,398	840	1,712	5,674	3,732	7,339	27	218	71	958	761	24,684
1919	508	24	27	55	176	168	39	42	44	281	1,474	1,893	4,731
1920	118	28	143	564	404	309	753	534	526	50	410	124	3,963
1921	36	170	1,842	9,800	9,522	11,185	4,504	4,403	2,671	4,564	1,902	89	50,688
1922	713	239	81	878	1,184	2,052	3,120	199	2,673	483	1,231	1,610	14,463
1923	3,070	1,152	782	2,566	3,176	2,616	252	211	345	2,812	946	122	18,050
1924	1,836	596	1,234	2,832	5,264	3,050	2,955	2,413	2,574	2,209	1,364	949	27,276
1925	1,240	46	309	420	348	702	331	1,527	61	374	712	98	6,168
1926	722	699	1,371	3,049	2,892	2,065							

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, July, 1914–December, 1925.

[1] Includes all imports, free, dutiable, or in bond.
[2] Less than 500 bushels.

TABLE 24.—*Wheat: Imports from Canada; for consumption, duty paid; for milling in bond and export; and imports on which drawback has been allowed, June 1, 1921, to December 31, 1925.*

Year	General imports from Canada	Imports for consumption (duty paid)	Imports on which drawback was allowed [1]	Imports for milling in bond and export
	Bushels	*Bushels*	*Bushels*	*Bushels*
1921–22				
June–September	[2] 1,123,947	676,585	4,638	2,190,180
October–December	4,115,128	2,897,579		
January–March	5,992,151	2,206,737		2,323,332
April–June	3,323,971	2,674,677		1,659,325
Total	14,555,197	8,455,578	4,638	6,172,837
1922–23				
July–September	5,003,783	2,513,575		2,444,891
October–December	8,322,154	3,165,026		3,998,888
January–March	806,785	1,045,155		1,501,964
April–June	3,879,745	684,394		1,335,044
Total	18,012,467	7,408,150		9,280,787
1923–24				
July–September	3,666,420	1,052,563	3,201	2,711,185
October–December	11,146,796	5,945,148	9,594	4,440,299
January–March	7,942,481	4,884,572		3,058,703
April–June	4,521,077	1,798,651	5,320	3,694,550
Total	27,276,774	13,680,934	18,115	13,904,737
1924–25				
July–September	1,595,364	42,856	34,613	1,570,182
October–December	1,469,979	168,396	933	1,156,384
January–March	1,919,128	34,432		1,501,977
April–June	1,184,553	24,768	12,906	1,585,572
Total	6,169,024	270,452	48,452	5,814,115
1925–26				
July–September	2,791,922	41,662	[3]	2,750,259
October–December [4]	8,142,106	1,205,061	[3]	6,801,721
Total (6 months) [4]	10,934,028	1,246,723	[3]	9,551,980

Division of Statistical and Historical Research. Compiled from official records of the Bureau of Foreign and Domestic Commerce.

[1] Included in imports for consumption.
[2] Four months; emergency tariff act became effective May 28, 1921.
[3] None reported for this period.
[4] Preliminary.

TABLE 25.—*Wheat, including flour: Exports from the United States, by customs district groups, 1923–1925*

Customs district groups	Year ended June 30								
	Wheat			Wheat flour			Wheat, including flour		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	1,000 bushels	*1,000 bushels*	*1,000 bushels*	*1,000 barrels*	*1,000 barrels*	*1,000 barrels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
Canadian border and Lake ports [1]	32,371	17,964	55,766	44	83	43	32,571	18,338	55,960
Atlantic coast [2]	53,790	12,987	53,004	6,897	6,228	6,591	84,827	41,011	82,665
Gulf coast [3]	48,239	13,508	69,200	3,478	3,948	4,835	63,887	31,274	90,957
Mexican border [4]	726	1,587	143	92	198	62	1,140	2,481	423
Pacific coast [5]	19,825	32,747	17,377	4,372	6,796	2,365	39,498	63,326	28,019
Total exports	154,951	78,793	195,490	14,883	17,253	13,896	221,923	156,430	258,024

Division of Statistical and Historical Research. Compiled from official records of the Bureau of Foreign and Domestic Commerce, 1923–1925.

[1] Includes Montana and Idaho, Dakota, Duluth and Superior, Wisconsin, Michigan, Chicago, Vermont, St. Lawrence, Buffalo, Ohio, Minnesota.
[2] Includes Maine and New Hampshire, New York, Philadelphia, Maryland, Virginia, South Carolina, Georgia, Porto Rico, Connecticut, Rhode Island, Massachusetts.
[3] Includes Florida, Mobile, New Orleans, Sabine, Galveston.
[4] Includes Arizona, San Antonio, El Paso.
[5] Includes San Diego, Los Angeles, San Francisco, Oregon, Washington, Alaska, and Hawaii.

TABLE 26.—*Wheat: Production, and inspection for export, by classes, United States, July, 1921, to December, 1925*

[Thousand bushels—i. e., 000 omitted]

Class [1]	Year beginning July 1								July–December, 1925	
	1921		1922		1923		1924			
	Estimated production [1]	Inspections of United States wheat for export	Estimated production [1]	Inspections of United States wheat for export	Estimated production [1]	Inspections of United States wheat for export	Estimated production [1]	Inspections of United States wheat for export	Estimated production [1]	Inspections of United States wheat for export
Hard Red Spring	131,075	20,145	169,615	8,718	126,876	1,022	202,270	16,760	153,950	2,761
Durum	56,971	8,697	90,819	12,271	55,256	4,908	71,138	5,945	68,655	1,977
Hard Red Winter	290,053	78,477	279,957	51,654	241,851	19,640	313,303	90,840	186,035	6,364
Soft Red Winter	237,393	18,998	247,882	20,846	271,631	9,810	220,980	6,944	188,805	1,283
White [2]	99,413	758	79,325	13,602	101,767	18,653	54,936	10,063	71,920	7,624
Mixed [3]		18,963		25,047		5,435		9,386		3,231
Type sample [4]		42,894								
Flour as wheat		71,086		66,972		77,637		62,533		24,047
Other wheat [5]		19,389		22,813		19,325		47,552		12,091
Total	814,905	279,407	867,598	221,923	797,381	156,430	862,627	250,023	669,365	59,378

Division of Statistical and Historical Research for estimated production by classes; Grain Division for inspections of United States wheat for export.

[1] The spring and winter wheats listed do not include the spring and winter in the white wheats. Production estimates are based on the estimate of percentage classification by States as reported for 1920 and 1923 to the Division of Crop and Livestock Estimates; the percentages for 1921 and 1922 were interpolated from the 1920 and 1923 percentages. The estimated production for 1925 is based on 1923 percentages, and is subject to revision.
[2] White wheat in the Pacific Northwest region consists of both spring and winter wheat; no attempt has been made to classify this wheat as other than white wheat, part of which is spring and part winter.
[3] From July 1, 1921, to June 30, 1923, 70 per cent of the exports of mixed wheat is estimated as durum.
[4] Prior to July 1, 1922, practically all wheat exported from the Pacific coast was shipped on the basis of "Portland (Oreg.) Chamber of Commerce type sample." Since July 1, 1922, all wheat exported from the Pacific coast has been inspected on the basis of Federal grades and classes.
[5] Exports of wheat other than reported as "Federal inspected."

TABLE 27.—*Wheat, including flour: International trade, average 1910–1914, annual 1923–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Year ended June 30							
	Average 1910–1914		1923		1924		1925 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria	[1] 639	[1] 5,936	[1] 4,860	987	[1] 1,588	10,365	[2] 2,458	1,892
Argentina	[3] 3	85,220	----------	145,428	----------	170,009	----------	127,029
Australia	[3] 7	[3] 49,732	17	49,625	2	83,384	----------	123,580
British India	332	50,821	586	24,148	[4] 717	[5] 18,924	[6] 49	[6] 45,209
Bulgaria [1]	----------	11,182	(7)	4,289	18	2,442	[8] 1,309	[8] 293
Canada	447	94,286	381	274,886	430	343,781	651	194,849
Chile	[2] 170	[8] 2,593	676	608	[9] 31	[10] 4,590	----------	[4] 8,581
Hungary	[1] 7,214	[1] 49,116	[1] 224	[4] 4,921	[1] 4	[4] 15,404	[1] 643	[4] 15,064
Rumania	[1] 196	[1] 54,630	([1] 7)	[1] 1,593	----------	[1] 8,820	----------	[4 11] 4,295
Russia	[1] 556	[1] 164,862	----------	----------	----------	[12] 23,192	----------	[12] 328
Spain	6,009	71	51	191	(7)	277	([7 13])	[4] 310
United States	1,808	104,967	19,945	221,923	28,045	156,430	6,199	258,023
Yugoslavia	----------	----------	----------	[1] 980	----------	[1] 5,770	----------	[4] 9,571
PRINCIPAL IMPORTING COUNTRIES								
Austria	[1] 11,402	[1] 871	[4] 13,063	[1] 150	17,544	----------	16,474	----------
Belgium	72,877	21,965	41,267	1,775	43,176	3,412	45,135	5,791
Brazil	[3] 20,495	----------	21,979	----------	[14] 11,554	----------	----------	----------
Ceylon	----------	----------	----------	----------	[10 15] 753	----------	[4 15] 791	----------
Cuba	4,248	----------	5,773	----------	6,108	----------	----------	----------
Czechoslovakia	----------	----------	[4] 12,100	[4] 1,997	19,487	464	23,902	834
Denmark	[1] 7,155	[1] 597	6,304	321	9,526	229	7,265	796
Egypt	[1] 8,244	[1] 59	7,326	20	7,825	171	9,476	88
Esthonia	----------	----------	----------	----------	[10] 880	----------	[4] 850	----------
Finland	[3] 4,912	([3 7])	4,563	----------	4,881	----------	4,212	([7 13])
France	44,081	1,230	44,133	2,779	54,213	2,797	38,233	2,803
French Indo-China	----------	----------	[10] 703	----------	[4] 951	----------	[4] 1,089	----------
Germany	91,851	23,300	42,676	623	29,751	161	76,243	5,227
Greece	[3] 7,035	[3] 2	18,479	[1] 5	18,733	[1] 2	[4] 21,746	----------
Irish Free State	----------	----------	----------	----------	----------	----------	19,101	----------
Italy	56,431	3,637	112,003	1,776	77,552	7,080	102,126	5,867
Japan	[1] 4,116	[1] 28	[4] 15,316	[1] 620	[4] 28,706	[1] 328	[4] 15,471	[13] 1,562
Latvia	----------	----------	[1] 1,107	[1] 13	[1] 1,777	[1] 6	[4] 1,963	[13] 18
Netherlands	[1] 80,702	[1] 58,435	25,935	3,365	30,762	3,385	30,623	4,507
New Zealand	[3] 163	[3] 918	(7)	714	1,459	2	3,029	2
Norway	[1] 3,674	----------	6,507	[1] 9	[1] 5,507	[1] 15	5,489	[13] 15
Poland	----------	----------	[1] 2,472	[1] 36	[1] 2,556	[1] 14	[13] 11,548	[13] 22
Portugal [1]	2,630	219	----------	----------	----------	----------	----------	----------
Sweden	[1] 7,080	[1] 23	8,999	701	12,214	309	11,461	107
Switzerland	[1] 16,937	[1] 14	16,553	1	16,233	(7)	14,355	(7)
Syria and Lebanon	----------	----------	----------	----------	[10] 401	----------	[10] 1,738	----------
Tunis	[1] 1,746	[1] 960	[1] 1,980	[1] 1,263	[1] 495	[1] 3,262	[14] 942	[13] 94
Union of South Africa	[3] 6,274	[3] 253	5,644	11	6,882	[16] 2	6,773	[15] 16
United Kingdom	219,474	4,493	209,290	6,465	224,136	13,741	234,512	[15] 18,443
Total 42 countries	688,908	790,420	651,024	752,223	665,897	879,368	715,856	835,216

Division of Statistical and Historical Research. Official sources except where otherwise noted.

[1] Year ended July 31 as compiled by the International Institute of Agriculture.
[2] Wheat only.
[3] Average of calendar years, 1909–1913.
[4] International Institute of Agriculture.
[5] Twelve months' sea-trade, nine months' land-trade.
[6] Sea-trade only.
[7] Less than 500 bushels.
[8] Eight months.
[9] Nine months.
[10] Eleven months, International Institute of Agriculture.
[11] Ten months' wheat, seven months' flour.
[12] Commercial source.
[13] Ten months ended May 31, International Institute of Agriculture.
[14] Six months.
[15] Wheat flour only.
[16] Ten months.

TABLE 28.—*Wheat: Estimated price per bushel, received by producers, United States, 1909–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	114.0	101.2	94.9	97.2	99.2	101.0	104.2	105.0	104.8	102.2	98.8	96.4	100.7
1910	97.1	97.4	94.8	92.1	89.4	88.4	89.2	87.6	84.6	84.2	85.4	85.3	91.7
1911	83.5	83.8	86.6	90.6	89.4	87.7	89.2	90.6	91.6	96.1	101.2	100.9	88.3
1912	94.4	87.8	84.6	83.6	79.9	76.1	78.0	80.2	79.8	80.0	81.8	82.0	83.3
1913	79.2	77.1	77.5	77.4	78.4	80.4	81.3	82.4	83.6	84.0	84.2	80.6	79.3
Av. 1909–1913	93.6	89.5	87.7	88.1	87.3	86.7	88.4	89.2	88.9	86.3	90.3	89.0	88.7
1914	76.7	84.9	93.4	95.4	97.9	103.2	118.8	131.8	132.6	135.6	135.6	117.2	99.4
1915	104.6	100.8	93.0	92.0	92.5	97.4	108.4	108.4	100.8	100.6	101.2	96.5	98.2
1916	100.0	119.2	133.8	147.4	159.4	155.3	157.6	164.6	172.2	213.0	247.2	234.3	144.4
1917	224.5	219.3	205.2	200.3	200.4	201.4	201.6	202.0	202.6	203.1	203.0	202.8	205.8
1918	203.8	205.0	205.7	205.9	205.1	204.5	206.2	207.8	211.1	222.6	229.8	225.2	206.3
1919	219.6	211.4	207.6	211.4	214.0	223.4	233.8	231.2	230.3	242.6	250.8	256.0	218.6
1920	242.9	225.4	216.5	201.2	165.8	146.4	149.2	148.2	140.4	122.1	119.0	119.8	182.9
Av. 1914–1920	167.4	166.6	165.0	164.8	162.2	161.7	167.9	170.6	170.0	177.1	183.8	178.8	165.1
1921	108.5	103.0	103.4	99.9	93.4	93.0	95.2	107.0	117.0	119.0	118.8	109.6	104.4
1922	99.8	92.6	89.2	94.1	99.4	103.2	104.6	104.4	106.0	108.4	108.2	100.8	98.0
1923	89.6	86.4	91.0	94.2	93.7	94.5	96.7	98.0	98.8	95.8	96.8	98.5	92.4
1924	105.8	116.8	114.2	129.7	133.6	141.1	162.1	169.8	164.0	140.5	149.1	152.7	127.8
1925	140.3	150.4	144.4	136.4	148.8	153.7							

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, July 1909—December, 1923.

TABLE 29.—*Wheat: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Maine	105	109	112	187	235	237	220	230	190	175	170	118	170	170	161
Vermont	104	100	107	165	236	231	227	200	181	125	145	140	150	150	142
New York	99	108	101	168	210	215	215	175	170	108	118	110	144	152	126
New Jersey	99	109	106	164	213	215	220	205	176	113	110	110	157	143	127
Pennsylvania	96	104	104	162	205	214	216	170	168	103	110	100	144	147	121
Ohio	96	105	104	169	204	212	212	165	167	108	117	99	145	158	125
Indiana	93	103	102	169	203	208	210	167	166	106	112	98	142	155	123
Illinois	91	101	100	165	201	208	210	161	164	100	107	94	136	150	117
Michigan	95	103	101	167	204	209	210	168	166	104	115	96	138	156	122
Wisconsin	89	100	95	160	202	205	215	154	162	97	103	98	128	136	112
Minnesota	86	102	90	162	202	204	250	130	163	97	101	95	130	137	112
Iowa	84	96	87	156	199	200	200	140	154	88	99	89	127	136	108
Missouri	91	98	98	165	195	205	209	160	161	99	105	97	133	150	117
North Dakota	83	101	87	152	200	203	241	130	159	85	90	86	126	131	104
South Dakota	82	94	86	150	196	199	240	115	154	87	92	81	125	128	103
Nebraska	79	95	84	160	195	197	202	131	152	83	96	83	122	140	105
Kansas	85	95	89	164	198	199	215	130	156	93	98	91	128	148	112
Delaware	94	109	109	162	208	222	213	171	171	98	108	100	144	145	119
Maryland	95	106	105	171	207	219	215	168	170	103	112	100	145	151	122
Virginia	101	108	108	165	216	219	224	180	174	116	122	110	148	161	131
West Virginia	104	108	108	160	217	221	220	190	175	117	122	116	147	158	132
North Carolina	111	117	120	176	234	230	233	210	189	144	136	128	160	171	148
South Carolina	129	145	138	189	290	260	258	235	219	208	187	154	170	183	175
Georgia	126	134	129	186	290	266	263	240	215	175	150	147	169	182	165
Kentucky	98	103	105	166	212	214	211	191	172	115	118	108	143	160	129
Tennessee	101	105	108	169	222	214	222	195	176	120	123	115	147	168	134
Alabama	118	126	125	185	270	245	245	230	204	153	160	130	162	175	156
Mississippi	106	125	105	175	300	250	250	213	203	130	145	110	150	160	139
Arkansas	96	99	101	163	201	207	202	190	166	100	106	108	133	150	119
Oklahoma	87	92	89	167	194	201	205	135	155	86	98	93	124	147	110
Texas	101	99	107	173	210	215	200	172	168	100	110	103	129	155	119
Montana	76	91	78	161	192	194	235	128	154	86	89	82	124	139	104
Idaho	71	87	80	146	182	192	205	125	145	72	90	80	134	125	120
Wyoming	88	89	78	145	200	189	212	135	150	79	82	80	111	124	95
Colorado	82	87	80	150	193	195	202	135	149	76	89	83	118	136	100
New Mexico	101	90	90	150	215	210	200	140	156	105	120	108	125	150	122
Arizona	115	125	115	150	210	240	225	202	190	125	115	140	141	175	139
Utah	78	86	86	152	178	188	210	153	150	75	90	91	130	150	103
Nevada	98	95	95	140	180	206	214	180	159	130	120	115	150	146	132
Washington	77	100	82	143	193	196	214	135	152	86	104	85	130	130	107
Oregon	80	102	84	145	182	201	212	130	151	85	108	88	129	136	89
California	96	104	95	152	200	216	204	180	164	107	115	108	154	148	126
United States	86.0	98.6	91.9	160.3	200.8	204.2	214.9	143.7	159.2	92.6	100.7	92.3	129.9	141.6	111.4

Division of Crop and Livestock Estimates.

TABLE 30.—*Wheat: Weighted average price per bushel of reported cash sales*

NO. 1 DARK NORTHERN SPRING, MINNEAPOLIS, 1917–1925 [1]

Year beginning July 1	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Weighted average [2]
1917	----	$2.50	$2.21	$2.21	$2.21	$2.21	$2.21	$2.21	$2.21	$2.21	$2.21	$2.21	----
1918	$2.21	2.29	2.24	2.23	2.25	2.25	2.25	2.29	2.41	2.63	2.68	2.56	2.36
1919	2.72	2.71	2.77	2.84	3.00	3.25	3.34	2.90	2.97	3.23	3.26	3.01	3.00
1920	2.95	2.59	2.64	2.21	1.82	1.73	1.81	1.74	1.72	1.57	1.67	1.74	2.01
1921	1.81	1.59	1.56	1.36	1.30	1.33	1.39	1.58	1.59	1.66	1.71	1.53	1.48
1922	1.57	1.22	1.20	1.21	1.28	1.31	1.28	1.31	1.29	1.35	1.32	1.22	1.26
1923	1.18	1.22	1.26	1.26	1.19	1.19	1.24	1.27	1.26	1.26	1.30	1.37	1.24
1924	1.47	1.38	1.35	1.51	1.54	1.71	1.98	1.94	1.80	1.60	1.73	1.69	1.58
1925	1.66	1.67	1.58	1.58	1.67	1.77	----	----	----	----	----	----	----

NO. 1 NORTHERN SPRING, MINNEAPOLIS, 1909–1925 [1]

1909	1.29	1.06	1.04	1.04	1.05	1.12	1.14	1.14	1.15	1.11	1.10	1.09	1.09
1910	1.21	1.13	1.09	1.08	1.04	1.03	1.06	1.02	.98	.96	.99	.97	1.05
1911	.99	1.05	1.00	1.10	1.05	1.02	1.06	1.06	1.08	1.10	1.16	1.13	1.07
1912	1.09	.98	.89	.90	.84	.82	.89	.87	.85	.88	.91	.92	.87
1913	.91	.88	.87	.84	.85	.86	.87	.93	.92	.91	.94	.92	.88
Av. 1909–1913	1.10	1.02	1.00	.99	.97	.97	1.00	1.00	1.00	.99	1.02	1.01	.99
1914	.92	1.10	1.12	1.11	1.18	1.20	1.38	1.52	1.49	1.58	1.58	1.35	1.20
1915	1.44	1.18	.97	1.02	1.02	1.14	1.29	1.26	1.14	1.22	1.22	1.11	1.09
1916	1.21	1.64	1.64	1.79	1.95	1.79	1.93	1.86	2.03	2.38	2.96	2.73	1.76
1917	2.66	2.47	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.20
1918	2.17	2.23	2.23	2.19	2.22	2.22	2.21	2.24	2.36	2.56	2.59	2.48	2.25
1919	2.66	2.59	2.56	2.67	2.85	3.07	3.01	2.67	2.84	3.06	3.09	2.93	2.72
1920	2.88	2.56	2.54	2.16	1.79	1.66	1.79	1.72	1.66	1.53	1.57	1.69	2.07
Av. 1914–1920	1.99	1.97	1.89	1.87	1.88	1.89	1.97	1.92	1.96	2.07	2.17	2.07	1.90
1921	1.67	1.48	1.51	1.34	1.25	1.31	1.34	1.31	1.51	1.58	1.61	1.49	1.43
1922	1.49	1.11	1.10	1.15	1.23	1.25	1.23	1.26	1.24	1.30	1.28	1.17	1.20
1923	1.12	1.18	1.21	1.20	1.14	1.16	1.19	1.21	1.21	1.21	1.22	1.25	1.17
1924	1.37	1.31	1.30	1.46	1.48	1.66	1.89	1.87	1.71	1.50	1.67	1.64	1.56
1925	1.59	1.64	1.50	1.49	1.55	1.69	----	----	----	----	----	----	----

NO. 2 RED WINTER, CHICAGO, 1909–1925 [3]

1909	1.10	1.04	1.07	1.20	1.18	1.25	1.26	1.23	1.18	1.11	1.11	1.01	1.10
1910	1.07	1.02	.99	.96	.93	.94	.98	.91	.90	.90	.96	.91	1.02
1911	.86	.90	.93	1.00	.96	.96	.97	1.01	1.03	1.09	1.16	1.10	.90
1912	1.05	1.03	1.03	1.06	.99	.86	1.09	.99	.95	1.02	1.03	1.00	1.03
1913	.87	.88	.93	.92	.92	.94	.97	.97	.95	.95	.99	.82	.88
Av. 1909–1913	.99	.97	.99	1.03	1.00	.99	1.05	1.02	1.00	1.01	1.05	.97	.99
1914	.82	.92	1.11	1.12	1.15	1.20	1.39	1.57	1.52	1.59	1.55	1.24	1.08
1915	1.13	1.11	1.08	1.12	1.12	1.23	1.30	1.23	1.13	1.22	1.15	1.05	1.13
1916	1.23	1.43	1.53	1.66	1.85	1.76	1.89	1.74	1.99	2.43	2.94	2.76	1.68
1917	2.50	2.30	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.16	2.17	2.25
1918	2.22	2.21	2.25	2.25	2.24	2.29	2.34	2.28	2.36	2.52	2.76	2.32	2.22
1919	2.23	2.24	2.24	2.24	2.29	2.44	2.64	[4] 2.42	[4] 2.55	[4] 2.63	[4] 3.10	2.89	2.24
1920	2.63	2.49	2.53	2.18	[4] 2.01	2.02	[4] 1.96	1.85	1.65	1.41	1.67	1.47	2.23
Av. 1914–1920	1.82	1.81	1.84	1.82	1.86	1.87	1.96	1.89	1.91	2.00	2.19	1.99	1.83
1921	1.24	1.22	1.29	[4] 1.18	[4] 1.23	[4] 1.18	1.21	1.34	[4] 1.38	1.40	1.34	1.18	1.25
1922	1.14	1.07	1.06	1.18	1.27	1.33	1.30	1.35	1.31	1.32	1.28	1.16	1.14
1923	1.00	1.00	1.05	1.11	1.06	1.09	1.13	1.13	1.09	1.06	1.07	1.15	1.02
1924	1.29	1.31	1.31	1.53	1.55	1.80	1.96	2.00	1.91	1.66	1.89	1.87	1.58
1925	1.59	1.68	1.67	1.63	1.70	1.80	----	----	----	----	----	----	----

Division of Statistical and Historical Research.

[1] Compiled from Minneapolis Daily Market Record. Prior to the promulgation of the Federal grades, August 1, 1917, the subclass Dark Northern did not exist.
[2] Average of daily prices weighted by carlot sales.
[3] Compiled from the Chicago Daily Trade Bulletin.
[4] Based on small number of sales.

TABLE 30.—*Wheat: Weighted average price per bushel of reported cash sales*—Con.

NO. 2 RED WINTER, ST. LOUIS, 1909–1925 [5]

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Weighted average [3]
1909	$1.13	$1.12	$1.14	$1.23	$1.22	$1.28	$1.30	$1.27	$1.23	$1.12	$1.16	$1.02	$1.13
1910	1.07	1.02	1.02	1.00	.96	.98	1.03	.96	.93	.90	.94	.88	.99
1911	.84	.88	.94	1.00	.96	.97	1.02	1.01	1.04	1.13	1.21	1.11	.94
1912	1.03	1.04	1.03	1.09	1.04	1.07	1.11	1.09	1.08	1.09	1.04	.99	1.05
1913	.85	.88	.94	.93	.94	.95	.96	.95	.95	.94	.96	.84	.89
Av. 1909–1913	.98	.99	1.01	1.05	1.02	1.05	1.08	1.06	1.05	1.04	1.06	.97	1.00
1914	.87	.93	1.10	1.10	1.11	1.18	1.40	1.57	1.50	1.54	1.50	1.19	1.10
1915	1.17	1.14	1.14	1.21	1.16	1.23	1.34	1.30	1.17	1.22	1.20	1.10	1.20
1916	1.25	1.45	1.60	1.73	1.87	1.83	1.96	1.88	2.05	2.66	3.04	2.65	1.63
1917	2.36	2.32	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.23
1918	2.21	2.21	2.19	2.22	2.22	2.32	2.41	2.38	2.55	2.71	2.60	2.41	2.23
1919	2.22	2.20	2.21	2.24	2.29	2.48	2.70	2.55	2.58	2.76	2.99	2.89	2.30
1920	2.73	2.51	2.58	2.26	2.02	1.99	2.02	1.90	1.66	1.41	1.58	1.50	2.13
Av. 1914–1920	1.83	1.82	1.85	1.84	1.83	1.88	2.00	1.96	1.95	2.06	2.15	1.98	1.84
1921	1.23	1.23	1.36	1.26	1.20	1.21	1.22	1.38	1.42	1.41	1.38	1.18	1.27
1922	1.12	1.09	1.14	1.23	1.29	1.36	1.37	1.39	1.36	1.39	1.33	1.23	1.21
1923	.97	.99	1.09	1.16	1.12	1.14	1.16	1.18	1.14	1.13	1.12	1.16	1.07
1924	1.35	1.38	1.40	1.56	1.63	1.79	2.10	2.02	1.86	1.77	1.86	1.89	1.59
1925	1.59	1.72	1.71	1.70	1.71	1.84							

NO. 2 HARD WINTER, KANSAS CITY, 1909–1925 [6]

1909	$1.14	$1.02	$1.02	$1.06	$1.04	$1.10	$1.11	$1.11	$1.10	$1.08	$1.07	$1.08	$1.07
1910	1.04	1.00	.99	.95	.91	.93	.95	.90	.88	.88	.90	.88	.98
1911	.87	.93	.95	1.04	1.00	1.00	1.05	1.03	1.05	1.09	1.11	1.09	.97
1912	.92	.89	.88	.88	.83	.84	.87	.86	.86	.88	.87	.88	.88
1913	.82	.83	.87	.84	.83	.84	.85	.86	.88	.87	.90	.85	.84
Av. 1909–1913	.96	.93	.94	.95	.92	.94	.97	.95	.95	.96	.97	.96	.95
1914	.78	.91	1.04	1.02	1.08	1.13	1.34	1.54	1.49	1.54	1.50	1.21	1.05
1915	1.36	1.26	1.07	1.07	1.03	1.12	1.20	1.20	1.05	1.12	1.10	1.00	1.19
1916	1.14	1.41	1.57	1.67	1.85	1.72	1.89	1.82	1.97	2.43	3.01	2.74	1.71
1917	2.68	2.61	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12		2.52
1918	2.20	2.16	2.16	2.16	2.15	2.24	2.31	2.26	2.39	2.62	2.60	2.47	2.19
1919	2.25	2.18	2.24	2.30	2.46	2.63	2.82	2.42	2.49	2.75	2.93	2.76	2.42
1920	2.68	2.45	2.44	2.07	1.76	1.69	1.72	1.62	1.55	1.33	1.47	1.38	1.83
Av. 1914–1920	1.87	1.85	1.81	1.77	1.78	1.81	1.91	1.85	1.87	1.99	2.10		1.85
1921	1.18	1.15	1.22	1.10	1.09	1.09	1.13	1.29	1.34	1.35	1.34	1.17	1.20
1922	1.13	1.04	1.04	1.13	1.17	1.17	1.14	1.15	1.16	1.20	1.16	1.04	1.13
1923	.96	1.01	1.09	1.12	1.09	1.09	1.13	1.11	1.09	1.04	1.06	1.08	1.05
1924	1.20	1.19	1.20	1.37	1.43	1.62	1.82	1.81	1.71	1.51	1.63	1.60	1.35
1925	1.54	1.64	1.58	1.58	1.63	1.72							

Division of Statistical and Historical Research.

[3] Average of daily prices weighted by carlot sales.
[5] Compiled from St. Louis Daily Market Reporter.
[6] Compiled from Kansas City Daily Price Current.

TABLE 31.—*Wheat: Average price per bushel of daily cash closing prices, 1909–1925*

NO. 2 HARD WINTER, NEW YORK[1]

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
1909	$1.31	$1.12	$1.12	$1.20	$1.19	$1.24	$1.26	$1.33	$1.27	$1.19	$1.14	$1.05	$1.20
1910	1.14	1.10	1.06	1.04	1.02	1.02	1.08	1.03	1.00	.99	1.03	.97	1.04
1911	.98	.98	1.04	1.10	1.05	1.07	1.11	1.13	1.13	1.19	1.24	1.20	1.10
1912	1.10	1.03	1.01	1.02	.98	.99	1.06	1.04	1.00	1.03	1.02	1.04	1.03
1913	.99	.97	.98	.95	.98	1.00	.93	1.02	1.02	1.02	1.05	1.00	.99
Av. 1909–1913	1.10	1.04	1.04	1.06	1.04	1.06	1.09	1.11	1.08	1.08	1.10	1.05	1.07
1914	.92	1.01	1.13	1.12	1.23	1.31	1.52	1.72	1.66	1.67	1.65	1.37	1.36
1915	1.36	1.22	1.20	1.24	(3)	(3)	1.40	1.42	1.25	1.29	1.24	1.15	1.28
1916	1.26	1.57	1.68	1.84	2.00	1.87	2.09	2.00	2.16	2.63	3.07	(3)	2.02
1917	2.44	2.46	2.28	2.64	2.81	2.62	2.26	2.26	2.26	2.26	2.26	2.26	2.40
1918	2.31	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.37
1919	2.38	2.38	2.38	2.38	2.38	2.38	2.37	2.37	2.51	3.02	3.09	2.98	2.55
1920	2.92	2.62	2.65	2.33	2.06	1.95	2.00	1.90	1.81	1.59	1.75	1.67	2.10
Av. 1914–1920	1.94	1.95	1.96	1.99	------	------	2.00	2.01	2.00	2.12	2.21	1.97	2.01
1921	1.46	1.36	1.38	1.20	1.16	1.25	1.23	1.43	1.45	1.51	1.49	1.30	1.35
1922	1.32	1.23	1.19	1.33	1.36	1.37	1.32	1.30	1.33	1.37	1.34	1.25	1.31
1923	1.16	1.14	1.16	1.22	1.19	1.22	1.25	1.28	1.24	1.20	1.21	1.26	1.21
1924	1.39	1.43	1.44	1.60	1.64	1.80	2.00	2.03	1.88	1.65	1.81	1.78	1.70
1925	1.69	1.77	1.62	1.62	1.77	1.94	------	------	------	------	------	------	------

NO. 1 NORTHERN SPRING, WINNIPEG[2]

1909	$1.31	$1.19	$1.00	$0.97	$0.97	$0.98	$1.03	$1.03	$1.04	$1.03	$0.98	$0.93	$1.04
1910	1.08	1.07	1.03	.98	.92	.90	.94	.93	.90	.90	.95	.97	.96
1911	.95	1.01	1.01	1.00	.99	.95	.95	.97	.98	1.01	1.04	1.06	.99
1912	1.07	1.06	1.00	.91	.85	.80	.82	.84	.85	.89	.93	.96	.92
1913	.97	.95	.89	.81	.83	.84	.85	.88	.90	.90	.93	.94	.89
Av. 1909–1913	1.08	1.06	.99	.93	.91	.89	.92	.93	.93	.95	.97	.97	.96
1914	.90	1.08	1.13	1.11	1.18	1.18	1.36	1.53	1.49	1.57	1.61	1.32	1.29
1915	1.35	1.25	.95	.96	1.02	1.07	1.22	1.26	1.10	1.15	1.17	1.11	1.13
1916	1.18	1.49	1.59	1.72	1.93	1.76	1.80	1.68	1.85	2.33	2.75	2.49	1.88
1917	2.34	2.40	2.25	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.24
1918	2.21	2.21	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24	2.24
1919	2.16	2.15	2.53	2.53	2.52	2.44	2.40	2.31	2.36	2.40	2.38	2.32	2.38
1920	2.33	2.33	2.45	2.11	1.84	1.67	1.71	1.66	1.68	1.57	1.67	1.69	1.89
Av. 1914–1920	1.78	1.84	1.88	1.84	1.85	1.80	1.85	1.84	1.85	1.92	2.00	1.91	1.86
1921	1.64	1.56	1.33	1.04	1.02	1.05	1.08	1.31	1.37	1.40	1.44	1.31	1.30
1922	1.35	1.17	.99	1.01	1.10	1.08	1.07	1.10	1.10	1.19	1.15	1.12	1.12
1923	1.06	1.11	1.04	.96	.96	.91	.94	.97	.95	.96	1.03	1.12	1.00
1924	1.35	1.42	1.42	1.60	1.64	1.73	1.96	1.97	1.76	1.56	1.82	1.71	1.66
1925	1.62	1.67	1.38	1.27	1.42	1.57	------	------	------	------	------	------	------

Division of Statistical and Historical Research.

[1] Compiled from New York Journal of Commerce.
[2] Nominal.
[3] Compiled from Winnipeg Farmers' Advocate, July 1909–September 1923; November 1923–December 1924, from Minneapolis Daily Market Record.

TABLE 32.—*Wheat: Weighted average price*[1] *per bushel of reported cash sales of all classes and grades combined at markets named, 1918–1925*

MINNEAPOLIS

Year beginning July 1	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	Weighted average[2]
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1918	212.8	221.3	219.6	218.6	220.5	220.9	218.9	221.2	230.5	245.3	251.8	239.8	222.4
1919	248.9	230.1	234.0	240.9	261.6	278.5	276.5	245.6	254.8	285.3	297.0	278.7	257.6
1920	274.6	247.1	244.9	203.9	172.4	163.0	167.8	156.3	151.5	135.1	144.5	146.0	187.9
1921	145.3	132.2	138.6	121.5	117.3	117.7	120.2	138.9	141.3	148.2	149.7	136.5	131.2
1922	146.5	114.2	111.6	113.8	122.3	123.1	119.2	120.8	121.2	126.5	124.8	115.8	119.2
1923	110.7	111.2	114.6	115.3	109.4	108.9	114.1	116.4	116.2	115.3	118.6	125.4	113.9
1924	135.7	133.0	132.8	148.4	150.5	167.3	190.4	187.9	174.8	152.5	167.8	164.1	154.4
1925	159.9	158.7	149.4	147.9	157.6	168.3							

KANSAS CITY

1918	220.2	215.5	214.0	213.2	212.4	217.5	223.1	218.6	227.1	252.0	248.0	233.8	218.1
1919	219.3	214.4	215.9	231.2	235.9	252.2	266.3	233.4	241.5	263.5	286.3	273.5	244.9
1920	267.4	245.6	246.0	206.6	176.3	170.2	173.0	164.6	154.6	133.5	147.5	139.7	190.2
1921	117.0	115.0	126.4	109.8	107.6	108.2	111.1	127.4	131.4	132.3	125.9	113.2	118.2
1922	111.0	103.2	104.1	111.1	114.5	116.3	114.0	115.1	115.4	119.7	115.9	104.1	110.8
1923	94.9	99.2	102.6	107.1	101.3	99.9	105.6	106.5	104.2	101.6	102.1	107.3	101.9
1924	121.3	120.3	120.5	138.0	143.9	162.3	184.8	181.4	172.0	151.4	162.7	159.1	134.5
1925	155.3	165.8	156.3	157.2	162.1	170.9							

CHICAGO

1918	225.0	223.0	220.6	220.6	220.6	223.2	222.3	220.1	230.8	250.0	252.5	232.8	223.0
1919	223.2	222.2	221.2	225.7	242.0	249.5	272.2	235.5	242.0	289.8	295.8	280.5	226.1
1920	264.9	248.8	249.8	209.9	180.7	173.4	178.6	171.2	157.3	139.7	156.5	142.7	216.3
1921	126.1	119.8	124.4	112.0	107.9	110.5	112.7	128.6	129.7	132.4	132.7	115.9	121.6
1922	113.4	107.0	104.5	113.4	119.0	123.6	117.6	120.6	120.0	124.8	119.3	109.3	112.2
1923	99.1	99.6	101.0	106.8	103.1	105.3	108.6	110.3	109.7	106.1	107.8	113.7	102.5
1924	129.4	125.7	121.5	142.7	145.0	165.3	184.3	186.8	168.9	146.6	166.0	161.6	135.7
1925	155.0	162.4	141.3	139.0	153.5	171.7							

ST. LOUIS

1918	221.6	221.0	221.2	222.0	221.7	230.5	230.2	231.2	252.3	262.3	257.8	239.5	223.6
1919	220.7	218.6	218.3	220.9	234.8	224.9	252.5	247.4	253.5	275.8	293.1	283.0	225.2
1920	273.3	249.9	253.1	219.2	197.2	191.2	194.7	183.7	163.8	139.8	155.0	145.2	210.1
1921	120.3	116.3	122.6	111.6	107.7	109.0	115.3	131.3	133.1	133.3	130.6	113.1	120.4
1922	107.4	103.4	107.2	116.7	121.6	126.0	124.5	128.0	125.8	129.6	124.8	114.3	115.8
1923	98.6	97.1	102.6	111.4	106.9	108.6	112.2	113.1	110.3	108.2	109.1	112.6	104.5
1924	131.9	128.8	130.5	147.3	154.2	170.3	195.6	188.5	176.0	164.7	176.0	176.4	149.0
1925	156.7	167.2	163.6	163.9	167.8	179.3							

FOUR MARKETS COMBINED

1918	221.2	219.9	218.5	218.3	219.4	220.6	220.7	221.3	232.4	249.2	251.7	238.2	221.7
1919	223.1	221.0	223.6	229.3	246.5	256.8	267.9	240.1	248.6	278.2	292.3	277.0	241.8
1920	270.6	247.3	246.6	205.8	175.1	167.2	172.4	163.2	154.3	135.3	147.6	144.1	193.3
1921	122.9	121.7	128.5	117.3	113.1	113.8	115.8	131.4	136.1	138.5	135.0	122.5	123.7
1922	117.1	107.6	108.6	113.4	120.0	121.3	118.3	120.0	120.4	125.0	122.2	112.6	116.0
1923	99.8	102.7	109.5	112.6	107.3	106.4	111.4	112.7	112.6	111.0	111.6	117.9	108.5
1924	126.2	124.6	128.3	145.0	148.9	166.4	189.5	185.9	174.0	153.4	167.4	163.7	145.6
1925	156.6	161.9	150.7	150.0	159.1	169.7							

Division of Statistical and Historical Research. Compiled from daily trade papers of markets named.

[1] The prices in this table are comparable with farm prices in that the farm prices are averages of the several prices reported which cover all classes and grades sold from the farm.

[2] Average of daily prices weighted by car-lot sales.

TABLE 33.—*Wheat, good average quality imported red: Average spot price per bushel of 60 pounds at Liverpool, 1914–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Aver.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1914	1.02	1.04	1.07	1.07	1.11	1.09	1.05	1.28	1.29	1.28	1.38	1.47	1.18
1915	1.67	1.95	1.91	1.94	1.98	1.65	1.63	1.61	1.67	1.71	1.59	1.73	1.75
1916	1.94	1.90	2.00	1.93	1.71	1.55	1.58	1.96	2.09	2.15	2.22	2.39	1.94
1917	2.39	2.43	2.42	2.46	2.46	2.46	2.50	2.50	2.38	2.26	2.26	2.26	2.40
1918	2.32	2.32	2.39	2.32	2.32	2.32	2.32	2.32	2.32	2.39	2.46	2.46	2.36
1919	2.46	2.46	2.43	2.41	2.41	2.39	2.29	2.21	2.16	2.16	2.11	1.95	2.29
1920	1.90	1.75	2.11	2.37	2.34	2.40	2.34	2.20	2.13	2.34	2.53	2.39	2.23
Av. 1914–1920	1.96	1.98	2.05	2.07	2.05	1.98	1.96	2.01	1.99	2.04	2.08	2.09	2.02
1921	2.33	2.14	2.14	2.13	2.18	1.96	1.71	1.59	1.56	1.31	1.26	1.37	1.81
1922	1.37	(1)	1.58	1.58	1.59	1.44	1.49	1.35	1.29	1.44	1.52	1.54	1.47
1923	1.42	1.41	1.40	1.46	(1)	(1)	(1)	1.26	1.22	1.23	1.25	(1)	------
1924	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1.61	1.74	1.77	1.88	------
1925	2.10	2.14	1.99	1.75	1.86	1.76	1.59	1.94	(1)	1.61	1.64	------	------

Division of Statistical and Historical Research. Compiled from Broomhall's 1921 Yearbook, 1914–1920; from Corn Trade News, 1921 to date. Conversions at current exchange rate..

[1] No quotations.

TABLE 34.—*Wheat, Barletta:*[1] *Average price per bushel of 60 pounds at Buenos Aires, 1912–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1912	$1.01	$1.00	$1.00	$1.03	$0.96	$0.99	$0.99	$1.01	$1.02	$1.04	$0.96	$0.92	$0.99
1913	.91	1.00	.93	.99	.95	1.02	1.02	1.01	[4]1.07	[4]1.03	[4]1.08	.95	1.00
1914	.95	.99	.98	.95	1.01	.99	1.01	1.23	1.23	[4]1.12	[4]1.24	[4]1.22	1.08
1915	1.26	1.42	1.39	1.44	1.48	1.35	1.32	1.29	1.31	1.36	1.31	1.20	1.34
1916	1.05	1.06	.96	.95	.85	.83	.84	1.06	1.19	1.49	1.74	1.48	1.12
1917	1.65	1.64	1.67	1.72	2.00	2.21	2.23	2.02	2.00	2.02	2.10	1.79	1.92
1918	1.56	1.55	1.58	1.59	1.57	1.56	1.50	1.41	1.42	1.41	1.46	1.49	1.51
1919	1.31	1.31	1.27	1.27	1.33	1.34	1.32	1.94	1.85	1.66	1.71	1.63	1.54
1920	1.65	1.75	2.02	2.55	2.79	2.58	2.85	2.43	2.48	2.58	[2]2.75	1.86	2.36
Av. 1914–1920	1.35	1.39	1.41	1.50	1.58	1.55	1.65	1.62	1.64	1.66	1.76	1.52	1.55
1921	1.76	1.58	1.62	1.46	1.48	1.50	1.45	1.43	1.50	1.22	1.05	1.05	1.42
1922	1.04	1.26	1.32	1.30	1.32	1.22	1.27	1.20	1.16	1.22	1.20	1.22	1.23
1923	1.20	1.22	1.20	1.21	1.17	1.13	1.05	1.00	1.05	1.09	1.13	1.04	1.12
1924	.99	.97	.98	.99	1.02	1.11	1.20	1.40	1.43	1.59	1.60	1.61	1.25
1925	1.84	1.89	1.81	1.63	1.75	1.68	1.62	1.68	1.53	1.50	1.60	1.86	1.70
Av. 1921–1925	1.37	1.38	1.39	1.32	1.35	1.33	1.34	1.34	1.33	1.32	1.32	1.36	1.34

Division of Statistical and Historical Research. Prices and monthly exchange rates from International Yearbook of Agricultural Statistics, 1922, supplemented by Review of the River Plate. Exchange after July, 1921, from Federal Reserve Bulletin.

[1] Barletta is a semihard wheat. [2] No. 1 Rosario wheat. [3] Description "Pan." [4] New crop.

TABLE 35.—*Wheat, white: Spot price per bushel of 60 pounds at Karachi, India, 1912–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1912	$0.90	$0.94	$0.94	$0.96	$0.93	$0.89	$0.88	$0.89	$0.88	$0.89	$0.89	$0.89	$0.91
1913	.92	.97	.97	.93	.92	.90	.90	.87	.87	.86	.88	.88	.91
1914	.91	.93	.91	.92	.94	.91	.90	.96	1.08	1.09	1.22	1.23	1.00
1915	1.27	1.43	1.22	1.21	1.07	1.02	1.02	1.08	1.12	1.10	1.09	1.07	1.14
1916	1.09	1.03	.97	.89	.88	.86	.95	1.05	1.03	1.04	1.10	1.15	1.00
1917	1.19	1.14	1.13	1.12	1.04	1.05	1.08	1.07	1.14	1.13	1.22	1.26	1.13
1918	1.22	1.23	1.24	1.24	1.25	1.23	1.26	1.31	1.41	1.57	1.61	1.63	1.35
1919	1.82	1.82	1.91	1.78	2.07	2.01	2.06	2.16	2.14	1.93	2.04	2.16	1.99
1920	2.12	2.09	1.91	1.90	1.74	1.62	[1]1.49	[1]1.35	1.34	1.36	1.32	1.22	1.62
Av. 1914–1920	1.37	1.38	1.33	1.29	1.28	1.24	1.25	1.28	1.32	1.32	1.37	1.39	1.32
1921	1.28	1.29	1.26	1.26	1.33	1.31	1.29	1.52	1.86	1.73	1.57	1.60	1.44
1922	1.50	(2)	(2)	(2)	1.36	1.36	1.25	1.22	1.11	.89	.91	1.17	------
1923	1.20	1.12	1.12	1.17	1.13	1.07	1.03	.91	.96	.97	.99	1.01	1.06
1924	.98	.98	.99	.99	1.04	1.05	1.19	1.30	1.35	1.46	1.47	1.49	1.19
1925	1.57	1.76	1.80	1.62	1.65	1.64	1.49	1.52	1.47	1.46	1.62	1.77	1.61
Av. 1921–1925	1.31	------	------	------	1.30	1.29	1.25	1.29	1.35	1.30	1.31	1.41	------

Division of Statistical and Historical Research. Compiled from Indian Trade Journal. Converted at par of $0.3244 per rupee to 1919, and current exchange rate as given by Federal Reserve Bulletins 1919 to date.

[1] First week of month, from Review of the Trade of India. [2] Not quoted.

TABLE 36.—*Daily milling capacity, flour output, wheat ground, and wheat production, by States*

State	Daily capacity [1]		Output [2]		Wheat ground [2]		Wheat production [3]	
	Jan. 1, 1920	Jan. 1, 1923	1921	1923	1921	1923	1921	1923
	Barrels	*Barrels*	*1,000 barrels*	*1,000 barrels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
Alabama	1,235	600	3	1	16	7	210	150
Arizona	925	825	132	152	619	717	840	1,092
Arkansas	7,235	7,200	180	104	887	503	958	770
California	17,525	16,475	1,974	2,509	9,582	12,801	8,355	16,157
Colorado	11,975	12,300	1,481	1,516	6,645	6,717	23,239	18,272
Delaware	1,975	1,700	90	59	455	310	1,300	1,908
Georgia	5,575	5,550	542	617	2,468	2,895	1,449	1,739
Idaho	9,625	9,850	787	904	3,676	4,101	26,952	30,115
Illinois	55,250	49,300	5,215	5,514	23,992	26,100	46,822	62,506
Indiana	48,650	46,200	3,254	3,297	15,749	15,808	24,192	34,248
Iowa	22,750	22,650	912	1,241	4,898	5,960	9,944	13,558
Kansas	85,800	96,300	17,337	15,862	82,390	73,068	128,695	83,804
Kentucky	28,725	26,550	2,033	2,348	9,490	11,050	6,340	7,688
Maryland	12,025	11,975	936	1,046	4,453	5,112	8,260	11,520
Michigan	36,775	30,925	2,122	2,129	10,119	10,474	14,840	16,576
Minnesota	178,825	182,875	23,733	23,685	111,620	111,956	22,938	23,385
Missouri	91,275	99,600	6,270	7,456	28,945	34,338	34,952	36,790
Montana	13,875	13,850	1,276	1,938	5,634	8,598	33,430	47,708
Nebraska	25,850	26,275	2,342	2,676	11,151	12,809	59,875	31,388
Nevada	725	900	17	15	83	82	493	507
New Jersey	2,925	2,925	145	126	727	661	1,539	1,480
New Mexico	1,625	1,175	72	41	357	209	3,088	1,300
New York	60,900	59,875	8,394	8,959	37,880	41,147	9,137	8,159
North Carolina	12,425	15,100	1,341	1,296	6,580	6,056	4,500	6,038
North Dakota	17,375	17,425	1,994	2,661	9,427	12,641	80,750	71,410
Ohio	64,875	60,150	3,844	4,320	18,514	20,400	30,185	42,770
Oklahoma	20,850	22,250	2,781	2,350	12,705	10,922	47,325	37,950
Oregon	26,100	28,400	2,528	3,031	11,538	14,238	25,364	26,807
Pennsylvania	37,825	38,950	3,007	2,317	14,801	11,506	23,850	24,338
South Carolina	1,125	1,000	62	55	313	262	1,298	1,925
South Dakota	9,865	6,500	354	335	1,764	1,612	25,980	27,515
Tennessee	31,850	30,625	2,233	2,431	10,794	11,560	4,500	4,519
Texas	33,950	36,625	4,009	4,021	18,541	18,740	20,810	16,370
Utah	9,425	12,075	742	768	3,478	3,588	6,299	6,566
Virginia	21,700	24,025	1,761	1,707	8,373	8,306	8,301	11,145
Washington	36,475	36,800	4,470	4,819	21,021	23,167	58,245	61,215
West Virginia	10,000	10,725	376	280	1,678	1,378	3,125	2,964
Wisconsin	26,100	27,850	1,762	1,576	7,988	7,123	2,812	1,970
Wyoming	2,800	2,575	217	156	1,003	696	3,316	2,785
Other	200	1,150	178	121	880	694	397	274
Total United States	1,084,985	1,098,100	110,846	114,439	521,234	538,312	814,905	797,381

Division of Statistical and Historical Research.

[1] Miller's Almanack, 1923, page 192. Does not include a few minor States.
[2] Census of Manufactures, 1921 and 1923. Flour-Mill Products and Bread and Other Bakery Products. Includes merchant mills only. Calendar years.
[3] Division of Crop and Livestock Estimates. Department of Agriculture Yearbooks, 1922 and 1924.

TABLE 37.—*Wheat: Average price per bushel of 60 pounds at Port Adelaide, Australia, 1912–1924*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1912	$0.88	$0.87	$0.88	$0.96	$0.96	$0.98	$0.96	$0.96	$0.99	$1.00	$0.96	$0.86	$0.94
1913	.85	.86	.86	.89	.88	.87	.86	.87	.86	.84	.84	.84	.86
1914	.86	.87	.90	.90	.92	.93	.93	1.00	1.12	1.14	1.21	1.40	1.02
1915	1.48	1.65	1.74	1.76	1.80	1.81	1.82	1.79	1.78	1.41	1.05	1.23	1.61
1916[1]	1.13	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
1917[1]	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
1918[1]	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
1919[1]	1.14	1.19	1.18	1.16	1.16	1.15	1.11	1.07	1.05	1.15	1.12	1.13	1.13
1920[1]	1.19	1.29	1.45	1.50	1.48	1.51	1.48	1.39	1.35	1.33	1.31	1.34	1.38
Av. 1914–1920	1.15	1.20	1.24	1.25	1.25	1.26	1.25	1.24	1.25	1.21	1.16	1.22	1.22
1921[1]	1.69	1.74	1.76	1.77	1.79	1.70	1.63	1.64	1.68	1.74	[2]1.79	[2]1.87	1.73
1922	.99	1.07	1.18	1.15	1.27	1.20	1.19	1.15	1.14	1.15	1.15	1.17	1.15
1923	1.18	1.14	1.12	1.18	1.17	1.12	1.04	.98	1.01	1.01	.98	.94	1.07
1924	.91	.93	.93	.95	.99	1.00	1.14	1.28	1.26	1.34	1.40	1.46	1.13

Division of Statistical and Historical Research. Compiled from Statistical Register of South Australia, 1920–21 to 1923–24.

[1] The prices from 1916–1921 are those fixed for home consumption, the average prices on the whole transaction of the Wheat Harvest Board during each year being: 1916, $1.13; 1917, $1.14; 1918, $1.14; 1919, $1.31; 1920, $1.70; and 1921, $1.52.

[2] These prices for old wheat; new wheat price; November, $0.93; December, $1.02.

TABLE 38.—*Wheat ground and wheat-milling products, by months*

Year and month	Mills reporting	Wheat ground	Production		Daily (24-hour) capacity in wheat flour	Percentage of total capacity operated
			Wheat flour	Wheat-grain offal		
1924	*Number*	*Bushels*	*Barrels*	*Pounds*	*Barrels*	*Per cent*
July	1,066	39,271,674	8,465,048	696,581,960	646,379	50.4
August	1,069	45,433,530	9,842,327	799,698,076	651,172	58.1
September	1,060	47,857,224	10,459,277	823,390,494	650,167	64.3
October	1,069	51,862,915	11,370,583	977,381,222	651,379	64.7
November	1,050	41,981,793	9,186,668	719,163,589	650,638	58.8
December	1,052	40,427,953	8,854,928	695,925,368	650,691	52.3
1925						
January	1,050	45,009,962	9,852,531	762,488,589	658,660	57.5
February	1,056	37,720,108	8,248,124	648,196,645	650,904	52.8
March	1,067	33,547,957	7,346,597	576,955,340	652,147	43.3
April	1,058	31,065,514	6,780,942	536,262,588	649,478	40.2
May	1,048	31,874,430	6,941,623	553,749,523	647,003	42.9
June	1,057	35,525,909	7,744,712	621,141,095	645,500	46.1
Total		481,578,969	105,093,360	8,410,934,489		

COMPARATIVE STATEMENT FOR 941 IDENTICAL MILLS WHICH REPORTED EACH MONTH[1]

Year and month	Wheat ground	Production		Average pounds of wheat per barrel of flour	Average pounds of offal per bushel of wheat	Daily (24-hour) capacity in wheat flour	Percentage of total capacity operated
		Wheat flour	Wheat-grain offal				
1924	*Bushels*	*Barrels*	*Pounds*	*Number*	*Number*	*Barrels*	*Per cent*
July	38,571,659	8,314,767	684,162,700	278.3	17.7	609,280	52.5
August	44,204,305	9,585,857	777,397,777	276.7	17.6	607,828	60.7
September	46,585,228	10,183,742	801,327,408	274.5	17.2	617,075	66.0
October	50,423,166	11,059,134	952,044,525	273.5	18.9	617,387	66.3
November	41,147,714	8,995,742	704,971,763	274.4	17.1	618,651	60.6
December	39,544,732	8,666,165	679,909,893	273.8	17.2	619,004	53.8
1925							
January	43,747,469	9,573,020	740,866,277	274.2	16.9	618,778	59.5
February	36,434,097	7,967,840	625,319,492	274.4	17.2	610,352	54.4
March	32,524,457	7,123,970	558,976,956	273.9	17.2	611,085	44.8
April	30,302,688	6,616,172	522,525,124	274.8	17.2	612,601	41.5
May	30,789,017	6,703,740	534,295,902	275.6	17.4	610,054	44.0
June	34,362,491	7,490,940	600,341,885	275.2	17.5	609,466	47.3
Total	468,637,023	102,281,089	8,182,139,702				

Division of Statistical and Historical Research. Compiled from Bureau of Census monthly reports on wheat-milling prodcuts.

[1] These mills produced approximately 86 per cent of the total wheat flour reported in 1923.

WHEAT FLOUR

TABLE 39.—*Flour, wheat: Average wholesale price per barrel at markets named, 1909–1925*

MINNEAPOLIS—SPRING PATENTS[1]

Year beginning July 1	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
1909	$6.21	$5.89	$5.14	$5.29	$5.22	$5.48	$5.58	$5.45	$5.52	$5.38	$5.42	$5.33	$5.49
1910	6.20	5.79	5.75	5.21	5.03	5.01	5.28	4.91	4.75	4.64	4.89	4.84	5.19
1911	4.88	4.88	4.98	5.25	5.05	5.05	5.00	5.10	5.10	5.10	5.13	5.60	5.12
1912	5.43	5.24	4.68	4.63	4.59	4.13	4.26	4.43	4.43	4.43	4.43	4.63	4.61
1913	4.66	4.57	4.45	4.33	4.18	4.15	4.26	4.52	4.54	4.51	4.51	4.51	4.43
Av. 1909–1913	5.48	5.27	5.00	4.94	4.81	4.76	4.88	4.88	4.87	4.81	4.94	4.98	4.97
1914	4.62	5.78	6.02	5.58	5.79	6.01	6.86	7.54	7.16	7.61	7.41	6.78	6.43
1915	6.78	6.42	5.13	5.23	5.28	5.63	6.23	6.13	5.70	5.90	5.79	5.29	5.82
1916	5.68	7.69	8.26	9.06	9.56	8.60	9.00	8.45	9.44	11.33	14.09	13.68	9.52
1917	12.86	13.23	11.15	10.84	10.24	10.07	9.85	10.05	9.89	9.90	9.42	9.89	10.62
1918	10.45	10.53	10.49	10.44	10.41	10.44	10.42	10.69	11.22	12.69	12.52	12.00	10.98
1919	12.15	12.13	11.54	12.03	13.20	14.48	14.97	13.73	13.41	14.69	15.49	14.94	13.54
1920	14.12	13.33	13.02	11.45	9.74	9.28	9.94	9.38	9.10	8.30	9.04	9.40	10.51
Av. 1914–1920	9.52	9.87	9.37	9.24	9.17	9.27	9.61	9.42	9.42	9.97	10.54	10.15	9.63
1921	9.27	8.34	8.62	7.67	7.39	7.26	7.33	8.17	8.27	8.48	8.32	7.71	8.07
1922	7.95	7.22	6.68	6.76	6.88	6.86	6.71	6.72	6.72	7.09	6.90	6.35	6.89
1923	6.21	6.37	6.45	6.43	6.21	6.30	6.44	6.51	6.49	6.56	6.83	7.12	6.49
1924	7.72	7.69	7.52	8.19	8.22	9.03	9.80	10.02	9.34	8.54	9.12	8.86	8.67
1925	8.78	9.40	8.52	8.52	8.81	9.52							

ST. LOUIS—SOFT WINTER PATENTS[2]

1909	$5.80	$4.92	$5.14	$5.75	$5.68	$5.82	$5.77	$5.80	$5.75	$5.40	$5.29	$5.11	$5.52
1910	5.20	4.85	4.76	4.68	4.58	4.58	4.86	4.64	4.52	4.38	4.39	4.36	4.65
1911	4.17	4.25	4.40	4.69	4.68	4.62	4.74	4.70	4.72	5.07	5.54	5.43	4.75
1912	5.26	4.49	4.54	4.70	4.67	4.70	4.84	4.86	4.68	4.59	4.52	4.45	4.69
1913	4.12	3.88	3.98	3.96	4.08	4.14	4.20	4.11	4.02	3.85	3.92	3.74	4.00
Av. 1909–1913	4.91	4.48	4.56	4.75	4.74	4.77	4.88	4.82	4.74	4.66	4.73	4.62	4.72
1914	3.47	4.16	5.04	4.86	4.91	5.03	6.18	6.98	6.57	6.65	6.66	5.56	5.51
1915	5.56	4.87	4.83	5.08	5.18	5.39	5.60	5.79	5.24	5.32	5.20	4.91	5.25
1916	5.24	6.85	7.31	7.84	8.72	8.31	8.67	8.44	8.83	11.29	13.91	12.53	9.00
1917	10.64	10.78	10.36	10.33	10.26	10.28	10.46	10.74	11.40	11.39	10.94	10.72	10.69
1918	10.25	10.25	10.25	10.25	10.25	10.25	11.22	11.65	10.71	11.45	11.41	10.28	10.68
1919	10.80	10.13	9.90	9.95	10.12	11.31	12.08	11.49	11.59	12.34	13.93	13.18	11.40
1920	11.98	11.99	12.09	11.38	10.13	9.44	9.73	9.71	8.76	7.10	7.81	7.98	9.84
Av. 1914–1920	8.28	8.43	8.54	8.53	8.51	8.57	9.13	9.26	9.01	9.36	9.98	9.31	8.91
1921	6.61	6.63	6.94	6.60	6.25	6.25	5.99	6.69	7.05	6.79	7.07	6.48	6.61
1922	5.94	5.75	5.86	6.29	6.50	6.62	6.50	6.62	6.50	6.66	6.53	6.05	6.32
1923	5.59	5.71	5.39	5.71	5.75	5.75	5.93	5.84	5.95	5.93	5.88	6.08	5.80
1924	6.60	7.24	7.00	7.86	8.26	8.94	10.02	10.50	9.66	8.56	9.06	9.02	8.56
1925	8.51	8.86	8.80	8.86	8.73	9.07							

CHICAGO—WINTER PATENTS[3]

1909	$6.08	$5.07	$4.72	$5.28	$5.41	$5.40	$5.48	$5.42	$5.48	$5.27	$5.05	$4.75	$5.28
1910	4.92	4.87	4.72	4.57	4.40	4.41	4.53	4.31	4.09	4.06	4.26	4.16	4.44
1911	4.08	4.12	4.32	4.64	4.61	4.85	4.40	4.58	4.58	4.76	5.21	5.17	4.61
1912	4.86	4.52	4.69	4.52	4.56	4.59	4.62	4.67	4.50	4.48	4.48	4.41	4.58
1913	4.25	4.12	4.16	4.21	4.21	4.22	4.25	4.25	4.25	4.22	4.21	4.24	4.22
Av. 1909–1913	4.84	4.54	4.52	4.64	4.64	4.69	4.66	4.65	4.58	4.56	4.63	4.55	4.63
1914	3.80	4.54	5.36	5.16	5.23	5.22	6.28	7.42	7.01	7.18	7.19	5.69	5.84
1915	5.16	5.24	5.10	5.26	5.23	5.39	5.92	6.11	5.38	5.76	5.54	5.37	5.46
1916	5.23	6.35	7.30	7.78	8.82	8.20	9.09	8.44	9.10	11.20	14.91	13.80	9.20
1917	11.77	12.25	11.74	10.68	10.36	10.44	9.92	10.45	11.00	10.95	10.82	10.88	10.94
1918	10.88	10.68	10.20	10.08	9.58	10.22	10.55	10.42	10.36	11.44	12.99	11.82	10.77
1919	11.02	10.54	10.80	11.35	11.91	13.06	13.68	12.88	12.08	12.30	13.68	13.42	12.22
1920	12.98	11.79	12.22	11.00	10.40	8.78	10.19	9.26	9.05	7.91	7.84	8.76	10.20
Av. 1914–1920	8.69	8.80	8.96	8.76	8.79	8.75	9.38	9.28	9.14	9.53	10.42	9.96	9.21
1921	7.12	7.00	7.01	6.95	6.51	6.44	6.01	6.97	6.81	6.95	7.54	7.11	6.87
1922	6.76	6.30	6.24	6.48	6.44	6.67	6.39	6.20	6.26	6.19	6.02	5.50	6.30
1923	5.31	5.39	5.75	5.74	5.30	5.30	5.30	5.58	5.41	5.26	5.52	5.94	5.48
1924	6.23	6.32	6.43	7.20	7.37	8.10	8.91	8.95	8.23	7.46	8.09	8.15	7.62
1925	7.77	8.07	7.65	7.72	7.99	8.65							

[1] Compiled from the Minneapolis Daily Market Record.
[2] Compiled from St. Louis Annual Statements of Trade and Commerce and St. Louis Market Reporter.
[3] Compiled from Chicago Board of Trade and Daily Trade Bulletin.

TABLE 39.—*Flour, wheat: Average wholesale price per barrel at markets named, 1909–1925*—Continued

CHICAGO—SPRING PATENTS [3]

Year beginning July 1	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
1909	$6.17	$5.81	$6.08	$5.92	$6.13	$6.45	$6.41	$6.35	$6.46	$6.28	$6.27	$6.18	$6.21
1910	6.76	6.65	6.37	6.31	6.18	6.28	6.42	6.05	5.56	5.36	5.62	5.44	6.08
1911	5.53	5.83	5.80	6.12	5.95	5.80	5.82	5.86	5.80	5.88	6.38	6.40	5.94
1912	6.10	5.79	5.65	5.36	5.14	4.84	4.60	4.66	4.64	4.71	4.88	4.81	5.10
1913	4.89	4.80	4.73	4.62	4.58	4.65	4.68	4.80	4.86	4.71	4.74	4.72	4.73
Av. 1909–1913	5.89	5.78	5.74	5.67	5.60	5.60	5.59	5.54	5.46	5.39	5.58	5.51	5.61
1914	4.58	5.62	6.18	5.71	5.79	5.90	6.97	7.62	7.41	7.62	7.85	6.62	6.49
1915	6.66	6.76	5.40	5.60	5.69	5.84	6.51	6.74	5.87	6.16	6.11	5.99	6.11
1916	5.96	7.63	8.15	9.84	9.79	9.02	9.54	9.01	9.75	12.62	15.34	17.46	10.29
1917	12.53	13.03	11.46	10.89	10.55	10.45	10.08	10.75	11.25	11.70	11.15	10.88	11.21
1918	10.65	11.00	10.62	10.40	9.58	10.50	10.42	10.28	10.20	11.45	13.10	11.25	10.79
1919	11.82	12.25	11.40	11.52	13.00	13.95	13.88	14.42	13.18	13.75	15.40	14.50	13.24
1920	13.35	13.10	12.42	11.75	10.75	8.32	10.00	8.82	8.75	8.48	8.42	9.60	10.31
Av. 1914–1920	9.34	9.91	9.38	9.39	9.31	9.14	9.63	9.66	9.49	10.14	11.05	10.99	9.78
1921	8.82	9.00	8.10	7.75	7.38	7.32	6.78	7.84	7.55	7.60	8.00	7.65	7.82
1922	7.73	7.25	6.99	6.80	6.78	7.00	6.85	6.65	6.68	6.64	6.69	6.22	6.86
1923	5.80	5.97	6.15	6.18	5.99	5.95	5.98	6.39	6.25	6.12	6.23	6.63	6.14
1924	7.08	7.09	6.97	7.75	7.53	8.50	9.48	9.60	8.94	8.10	8.49	8.44	8.19
1925	8.26	8.49	7.84	8.08	8.23	8.72							

NEW YORK—WINTER PATENTS [4]

1909	$6.52	$6.28	$5.43	$5.77	$5.78	$5.74	$5.96	$5.95	$5.96	$5.82	$5.74	$5.40	$5.86
1910	5.44	5.36	5.07	4.92	4.81	4.88	5.02	4.92	4.78	4.63	4.67	4.65	4.93
1911	4.98	4.67	4.71	4.90	4.90	4.90	4.96	5.06	5.08	5.32	6.00	6.00	5.10
1912	5.79	5.28	5.34	5.33	5.33	5.33	5.55	5.75	5.44	5.50	5.50	5.54	5.47
1913	5.56	5.42	4.89	4.91	4.90	4.90	4.92	4.97	5.00	4.88	5.00	4.98	5.03
Av. 1909–1913	5.90	5.40	5.09	5.17	5.14	5.15	5.28	5.33	5.25	5.23	5.38	5.31	5.28
1914	4.90	5.22	5.81	5.80	5.80	5.86	6.79	7.88	7.36	7.39	7.55	6.64	6.43
1915	6.48	6.62	5.62	5.89	5.90	6.20	6.70	6.62	6.28	6.24	5.91	5.48	6.17
1916	5.63	7.34	7.86	8.30	8.90	8.60	9.09	8.87	9.53	11.41	14.57	12.98	9.42
1917	11.72	11.12	10.94	10.64	10.51	10.45	10.44	10.43	10.91	11.60	10.98	10.98	10.84
1918	11.35	10.71	10.40	10.28	10.25	10.52	10.48	10.25	10.55	11.40	11.38	11.19	10.73
1919	11.11	10.53	10.52	10.22	10.18	10.68	10.98	10.98	10.91	11.47	12.90	13.67	11.13
1920	12.46	11.20	11.22	10.14	9.38	8.82	8.87	8.36	8.15	7.00	7.09	7.39	9.17
Av. 1914–1920	9.09	8.96	8.92	8.75	8.70	8.73	9.05	9.06	9.13	9.42	10.05	9.76	9.13
1921	6.50	6.24	6.32	6.02	5.73	5.68	6.00	6.68	6.99	6.57	6.32	5.93	6.25
1922	7.10	6.49	6.57	6.76	6.98	6.79	6.67	6.63	6.56	6.72	6.45	6.34	6.67
1923	5.69	5.93	6.31	6.33	6.20	6.18	6.19	6.15	6.26	6.25	6.47	6.81	6.23
1924	7.24	7.17	7.17	7.97	8.26	8.87	9.79	9.72	9.39	8.64	9.22	9.11	8.55
1925	8.76	9.25	8.81	8.74	9.04	9.59							

NEW YORK—SPRING PATENTS [4]

1909	$6.45	$6.31	$5.62	$5.51	$5.56	$5.63	$5.80	$5.76	$5.82	$5.66	$5.62	$5.42	$5.76
1910	6.05	5.78	5.71	5.52	5.33	5.40	5.46	5.25	5.08	5.02	5.23	5.10	5.41
1911	5.13	5.36	5.44	5.42	5.45	5.22	5.42	5.43	5.40	5.54	5.88	5.73	5.45
1912	5.51	5.37	5.11	4.87	4.80	4.60	4.66	4.70	4.80	4.66	4.89	4.95	4.91
1913	4.98	4.98	4.75	4.50	4.52	4.58	4.61	4.76	4.90	4.66	4.72	4.79	4.73
Av. 1909–1913	5.62	5.56	5.33	5.16	5.13	5.08	5.19	5.18	5.20	5.11	5.27	5.20	5.25
1914	4.59	5.78	6.09	5.78	5.83	6.02	7.03	7.78	7.41	7.63	7.79	6.50	6.52
1915	6.82	6.91	6.44	5.58	5.62	6.10	6.69	6.64	5.99	6.37	6.27	5.78	6.25
1916	6.09	7.80	8.36	8.94	9.69	8.99	9.49	9.06	9.80	11.66	14.99	13.68	9.88
1917	12.32	12.46	11.69	11.31	10.93	10.86	10.63	10.63	10.94	11.00	10.98	10.98	11.23
1918	11.41	11.26	11.07	10.92	10.82	10.90	10.64	10.69	11.27	12.09	12.51	11.93	11.29
1919	12.12	12.35	11.73	12.20	13.11	14.25	14.49	13.25	13.07	13.88	14.83	14.20	13.29
1920	13.23	13.06	12.82	11.34	9.77	9.12	9.58	8.98	8.82	8.12	8.61	9.07	10.27
Av. 1914–1920	9.61	9.95	9.74	9.44	9.40	9.46	9.79	9.58	9.61	10.10	10.85	10.31	9.82
1921	9.03	8.48	8.31	7.50	6.97	6.94	6.85	8.05	7.95	7.96	8.18	7.65	7.82
1922	7.69	7.00	6.64	6.85	6.99	6.93	6.68	6.62	6.56	6.79	6.68	6.37	6.82
1923	6.07	6.38	6.40	6.36	6.17	6.20	6.23	6.50	6.39	6.26	6.46	6.84	6.36
1924	7.52	7.48	7.28	7.98	8.63	8.61	9.63	9.82	9.08	8.26	8.78	8.72	8.43
1925	8.54	8.86	8.34	8.26	8.62	9.13							

[3] Compiled from Chicago Board of Trade and Daily Trade Bulletin.
[4] Compiled from New York Journal of Commerce.

TABLE 39.—*Flour, wheat: Average wholesale price per barrel at markets named, 1909–1925*—Continued

KANSAS CITY—HARD WINTER PATENTS [5]

Year beginning July 1	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
1909	$5.42	$4.72	$4.68	$4.88	$4.68	$4.77	$4.78	$4.78	$4.83	$4.84	$4.84	$4.60	$4.82
1910	4.85	4.70	4.70	4.54	4.46	4.46	4.52	4.30	4.20	4.05	4.26	4.18	4.44
1911	4.06	4.19	4.30	4.65	4.60	4.54	4.80	4.72	4.69	4.79	4.90	4.90	4.60
1912	4.50	4.10	4.10	4.03	3.90	3.86	3.92	3.94	3.88	3.99	4.02	4.15	4.03
1913	4.10	4.07	4.19	4.01	3.95	3.93	3.95	3.95	3.98	4.00	4.00	3.98	4.01
Av. 1909–1913	4.59	4.36	4.39	4.42	4.32	4.32	4.39	4.34	4.32	4.33	4.40	4.36	4.38
1914	3.58	4.23	5.37	5.08	4.98	5.19	6.24	7.02	6.78	6.80	6.68	5.81	5.65
1915	5.58	5.38	4.91	4.90	4.98	5.18	5.75	5.74	5.12	5.20	5.08	4.81	5.22
1916	5.14	6.90	7.40	8.08	9.07	8.02	8.82	8.38	9.30	11.91	14.44	12.84	9.19
1917	11.95	12.41	10.74	10.50	10.31	10.02	10.10	10.25	10.31	10.31	10.38	10.38	10.64
1918	10.59	10.27	10.15	10.14	10.25	9.93	9.83	10.06	10.49	11.94	12.99	12.01	10.72
1919	11.11	10.70	10.98	11.56	12.02	13.52	14.08	12.64	12.26	13.09	14.23	13.37	12.46
1920	12.98	12.25	11.88	10.69	9.15	8.81	9.06	8.65	8.60	7.54	8.15	7.88	9.64
Av. 1914–1920	8.70	8.88	8.78	8.71	8.68	8.67	9.13	8.96	8.98	9.54	10.28	9.59	9.08
1921	7.15	6.61	7.08	6.57	6.05	6.15	6.13	6.85	7.14	7.28	7.44	6.81	6.77
1922	6.71	6.02	6.00	6.14	6.38	6.40	6.20	6.20	6.20	6.33	6.21	5.72	6.21
1923	5.39	5.59	5.66	5.89	5.68	5.68	5.87	5.94	5.96	5.88	6.09	6.31	5.83
1924	6.97	7.08	7.09	7.87	8.20	8.87	9.75	9.72	9.15	8.30	8.82	8.82	8.39
1925	8.34	8.67	8.40	8.34	8.69	9.19							

Division of Statistical and Historical Research.

[5] Compiled from Northwestern Miller, Kansas City Daily Price Current, and Kansas City Grain Market Review.

TABLE 40.—*Flour, wheat: Retail price per pound in cities listed and average for the United States, 1913–1925*

NEW YORK

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1913	3.3	3.2	3.2	3.2	3.2	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2
1914	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.8	3.7	3.6	3.7	3.4
1915	4.0	4.6	4.5	4.6	4.7	4.4	4.3	4.3	4.0	3.7	3.6	3.7	4.2
1916	4.0	4.1	3.9	3.9	3.9	3.9	3.8	4.6	5.0	5.3	5.8	5.5	4.5
1917	5.6	5.7	5.7	6.9	9.2	8.3	7.6	7.9	7.9	7.8	7.7	7.6	7.3
1918	7.0	7.1	7.8	7.0	7.1	7.2	7.2	7.4	7.3	7.3	7.1	6.9	7.2
1919	6.8	6.8	7.0	7.3	7.8	7.8	7.8	7.8	7.7	7.5	7.7	8.1	7.5
1920	8.5	8.8	8.6	8.7	9.3	9.7	9.8	9.5	9.0	8.3	7.3	6.6	8.7
Av. 1914–1920	5.6	5.8	5.8	5.9	6.5	6.4	6.2	6.4	6.4	6.2	6.1	6.0	6.1
1921	6.7	6.4	6.4	6.0	5.6	6.0	6.1	6.1	5.8	5.5	5.0	5.0	5.9
1922	5.0	5.1	5.4	5.4	5.4	5.5	5.4	5.4	5.0	5.0	4.9	4.9	5.2
1923	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.7	4.5	4.6	4.5	4.7	4.8
1924	4.7	4.7	4.7	4.7	4.8	4.8	5.0	5.1	5.4	5.4	5.5	5.6	5.0
1925	6.0	6.7	6.6	6.1	6.1	6.2	6.2	6.3	6.2	6.1	6.0	6.1	6.2

CHICAGO

1913	2.8	2.8	2.7	2.7	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.8
1914	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.3	3.4	3.4	3.4	3.4	3.1
1915	3.6	3.9	4.0	4.2	4.4	4.0	3.8	3.8	3.5	3.4	3.3	3.4	3.8
1916	3.5	3.7	3.6	3.5	3.5	3.5	3.5	3.9	4.5	4.9	5.2	5.1	4.0
1917	5.1	5.1	5.3	6.4	8.2	7.8	7.0	7.2	6.9	6.6	6.4	6.1	6.5
1918	6.1	6.3	6.4	6.2	6.4	6.3	6.5	6.5	6.5	6.4	6.3	6.3	6.4
1919	6.1	6.2	6.4	6.8	7.4	7.2	7.2	7.2	7.1	7.1	7.3	7.7	7.0
1920	7.9	7.8	7.7	8.0	8.7	8.5	8.3	7.8	7.6	7.0	6.2	5.5	7.6
Av. 1914–1920	5.0	5.1	5.2	5.4	5.9	5.7	5.6	5.7	5.6	5.5	5.4	5.4	5.5
1921	5.8	5.5	5.6	5.3	5.2	5.4	5.3	5.4	5.1	4.9	4.5	4.4	5.2
1922	4.4	4.7	4.9	4.9	4.9	4.8	4.8	4.7	4.3	4.2	4.2	4.3	4.6
1923	4.2	4.2	4.1	4.1	4.1	4.2	4.0	4.0	4.1	4.1	4.1	4.1	4.1
1924	4.0	4.1	4.1	4.1	4.1	4.2	4.4	4.6	4.7	4.8	4.9	5.1	4.4
1925	5.7	5.9	5.8	5.5	5.4	5.5	5.5	5.5	5.6	5.4	5.4	5.9	5.6

TABLE 40.—*Flour, wheat: Retail price per pound in cities listed and average for the United States, 1913–1925*—Continued

MINNEAPOLIS

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1913	2.8	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.0	2.8	2.8	2.8	2.9
1914	2.8	2.9	3.0	2.9	3.0	3.0	2.9	3.4	3.6	3.6	3.5	3.6	3.2
1915	4.1	4.5	4.4	4.4	4.5	4.0	4.0	3.9	3.4	3.3	3.4	3.6	4.0
1916	3.7	3.9	3.6	3.6	3.6	3.5	3.5	4.4	4.7	5.0	5.5	5.2	4.2
1917	5.3	5.1	5.4	6.3	8.1	7.6	6.7	7.3	6.3	6.1	5.9	5.8	6.3
1918	5.8	5.9	6.0	6.3	5.8	5.9	6.3	6.3	6.3	6.3	6.2	6.2	6.1
1919	6.2	6.2	6.4	6.9	7.2	7.2	7.2	7.2	7.1	7.2	7.4	8.1	7.0
1920	8.5	8.2	8.0	8.3	9.0	8.6	8.2	7.8	7.7	7.0	6.1	5.7	7.8
Av. 1914–1920	5.2	5.2	5.3	5.5	5.9	5.7	5.5	5.8	5.6	5.5	5.4	5.5	5.5
1921	6.1	5.7	5.7	5.4	5.5	5.9	5.9	5.6	5.5	5.3	4.9	4.9	5.5
1922	4.7	5.1	5.3	5.3	5.3	5.1	5.3	5.0	4.6	4.5	4.6	4.7	5.0
1923	4.6	4.7	4.6	4.6	4.6	4.5	4.4	4.4	4.3	4.4	4.2	4.3	4.5
1924	4.3	4.3	4.3	4.4	4.5	4.7	4.9	5.1	5.0	5.1	5.2	5.4	4.8
1925	5.7	5.9	5.8	5.4	5.5	5.6	5.8	5.7	5.5	5.4	5.5	5.7	5.6

UNITED STATES (AVERAGE OF LEADING CITIES)

1913	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
1914	3.2	3.3	3.3	3.3	3.3	3.3	3.2	3.5	3.7	3.7	3.7	3.7	3.4
1915	4.1	4.5	4.5	4.5	4.6	4.3	4.1	4.1	3.9	3.7	3.7	3.8	4.2
1916	3.9	4.1	4.0	3.9	3.9	3.9	3.8	4.4	4.9	5.1	5.7	5.5	4.4
1917	5.6	5.6	5.8	6.8	8.8	8.1	7.3	7.6	7.4	7.1	6.9	6.8	7.0
1918	6.6	6.6	6.6	6.6	6.6	6.7	6.7	6.8	6.8	6.7	6.7	6.7	6.7
1919	6.6	6.7	6.8	7.2	7.5	7.5	7.5	7.4	7.3	7.3	7.4	7.7	7.2
1920	8.1	8.1	8.0	8.1	8.7	8.8	8.7	8.4	8.3	7.8	7.3	6.6	8.1
Av. 1914–1920	5.4	5.6	5.6	5.8	6.2	6.1	5.9	6.0	6.0	5.9	5.9	5.8	5.9
1921	6.7	6.5	6.4	5.9	5.7	5.9	5.8	5.7	5.6	5.4	5.1	5.0	5.8
1922	4.9	5.1	5.3	5.3	5.3	5.3	5.2	5.1	4.9	4.8	4.8	4.9	5.1
1923	4.9	4.9	4.8	4.9	4.8	4.8	4.7	4.5	4.5	4.6	4.6	4.5	4.7
1924	4.5	4.6	4.6	4.6	4.6	4.6	4.8	5.1	5.1	5.3	5.4	5.6	4.9
1925	6.0	6.4	6.4	6.2	6.1	6.1	6.1	6.1	6.1	5.9	6.0	6.1	6.1

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

BREAD

TABLE 41.—*Bread: Average retail price per pound (baked weight), 1913–1925*

NEW YORK

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1913	6.0	6.0	6.0	6.0	6.0	6.2	6.4	6.1	6.0	6.0	6.0	6.1	6.1
1914	6.1	6.1	6.2	6.1	6.1	6.1	6.1	6.4	6.2	6.2	6.3	6.3	6.2
1915	6.4	7.2	6.6	6.6	6.6	6.8	6.9	6.9	6.6	6.6	6.6	6.6	6.7
1916	6.6	6.8	6.6	6.6	6.6	6.6	6.6	6.6	7.1	7.7	7.8	8.1	7.0
1917	8.0	8.1	8.7	8.9	9.8	9.9	9.9	9.9	9.9	9.9	9.9	8.8	9.3
1918	9.1	8.9	8.9	10.0	10.0	9.9	10.0	9.9	9.9	10.0	9.9	9.9	9.7
1919	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1920	10.5	11.1	11.1	11.6	11.8	11.9	11.9	11.9	11.9	11.9	11.9	11.6	11.6
Av. 1914–1920	8.1	8.3	8.3	8.5	8.7	8.7	8.8	8.8	8.8	8.9	8.9	8.8	8.6
1921	11.0	10.7	10.8	10.6	9.9	10.0	10.1	10.2	10.1	10.1	10.0	9.9	10.3
1922	9.8	9.0	8.9	8.9	8.9	9.7	9.7	9.7	9.8	9.8	9.8	9.7	9.5
1923	9.7	9.7	9.7	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
1924	9.4	9.4	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
1925	9.5	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6

TABLE 41.—*Bread: Average retail price per pound (baked weight) 1913–1925*—Continued

CHICAGO

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1913	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
1914	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.2	6.2	6.2	6.3	6.1
1915	6.4	7.2	7.2	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.6
1916	6.5	6.5	6.5	6.5	6.6	6.6	6.6	6.6	6.6	7.3	7.9	8.0	6.8
1917	8.1	8.2	8.2	8.6	9.6	10.5	10.5	10.5	10.5	10.5	10.1	9.0	9.5
1918	9.2	9.6	10.1	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.1
1919	10.2	10.2	10.2	10.0	10.0	10.0	10.0	10.0	10.0	10.7	10.6	10.7	10.2
1920	10.6	11.6	11.6	11.6	12.3	12.4	12.4	12.4	12.4	12.4	12.4	11.5	12.0
Av. 1914–1920	8.2	8.5	8.6	8.5	8.8	8.9	8.9	8.9	8.9	9.1	9.1	8.9	8.8
1921	11.3	11.3	11.3	11.2	9.9	9.9	9.8	9.8	9.8	9.8	9.8	9.8	10.3
1922	9.9	8.9	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.6
1923	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.8	9.7	9.7
1924	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.9	9.9	9.9	9.9	9.8
1925	10.1	10.1	10.1	9.9	9.9	9.9	9.9	9.9	9.9	9.8	9.8	9.9	9.9

MINNEAPOLIS

1913	5.7	5.7	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
1914	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.9	6.0	6.0	5.7
1915	6.1	6.4	6.4	6.5	6.5	6.5	6.5	6.5	6.5	6.3	6.3	6.3	6.4
1916	6.3	6.4	6.4	6.4	6.4	6.4	6.5	6.5	7.4	7.4	7.5	7.9	6.8
1917	8.0	8.0	8.0	8.0	9.3	10.5	10.5	10.6	10.5	10.4	10.5	9.7	9.5
1918	8.8	8.8	9.1	9.1	9.0	9.0	8.8	8.8	8.8	8.8	8.8	8.8	8.9
1919	9.2	9.2	9.2	9.2	9.2	9.6	9.6	9.6	9.6	9.6	9.6	9.8	9.4
1920	10.6	10.5	10.4	10.4	10.4	11.1	11.1	11.1	11.1	11.1	10.3	10.3	10.7
Av. 1914–1920	7.8	7.8	7.9	7.9	8.1	8.4	8.4	8.4	8.5	8.5	8.4	8.4	8.2
1921	10.3	10.3	10.3	10.3	9.6	9.6	9.6	8.6	8.6	8.4	8.4	9.5	
1922	8.4	8.4	8.4	8.8	8.9	9.0	9.0	9.0	9.0	9.0	9.0	8.8	
1923	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	
1924	9.0	9.0	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	9.0	
1925	9.0	10.0	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.0	9.9	9.9	10.0

UNITED STATES (AVERAGE OF LEADING CITIES)

1913	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
1914	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.3	6.4	6.4	6.4	6.5	6.3
1915	6.8	7.1	7.1	7.1	7.2	7.2	7.1	7.1	7.0	7.0	6.9	6.9	7.0
1916	6.9	7.0	7.0	7.0	7.0	7.0	7.0	7.1	7.7	8.1	8.4	7.8	7.3
1917	7.9	8.0	8.1	8.4	9.5	9.6	9.9	10.2	9.9	9.9	9.9	9.3	9.2
1918	9.4	9.5	9.6	9.8	9.9	10.0	10.0	9.9	9.9	9.8	9.8	9.8	9.8
1919	9.8	9.8	9.8	9.8	9.8	9.9	10.0	10.1	10.1	10.1	10.2	10.2	10.0
1920	10.9	11.1	11.2	11.2	11.5	11.8	11.9	11.9	11.9	11.8	11.6	10.8	11.5
Av. 1914–1920	8.3	8.4	8.4	8.5	8.7	8.8	8.9	8.9	9.0	9.0	9.0	8.8	8.7
1921	10.8	10.6	10.5	10.3	9.9	9.8	9.7	9.7	9.6	9.5	9.3	9.1	9.9
1922	8.8	8.6	8.7	8.7	8.8	8.8	8.8	8.7	8.7	8.7	8.7	8.6	8.7
1923	8.7	8.7	8.7	8.7	8.7	8.7	8.8	8.7	8.7	8.7	8.7	8.7	8.7
1924	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.8	8.8	8.8	8.9	8.9	8.8
1925	9.2	9.5	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

BRAN

TABLE 42.—*Bran, pure: Average price per ton in 100-pound sacks at Minneapolis, July, 1909–December, 1925*

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	20.50	20.08	18.95	19.06	19.02	20.49	22.66	22.09	20.83	18.42	17.93	16.40	19.70
1910	19.62	19.89	18.54	17.99	19.23	21.17	21.73	21.25	20.82	21.43	21.48	19.62	20.23
1911	20.98	20.96	21.42	21.43	22.05	22.99	23.96	25.25	25.13	24.23	23.32	20.22	22.59
1912	20.82	19.25	19.13	19.01	18.48	18.51	19.53	18.03	17.21	16.25	16.58	16.94	18.31
1913	16.40	20.75	21.54	19.86	20.10	20.22	21.59	22.63	23.71	23.34	22.08	20.23	21.04
Av. 1909–1913	19.48	20.19	19.92	19.47	19.78	20.68	21.89	21.85	21.54	20.73	20.28	18.68	20.37
1914	18.36	22.21	21.71	19.69	20.89	21.54	22.31	22.69	21.17	22.45	19.86	19.62	21.04
1915	20.42	20.06	18.18	18.19	19.96	18.41	18.78	20.08	18.53	18.62	18.99	18.32	19.04
1916	17.67	20.00	21.93	24.45	27.07	25.93	28.75	28.64	34.17	38.57	34.20	26.65	27.34
1917	32.29	31.80	30.26	30.64	33.30	38.62	32.50	32.50	32.85	33.04	31.09	30.70	32.47
1918	26.00	29.31	29.06	28.46	27.80	32.94	47.26	42.83	38.09	39.56	37.88	34.36	34.46
1919	37.26	41.99	37.66	36.89	37.97	41.58	41.98	42.67	46.70	50.25	53.18	50.74	43.24
1920	47.83	42.09	39.03	30.62	31.81	28.20	27.05	22.63	22.73	17.39	16.62	15.52	28.46
Av. 1914–1920	28.55	29.64	28.26	26.99	28.40	29.60	31.23	30.29	30.61	31.41	30.26	27.99	29.44
1921	14.83	15.49	14.53	13.60	19.75	21.75	22.16	25.41	24.58	23.06	21.77	16.05	19.42
1922	15.90	14.77	17.62	22.48	23.37	24.89	26.67	27.96	28.72	28.41	27.30	21.18	23.27
1923	20.35	24.89	28.50	28.54	26.34	25.28	25.56	24.40	23.37	21.64	18.59	20.04	23.96
1924	23.07	24.29	23.62	25.23	26.14	30.94	30.52	25.14	23.89	23.94	27.33	26.85	25.91
1925	24.05	24.64	23.61	23.56	26.31	26.74							

Division of Statistical and Historical Research. Compiled from the Minneapolis Daily Market Record

TABLE 43.—*Bran: Price per ton paid by farmers, United States, 1910–1925*

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	26.20	27.00	27.03	26.58	26.10	25.37	25.22	25.19	24.95	24.56	24.45	24.68
1911	24.92	25.27	24.94	25.48	25.93	25.87	25.80	25.92	26.09	26.52	26.72	26.99
1912	27.39	28.62	29.16	29.73	30.18	29.35	28.41	27.41	26.82	26.58	25.66	25.16
1913	25.24	25.32	24.96	24.69	24.59	24.67	24.65	25.10	26.59	26.52	26.47	26.43
1914	26.53	26.91	27.58	28.50	28.08	27.75	26.86	27.24	27.86	26.71	26.40	26.72
1915	27.91	28.96	28.23	28.28	28.41	27.68	27.47	27.22	26.47	25.81	25.42	25.53
1916	25.93	26.23	26.05	25.97	25.97	26.13	25.81	26.53	27.50	28.48	31.54	32.49
1917	32.76	34.87	36.23	42.07	44.19	40.83	40.40	43.16	39.46	39.23	39.42	42.53
1918	41.32	42.07	42.62	42.82	42.41	42.30	40.69	39.63	39.54	39.38	39.22	38.95
1919	49.78	49.95	47.93	48.24	48.66	47.54	47.14	49.28	49.58	47.70	48.32	48.79
1920	50.23	51.13	51.95	55.26	58.69	59.53	59.91	56.62	55.05	48.43	44.69	41.61
1921	39.74	36.77	35.18	32.15	29.71	29.35	26.83	26.25	25.31	24.22	23.60	26.10
1922	28.08	29.90	32.09	31.94	31.81	30.22	28.29	27.24	26.24	28.25	30.78	31.58
1923	32.53	33.58	35.48	35.86	36.44	35.32	33.27	31.31	32.60	34.84	35.19	34.67
1924	34.67	34.40	34.02	33.41	32.82	31.59	31.61	32.81	33.02	33.40	34.02	34.97
1925	37.38	37.60	35.70	34.75	35.45	36.36	35.93	35.55	35.10	34.20	33.95	35.20

Division of Crop and Livestock Estimates. As reported monthly by country dealers.

MIDDLINGS

TABLE 44.—*Middlings, flour: Average price per ton in 100-pound sacks at Minneapolis, July, 1909–December, 1925*

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	25.22	25.78	23.59	23.50	23.15	23.58	24.92	24.98	24.10	23.00	22.82	21.96	23.88
1910	23.90	24.56	23.74	23.15	23.00	23.56	23.41	23.54	22.82	23.05	23.25	23.25	23.44
1911	24.55	26.19	26.73	26.04	26.25	26.25	26.13	27.25	26.79	26.50	26.48	26.23	26.28
1912	27.38	27.00	26.71	25.62	23.55	22.30	22.50	22.36	21.78	20.67	19.72	20.96	23.38
1913	20.83	23.29	25.49	24.93	24.26	22.99	23.55	24.50	24.99	24.96	25.04	24.75	24.13
Av. 1909–1913	24.38	25.36	25.25	24.65	24.04	23.74	24.10	24.53	24.10	23.64	23.46	23.43	24.22
1914	24.86	27.54	27.23	26.06	26.78	27.58	28.94	27.86	26.17	26.64	27.33	27.48	27.04
1915	29.57	29.93	25.71	23.21	22.48	22.89	23.26	25.94	24.76	24.00	24.04	23.56	24.95
1916	23.22	26.79	28.76	31.94	34.99	34.23	35.75	34.24	38.35	42.29	41.70	42.74	34.58
1917	49.00	50.38	44.89	45.79	46.02	45.35	41.50	41.50	41.53	41.43	37.08	32.86	43.11
1918	27.35	30.66	30.44	29.90	29.32	37.82	53.30	46.08	43.46	45.38	50.71	49.70	39.51
1919	53.22	58.33	57.72	52.68	49.72	50.81	51.57	53.32	54.31	57.72	61.47	61.06	55.16
1920	62.70	60.68	56.20	40.58	38.52	30.71	27.20	24.82	25.66	21.49	19.64	20.00	35.68
Av. 1914–1920	38.56	40.62	38.71	35.74	35.40	35.63	37.36	36.25	36.32	36.99	37.42	36.77	37.15
1921	20.13	21.06	21.16	20.62	22.00	23.38	23.25	26.58	28.26	26.29	25.76	23.21	23.48
1922	23.58	22.82	22.40	25.45	25.92	26.61	28.24	29.43	30.30	30.56	31.38	29.90	27.22
1923	28.94	29.09	30.07	30.37	27.85	26.86	27.60	27.20	25.79	24.88	23.15	24.47	27.19
1924	28.58	29.56	29.99	31.60	31.83	34.84	36.57	31.33	28.84	29.19	33.24	33.50	31.59
1925	31.60	31.70	29.98	27.81	28.64	27.82							

Division of Statistical and Historical Research. Compiled from the Minneapolis Daily Market Record.

TABLE 45.—*Wheat futures: Volume of trading in seven grain-futures markets, by calendar years, 1921–1924*

[Thousand bushels—i. e., 000 omitted]

Market	1921		1922		1923		1924	
	Volume	Per cent of total	Volume	Per cent of total	Volume	Per cent of total	Volume	Per cent of total
Chicago Board of Trade	12,273,650	86.83	11,072,545	87.18	8,572,111	85.08	9,597,315	85.51
Chicago Open Board of Trade	237,780	1.68	366,559	2.89	328,452	3.26	330,125	2.94
Minneapolis Chamber of Commerce	788,446	5.58	503,956	3.97	544,600	5.40	642,607	5.73
Kansas City Board of Trade	527,560	3.73	393,181	3.10	347,169	3.44	371,676	3.31
Duluth Board of Trade	175,052	1.24	198,264	1.56	184,400	1.83	174,805	1.56
St. Louis Merchants Exchange	126,857	.90	139,471	1.10	83,187	.83	91,119	.81
Milwaukee Chamber of Commerce	10,213	.07	25,791	.20	22,365	.22	15,324	.14
Total	14,139,558	100.00	12,699,767	100.00	10,082,284	100.00	11,222,971	100.00

Grain Futures Administration.

TABLE 46.—*Wheat futures: Volume of trading in the principal futures, by months, Chicago Board of Trade, July 1, 1924, to June 30, 1925*

[Thousand bushels—i. e., 000 omitted]

Month	July wheat	September wheat	December wheat	May wheat	Other wheat futures	All futures
1924						
July	26,539	761,652	351,556	44,275	----------	1,184,022
August	2,471	394,962	583,867	153,970	----------	1,135,270
September	6,632	40,000	633,923	210,877	----------	891,432
October	41,767	----------	792,252	518,324	153	1,352,496
November	41,660	----------	337,389	739,418	----------	1,118,467
December	116,219	----------	51,540	1,167,314	15	1,335,088
1925						
January	229,261	41,004	----------	1,429,310	1,242	1,700,817
February	275,881	55,146	----------	1,250,557	----------	1,581,584
March	500,089	108,181	----------	1,443,625	----------	2,051,895
April	506,520	116,486	103	688,765	----------	1,311,874
May	877,955	348,446	33,466	87,383	35	1,347,285
June	519,595	805,183	251,712	----------	390	1,576,880
Total	3,144,589	2,671,060	3,035,808	7,733,818	1,835	16,587,110

Grain Futures Administration.

RYE

TABLE 47.—*Rye: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage harvested	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Chicago cash price per bushel No. 2 [2]				Domestic exports including rye flour, fiscal year beginning July 1 [3]
							December		Following May		
							Low	High	Low	High	
	1,000 acres	*Bush. of 56 lbs.*	*1,000 bushels*	*Cents*	*1,000 dollars*	*Dollars*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Bushels*
1909	*2,196*	16.1	35,406	72.2	25,548	11.63	72	80	74	80	242,262
1910	2,185	16.0	34,897	71.5	24,953	11.42	80	82	90	113	40,123
1911	2,127	15.6	33,119	83.2	27,557	12.96	91	94	90	95½	31,384
1912	2,117	16.8	35,664	66.3	23,636	11.16	58	64	60	64	1,854,738
1913	2,557	16.2	41,381	63.4	26,220	10.25	61	65	62	67	2,272,492
Av. 1909–1913	2,236	16.1	36,093	70.9	25,583	11.44	72.4	77.0	75.2	83.9	888,200
1914	2,541	16.8	42,779	86.5	37,018	14.57	107½	112½	115	122	13,026,778
1915	3,129	17.3	54,050	83.4	45,083	14.41	94½	98½	96½	99½	15,250,151
1916	3,213	15.2	48,862	122.1	59,676	18.57	130	151	200	240	13,703,499
1917	4,317	14.6	62,933	166.0	104,447	24.19	179	185	180	260	17,186,417
1918	6,391	14.2	91,041	151.6	138,038	21.60	154	164	145½	173	36,467,450
1919	6,307	12.0	75,483	133.2	100,573	15.95	150	182	198	229	41,530,961
1920	4,409	13.7	60,490	126.8	76,693	17.39	144	167	135½	167	47,337,466
Av. 1914–1920	4,330	14.4	62,234	128.9	80,218	18.53	137.0	151.4	152.9	184.4	26,357,532
1921	4,528	13.6	61,675	69.7	43,014	9.50	84	90	97½	111	29,943,852
1922	6,672	15.5	103,362	68.5	70,841	10.62	83½	92½	72	83	51,662,968
1923	5,171	12.2	63,077	65.0	40,971	7.92	69½	72½	65½	69½	19,901,719
1924	4,019	15.9	64,038	106.6	68,260	16.98	131½	151½	112½	127¼	50,242,278
1925 [4]	4,088	11.9	48,696	78.1	38,026	9.30	93½	111½	------	------	----------

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Based on farm price Dec. 1.
[2] Chicago Daily Trade Bulletin.
[3] Commerce and Navigation of the U. S. 1909–1918 and the June issues of Monthly Summaries of Foreign Commerce, 1919–1925.
[4] Preliminary.

TABLE 48.—*Rye: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
Mass	16.2	17.0	16.0	18.5	18.5	17.2	19.0	20.0	18.5	19.0	20.0	23.0	18.0	19.6	15.0	19.0	18.0	20.0	21.0	18.6
Conn	18.7	20.0	18.5	17.5	19.3	18.8	19.0	21.5	19.6	20.5	22.0	20.0	18.0	20.1	19.0	20.0	18.0	18.0	19.0	18.8
N. Y	17.0	18.3	16.7	16.5	17.2	17.1	17.7	18.7	18.0	19.0	16.5	16.0	17.5	17.6	15.5	16.0	16.3	17.0	16.5	16.3
N. J	16.3	18.0	16.4	17.5	18.0	17.2	18.5	20.0	19.0	18.5	18.5	16.0	17.5	18.3	17.5	19.0	17.8	17.5	18.0	18.0
Pa	15.3	17.0	15.1	17.5	17.5	16.5	18.0	18.0	17.0	17.0	17.0	16.0	16.0	17.0	16.0	17.0	17.0	16.0	17.0	16.6
Ohio	17.2	16.5	15.5	15.5	16.5	16.2	17.0	17.5	14.5	18.0	17.0	16.0	14.4	16.3	13.0	14.2	15.5	16.0	15.0	14.7
Ind	16.5	15.8	13.7	14.5	15.2	15.1	16.3	16.0	14.0	15.0	16.5	14.0	14.0	15.1	13.0	12.0	14.0	13.5	11.4	12.8
Ill	17.8	17.4	16.8	16.0	16.5	16.9	16.0	18.5	15.5	17.5	19.0	16.5	15.6	16.9	17.0	16.0	15.0	14.5	13.8	15.3
Mich	15.5	15.3	14.6	13.3	14.3	14.6	16.0	15.5	14.3	14.0	14.3	13.3	14.7	14.6	13.0	12.8	14.0	14.5	12.5	13.4
Wis	16.3	16.0	17.0	18.3	17.5	17.0	16.5	18.5	16.2	18.5	17.6	15.8	16.0	17.0	13.6	14.6	14.8	17.0	14.8	15.0
Minn	19.0	17.0	18.7	23.0	19.0	19.3	18.8	19.5	15.0	18.5	20.0	15.0	17.0	17.7	17.5	19.0	13.5	22.0	14.5	17.3
Iowa	17.8	18.5	18.0	19.0	18.2	18.3	19.0	18.5	17.0	18.0	19.0	15.9	17.0	17.8	16.1	19.7	17.6	18.0	16.4	17.6
Mo	15.0	15.0	14.1	14.8	15.0	14.8	14.0	13.5	11.0	14.7	14.0	12.0	12.0	13.0	11.2	12.0	12.5	13.5	12.0	12.2
N. Dak	18.4	8.5	16.6	18.0	14.4	15.2	17.1	15.0	13.3	9.5	10.5	8.0	10.0	11.9	11.0	16.1	7.8	15.6	10.0	12.1
S. Dak	17.5	17.0	10.0	19.5	13.2	15.4	17.0	19.5	18.0	16.0	18.0	13.0	13.5	16.4	16.0	18.0	11.5	14.0	9.5	13.8
Nebr	16.5	16.0	13.0	16.0	14.5	15.2	16.0	17.5	16.0	15.6	12.9	16.3	14.1	15.5	12.7	11.2	12.0	14.5	12.3	12.5
Kans	14.2	14.0	11.0	15.9	14.0	13.8	20.0	16.0	14.5	14.0	14.3	11.0	13.0	14.7	11.3	11.1	8.5	14.2	8.9	10.8
Del	14.0	15.5	15.0	14.0	14.0	14.5	17.5	15.5	15.0	16.0	14.5	13.0	15.0	15.2	11.0	14.1	14.4	13.5	15.0	13.6
Md	14.1	16.1	14.5	15.5	14.4	14.9	17.0	16.5	15.5	16.0	15.0	14.0	15.4	15.6	14.0	15.2	15.8	15.0	19.0	15.8
Va	12.3	13.5	11.5	12.5	12.3	12.4	13.0	14.5	12.5	15.0	12.0	11.5	12.0	12.9	11.0	11.5	12.0	11.5	12.0	11.6
W. Va	13.5	12.9	11.0	13.0	13.5	12.8	14.5	14.0	16.0	13.5	13.7	13.0	11.0	13.7	12.0	12.0	10.0	11.2	13.0	11.6
N. C	9.4	10.0	10.0	9.3	10.3	9.8	10.0	11.5	9.7	10.0	9.0	8.9	9.5	9.8	7.0	8.0	10.4	9.0	11.5	9.2
S. C	9.8	10.0	10.0	9.5	10.5	10.0	11.5	10.0	9.8	10.0	11.2	10.0	11.0	10.5	10.0	10.0	10.5	11.0	10.5	10.4
Ga	9.0	10.4	9.5	9.2	9.5	9.5	9.3	9.2	9.5	8.3	8.8	8.9	10.0	9.1	9.0	9.5	9.0	9.2	9.3	9.2
Ky	12.7	13.0	12.0	13.0	12.4	12.6	13.7	12.0	11.2	12.5	13.6	12.0	12.0	12.4	10.0	11.5	11.7	11.0	13.0	11.4
Tenn	10.7	11.0	11.9	11.5	12.0	11.4	13.0	10.5	10.0	9.8	10.0	8.0	9.0	10.0	8.0	9.0	10.0	11.0	11.0	9.8
Ala	11.3	12.0	10.0	11.5	11.0	11.2	13.0	10.0	13.0	9.5	11.0	9.5	10.9	11.0	12.0	5.0	12.0	11.0	8.0	9.6
Ark	10.5	12.0	10.0	10.5	11.5	10.9	10.5	10.5	10.0	13.5	10.5	9.5	10.0	10.6	9.0	12.0	9.0	11.0	11.0	10.4
Okla	13.5	13.7	9.5	12.0	9.5	11.6	16.0	13.5	10.0	10.0	11.0	14.0	15.0	12.8	12.0	10.0	12.0	14.0	12.0	12.0
Tex	11.2	11.5	10.0	16.6	15.0	12.9	14.8	17.0	10.0	10.0	5.4	17.0	16.0	12.9	12.0	9.0	12.0	16.0	4.0	10.6
Mont	29.0	20.0	23.0	23.5	21.0	23.3	21.0	22.5	20.5	12.7	12.0	3.0	8.0	14.2	11.2	14.0	11.0	14.0	12.5	12.5
Idaho	21.5	20.0	22.5	22.0	22.0	21.6	20.0	20.0	17.0	15.5	15.0	14.0	14.0	16.5	18.0	15.0	19.0	10.0	20.0	16.4
Wyo	26.0	18.5	20.0	19.0	19.0	20.5	17.0	20.0	15.5	14.0	18.0	9.0	18.0	15.9	21.0	14.0	13.0	10.0	12.0	14.0
Colo	22.0	14.0	12.0	19.5	17.0	16.9	17.5	17.5	14.0	16.0	7.0	8.8	11.8	13.2	11.3	9.0	12.0	9.0	10.0	10.3
N. Mex															14.0	4.8	12.0	16.0	4.0	10.2
Utah	22.0	18.5	15.5	15.0	17.0	17.6	17.5	15.5	12.0	8.0	13.0	7.0	8.3	11.6	9.3	10.0	11.4	9.0	11.0	10.1
Wash	21.0	20.5	22.0	20.0	21.0	20.9	19.7	18.2	14.5	12.7	10.0	12.0	9.5	13.8	14.0	10.0	15.7	7.9	11.0	11.7
Oreg	17.0	15.1	19.5	16.0	17.5	17.0	16.0	18.0	17.0	12.7	11.0	8.4	12.0	13.6	14.2	12.0	15.0	10.0	14.0	13.0
U. S	16.1	16.0	15.6	16.8	16.2	16.1	16.8	17.3	15.2	14.6	14.2	12.0	13.7	14.8	13.6	15.5	12.2	15.9	11.9	13.8

Division of Crop and Livestock Estimates.

TABLE 49.—*Rye: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	Preliminary 1925	Average 1909–1913 [1]	1922	1923	1924	Preliminary 1925
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Canada	117	2,105	1,448	891	852	17.9	15.4	16.0	15.4	16.1
United States	2,236	6,672	5,171	4,019	4,088	16.1	15.5	12.2	15.9	11.9
Total North America	2,353	8,777	6,619	4,910	4,940					
EUROPE										
Norway	37	30	27	25	25	26.3	28.7	27.5	25.5	30.6
Sweden	977	872	869	654	870	24.7	25.4	26.9	16.9	33.8
Denmark	636	547	574	466	526		26.1	26.4	22.4	26.2
Netherlands	557	500	519	489	496	29.5	34.3	28.1	32.3	31.0
Belgium	672	531	573	560	570	35.2	34.6	36.3	36.9	36.7
Luxemburg	26	20	20	16	17	25.0	12.5	19.6	19.0	22.1
France	3,095	2,195	2,215	2,196	2,175	17.0	17.5	16.5	18.3	20.6
Spain	1,988	1,757	1,801	1,820	1,846	13.9	14.9	15.6	14.4	16.2
Portugal	[2] 271	590	550	474			8.1	9.5	10.6	
Italy	346	320	315	310	311	18.3	17.4	20.6	19.7	21.6
Switzerland	60	48	48	48	47	29.7	31.0	34.3	29.9	34.9
Germany	12,713	10,236	10,790	10,525	11,635	29.0	20.1	24.4	21.4	27.3
Austria	1,110	834	922	928	942	21.4	16.3	17.2	17.4	26.0
Czechoslovakia	2,605	2,174	2,123	2,070	2,093	24.4	23.5	25.1	21.6	25.5
Hungary	1,608	1,663	1,620	1,643	1,691	19.5	15.1	19.3	13.5	18.5
Yugoslavia	732	487	462	483	492	12.3	9.3	12.8	11.5	17.1
Greece	76		70			14.9		17.8		
Bulgaria	542	442	425	414	453	13.9	16.9	16.1	10.7	19.6
Rumania	[3] 1,286	659	668	671	668	[3] 16.1	14.0	14.4	8.9	12.1
Poland	12,127	11,225	11,477	10,915	12,125	18.1	17.6	20.5	13.2	21.2
Lithuania	1,719	1,369	1,442	1,328	1,339	13.9	17.7	16.6	13.8	19.5
Latvia	888	584	659	658	659	14.7	11.7	16.6	11.9	18.8
Esthonia	486	392	406	394	387	16.7	14.8	16.3	13.8	18.1
Finland	589	586	579	564	568	17.8	18.0	16.2	20.0	20.7
Russia, including Russia in Asia	61,913	[4] 45,239	[4] 62,591	65,533	[4] 66,761	12.0	10.6	11.7	10.4	12.3
Total European countires reporting all years shown:										
Excluding Russia	44,829	37,471	38,534	37,177	39,935	21.7	18.9	21.2	17.3	23.3
Including Russia	106,742	82,730	101,125	102,710	106,696	16.1	14.4	15.4	12.9	16.4
Total Northern Hemisphere countries reporting all years shown:										
Excluding Russia	47,182	46,248	45,161	42,087	44,875					
Including Russia	109,095	91,507	107,744	107,620	111,636					
SOUTHERN HEMISPHERE										
Argentina	85	366	404	385	501	19.3	9.6	9.6	3.8	8.6
Chile	3	4	5	3	3	22.2	15.5	15.6	12.7	
Australia	9					12.7				
New Zealand	[5] 4	1				[5] 28.5	18.0			
Total Southern Hemisphere countries reporting all years shown	90	370	409	388	504					
Total all countries reporting all years shown:										
Excluding Russia	47,272	46,618	45,570	42,475	45,379					
Including Russia	109,185	91,877	108,153	108,008	112,140					

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Acreage figures are for crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Where changes in boundary have occurred averages are estimates for territory within present boundaries.
[2] Three-year average.
[3] Four-year average.
[4] Excluding Turkestan and Transcaucasia.
[5] One year only.

TABLE 50.—*Rye: Production in specified countries, average 1909–1913, annual 1922–1925*

[Thousand bushels—i. e. 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE					
NORTH AMERICA					
Canada	2,094	32,373	23,232	13,751	13,688
United States	36,093	103,362	63,077	64,038	48,696
Total North America	38,187	135,735	86,309	77,789	62,384
EUROPE					
Norway	973	862	742	637	766
Sweden	24,100	22,132	23,366	11,052	29,377
Denmark	19,104	14,284	15,157	10,433	13,779
Netherlands	16,422	17,140	14,571	15,797	15,387
Belgium	23,644	18,384	20,787	20,671	20,895
Luxemburg	651	250	392	304	375
France	52,501	38,412	36,517	40,241	44,766
Spain	27,636	26,252	28,075	26,281	29,880
Portugal	[2] 2,300	5,412	5,222	5,027	----------
Italy	6,317	5,563	6,484	6,114	6,704
Switzerland	1,783	1,488	1,646	1,433	1,642
Germany	368,337	206,033	263,037	225,573	317,418
Austria	23,785	13,589	15,836	16,189	24,534
Czechoslovakia	63,538	51,097	53,338	44,735	53,366
Hungary	31,377	25,147	31,274	22,103	31,271
Yugoslavia	9,004	4,523	5,906	5,541	8,425
Greece	1,129	----------	1,246	1,020	966
Bulgaria	7,539	7,453	6,862	4,414	8,889
Rumania	[3] 20,644	9,206	9,607	5,963	8,093
Poland	218,943	197,372	234,727	143,884	257,543
Lithuania	24,283	24,249	23,890	18,295	26,101
Latvia	13,061	6,845	10,770	7,849	12,405
Esthonia	8,129	5,797	6,550	5,451	7,020
Finland	10,490	10,530	9,417	11,260	11,752
Russia, including Russia in Asia	743,519	[4] 480,625	[4] 734,337	679,068	[6] 820,040
Total European countries reporting all years shown:					
Excluding Russia	[5] 973,390	707,708	820,197	645,240	931,354
Including Russia	1,716,909	1,188,333	1,554,534	1,324,308	1,751,394
Total Northern Hemisphere countries reporting all years shown:					
Excluding Russia	1,011,577	844,083	906,506	723,029	993,738
Including Russia	1,755,096	1,324,098	1,640,843	1,402,097	1,813,778
SOUTHERN HEMISPHERE					
Argentina	640	3,526	3,897	1,457	4,330
Chile	111	62	78	38	----------
Australia	114	----------	----------	----------	----------
New Zealand	[7] 114	18	8	37	----------
Total Southern Hemisphere countries reporting all years shown	640	3,526	3,897	1,457	4,330
Total Northern and Southern Hemisphere countries reporting all years shown:					
Excluding Russia	1,012,217	847,609	910,403	724,486	998,068
Including Russia	1,755,736	1,327,594	1,644,740	1,403,554	1,818,108
Estimated world total [8]—					
Excluding Russia	[5] 1,033,101	846,264	929,524	743,347	1,016,894
Including Russia	1,776,620	1,326,889	1,863,080	1,422,415	1,836,934

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Production as reported is for the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Where changes in boundary have occurred averages are estimates of production within present boundaries.

[2] Estimated on basis of acreage and average yield of 8.9 bushels per acre.

[3] Four-year average.

[4] Excluding Turkestan and Transcaucasia.

[5] The estimate for the five-year period 1909–1913 given in this table is somewhat larger than the figure obtained by averaging those five years in Table 52. This is because in the detailed table estimates for warring countries are for postwar boundaries, whereas in Table 52 they are for pre-war territory. As a result, in excluding Russia, which lost territory in the war, a smaller area is excluded in the detailed table than in Table 52.

[6] Excluding Transcaucasia.

[7] One year only.

[8] Excludes a few minor producing countries which do not enter into world trade or for which no statistics are available.

TABLE 51.—*Rye: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars		State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925[1]	1924	1925[1]	1924	1925[1]		1924	1925[1]	1924	1925[1]	1924	1925[1]
Mass	3	3	60	63	87	88	W. Va	10	10	112	130	144	156
Conn	4	4	72	76	101	99	N. C	71	71	639	816	952	1,281
N. Y	40	37	680	610	768	610	S. C	7	7	77	74	146	155
N. J	47	44	822	792	929	737	Ga	20	20	184	186	337	335
Pa	120	108	1,920	1,836	2,170	1,928	Ky	16	17	176	221	224	276
Ohio	60	66	960	990	1,066	871	Tenn	18	20	198	220	273	286
Ind	161	153	2,174	1,744	2,304	1,482	Ala	1	1	11	8	17	13
Ill	100	90	1,450	1,242	1,552	1,118	Ark	1	1	11	11	14	14
Mich	240	216	3,480	2,700	3,689	2,106	Okla	37	33	518	396	523	436
Wis	332	256	5,644	3,789	6,152	2,880	Tex	17	14	272	56	302	67
Minn	640	500	14,080	7,250	15,206	5,148	Mont	80	112	1,120	1,400	1,019	1,036
Iowa	39	35	702	574	716	459	Idaho	3	3	30	60	37	48
Mo	20	25	270	300	284	360	Wyo	44	47	440	564	387	361
N. Dak	1,257	1,571	19,609	15,710	20,393	10,212	Colo	74	85	666	850	566	570
S. Dak	236	201	3,304	1,910	3,370	1,280	N. Mex	2	1	32	4	32	4
Nebr	189	205	2,740	2,522	2,658	1,791	Utah	9	5	81	55	87	55
Kans	40	43	568	383	557	375	Wash	10	15	79	165	105	206
Del	5	5	68	75	85	90	Oreg	15	10	150	140	204	154
Md	15	18	225	342	274	390							
Va	36	36	414	432	530	549	U. S	4,019	4,088	64,038	48,696	68,260	38,026

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 52.—*Rye: World production, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year	Production in countries reporting all years	Estimates of world production, excluding Russia; preliminary	Total Europe, excluding Russia; preliminary	Three selected countries		
				Russia[1]	Germany	France
1909	670,609	872,000	821,000	903,622	446,746	55,689
1910	611,699	818,000	768,000	875,135	413,802	43,883
1911	628,384	828,000	779,000	768,650	427,796	46,749
1912	647,162	862,000	810,000	1,050,837	456,588	48,746
1913	690,162	893,000	834,000	1,011,316	481,169	50,055
1914	606,913	765,000	707,000	[2] 869,657	410,478	43,884
1915	543,968	691,000	620,000	[2] 909,943	360,310	33,148
1916	522,040	663,000	598,000	----------	351,826	33,351
1917	438,500	548,000	466,000	----------	[3] 275,696	25,669
1918	473,551	590,000	476,000	----------	[3] 262,832	30,100
1919	444,907	686,000	586,000	----------	[3] 240,161	30,577
1920	392,804	619,000	533,000	[3] 317,081	[3] 194,255	34,492
1921	488,435	858,000	759,000	[3] 345,423	[3] 267,626	44,392
1922	456,529	846,000	713,000	[3] 480,625	[3] 206,033	38,412
1923	473,992	930,000	826,000	[3] 734,337	[3] 263,037	36,517
1924	425,346	743,000	650,000	[3] 679,068	[3] 225,573	40,241
1925, preliminary	531,950	1,017,000	937,000	[3] 820,040	[3] 317,418	44,766

Division of Statistical and Historical Research. For each year is shown the production during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Includes all Russian territory reporting for years named.
[2] Excludes Poland.
[3] New boundaries, and therefore not comparable with earlier years.

TABLE 53.—*Rye: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1917–1924*

Year beginning July	Percentage of year's receipts												
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Season
1917	2.8	14.8	20.5	17.1	11.3	7.6	5.8	6.4	7.6	3.4	1.7	1.0	100.0
1918	5.6	11.3	14.9	14.5	12.2	9.5	8.4	4.9	6.3	4.8	3.4	4.2	100.0
1919	8.2	15.0	13.3	12.4	7.8	9.1	8.5	4.7	6.2	6.4	4.3	4.1	100.0
1920	7.3	20.7	18.1	12.2	8.8	7.0	6.6	4.7	4.3	3.7	3.3	3.3	100.0
1921	13.9	20.8	17.6	10.6	6.3	5.9	4.5	4.8	4.9	4.0	4.2	2.5	100.0
1922	10.7	20.5	14.8	12.3	10.2	8.7	6.5	5.3	4.0	2.9	2.2	1.9	100.0
1923	5.3	18.8	19.2	14.2	9.4	8.5	5.4	5.9	3.5	2.5	3.0	4.3	100.0
1924	3.9	16.9	25.4	23.3	10.7	7.0	5.0	3.1	1.7	1.0	1.2	.8	100.0

Division of Crop and Livestock Estimates.

TABLE 54.—*Rye: Receipts at markets named, 1909–1924*

[Thousand bushels—i. e., 000 omitted]

Year beginning July	Minneapolis	Duluth	Chicago	Milwaukee	Omaha	Fort William and Port Arthur[1]
1909	2,444	902	1,362	965		
1910	1,518	134	1,121	1,033		
1911	2,453	759	2,077	2,582		
1912	5,943	2,341	3,299	2,336		
1913	5,538	1,357	3,206	2,836		
Average 1909–1913	3,579	1,099	2,213	1,950		
1914	5,737	4,323	3,274	3,608		
1915	6,774	4,216	5,651	3,872		
1916	7,118	2,812	5,459	3,050	1,048	
1917	11,923	3,482	3,766	2,947	1,121	212
1918	16,467	16,115	8,467	4,472	1,782	970
1919	9,325	17,027	6,119	4,094	1,630	1,172
1920	5,428	14,631	4,132	3,607	1,409	2,832
Average 1914–1920	8,967	8,944	5,267	3,664		
1921	4,754	17,446	4,235	2,282	2,048	5,297
1922	15,111	42,619	7,585	3,241	1,916	11,552
1923	13,336	16,922	2,952	1,449	736	6,837
1924	8,447	38,818	12,586	4,455	983	5,265
1924						
July	427	1,994	2,210	129		
August	1,257	1,527	1,304	168		
September	1,577	11,228	648	350	165	1,576
October	2,586	12,409	1,135	887	339	1,302
November	715	5,105	2,386	343	167	805
December	431	2,054	894	263	76	363
1925						
January	476	880	378	211	81	124
February	208	727	209	160	60	124
March	287	282	98	68	29	154
April	190	591	611	40	18	197
May	190	1,609	2,663	72	28	228
June	303	412	50	1,764	20	78
July	115	183	21	22	18	135
August	979	430	98	73		179
September	2,312	3,586	319	61	77	1,478
October	851	1,564	727	37	57	628
November	762	1,073	631	38	46	663
December	926	823	90	88	132	616

Division of Statistical and Historical Research. Compiled from Minneapolis Daily Market Record, Chicago Daily Trade Bulletin, Grain Dealers Journal, and Canadian Statistics.

[1] Crop year begins in September.

TABLE 55.—*Rye: Classification of cars graded by licensed inspectors, all inspection points*

Year beginning July	Total of each grade, annual inspections, 1923–1924											
	Receipts						Shipments					
	1	2	3	4	Sample	Total	1	2	3	4	Sample	Total
1923–24 [1]												
Cars	14,394	13,532	3,872	1,061	473	33,332	22,068	8,481	132	89	26	30,796
Per cent	43.2	40.6	11.6	3.2	1.4	100	71.7	27.5	.4	.3	.1	100
1924–25												
Cars	27,977	24,251	8,841	2,957	876	64,902	31,838	38,210	698	131	69	70,946
Per cent	43.1	37.4	13.6	4.6	1.3	100.0	44.9	53.8	1.0	.2	.1	100.0

Grain Division.

[1] First complete year of inspection.

TABLE 56.—*Rye, including flour: International trade, average 1910–1914, annual 1923–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Year ended June 30							
	Average 1910–1914		1923		1924		1925 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria	(1 2)		(1 2)	19		1 20	(1 2)	3 43
Argentina	(1 2)	4 273		1,649		3,092		1,693
Bulgaria [1]		1,925		530		129	5 6	5 24
Canada	65	58	26	9,138	21	8,596	28	5,875
Hungary	1 140	1 14,150	3 2	3 20	(2 3)	3,658	3 4	3 3,677
Poland			1 7	1 1	1 2	1 2,482	6 2	3 7 2,210
Rumania	1 3 26	1 2,992		3 225		3 1,202		3 9 413
Russia	1 5,381	1 33,979				10 25,577		10 1,920
Spain		33	(2)	1		2		(2 3)
United States		888		51,663		19,902		50,242
Yugoslavia				1 1		1 14		3 246
PRINCIPAL IMPORTING COUNTRIES								
Austria	1 1,469	1 2	3 1,609	1 8	5,892	1 38	4,180	3 5 15
Belgium	5,755	830	231	1,177	1,554	244	1,117	847
Czechoslovakia			1 40	1 364	4,827	11 1,760	8,730	11 128
Denmark	1 8,753	1 288	5,410	420	10,231	510	7,002	532
Esthonia					3 7 1,443		3 1,483	
Finland			5,921	8	10,563	10	6,310	13
France	3,316	26	614	599	2,776	1,065	1,306	479
Germany	16,226	43,936	42,765	651	24,940	63	22,057	5,413
Greece			1 633		1 11		3 2	
Italy	654	2	227	3	230	237	24	357
Latvia			3 870	1 92	3 2,181	1 1	3 1,978	1 123
Netherlands	1 29,557	1 17,889	3,179	1,266	9,432	2,978	6,376	2,913
Norway	1 10,644	1 12 51	7,053		8,097		7,502	
Portugal	1 174	(1 2)						
Sweden	1 3,940	1 59	819	438	4,651	157	4,815	28
Switzerland	1 728	1 1	2	(2)	14	(2)	35	1
United Kingdom	4 2,120	4 7	13 892	13 304	13 1,508	13 240		
Total 28 countries	88,948	117,389	70,300	68,567	88,373	71,977	72,957	77,202

Division of Statistical and Historical Research. Official sources except where otherwise noted.

[1] Year ended July 31 as compiled by the International Institute of Agriculture.
[2] Less than 500 bushels.
[3] International Institute of Agriculture.
[4] Average of calendar years 1909–1913.
[5] Eight months.
[6] Ten months ended May 31, International Institute of Agriculture.
[7] Eleven months.
[8] Average for the seasons 1911–12 to 1913–14.
[9] Six months.
[10] Commercial source.
[11] Rye figure from International Institute of Agriculture
[12] Season 1913–14.
[13] Year ended December 31.

TABLE 57.—*Rye: Estimated price per bushel, received by producers, United States, 1909–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	80.1	75.4	72.6	73.2	72.7	73.3	75.4	76.3	76.6	75.8	74.8	74.7	74.5
1910	74.5	74.2	73.4	72.2	71.6	72.4	73.2	72.5	73.6	75.6	76.8	77.4	73.4
1911	76.2	76.2	78.3	81.4	83.2	83.0	83.6	84.2	84.6	84.8	85.4	84.8	81.0
1912	80.8	74.4	70.4	69.4	67.6	65.0	66.4	66.0	63.0	62.6	63.2	63.6	69.0
1913	62.0	61.8	63.9	64.0	63.3	63.0	62.1	61.8	62.4	63.0	63.6	63.8	63.0
Av. 1909–1913	74.7	72.4	71.7	72.0	71.7	71.3	72.1	72.2	72.0	72.4	72.8	72.9	72.2
1914	62.0	68.2	77.2	79.6	83.3	88.4	95.4	103.0	102.9	101.2	100.0	95.9	83.4
1915	91.4	87.2	83.6	83.7	84.6	84.4	86.8	87.0	84.6	83.6	83.8	83.6	85.3
1916	83.4	91.6	101.9	109.7	118.7	120.3	121.0	124.8	130.8	149.8	173.6	180.0	114.6
1917	177.6	170.0	165.8	169.3	167.4	168.2	172.6	187.9	218.0	228.1	204.4	178.8	176.5
1918	166.9	161.6	156.6	153.3	152.1	151.2	145.6	136.3	139.0	150.6	149.6	141.2	152.7
1919	144.2	144.0	137.0	132.8	131.5	142.8	153.4	149.8	150.6	169.6	183.5	186.4	144.6
1920	178.8	168.8	165.6	152.2	134.4	125.8	128.1	128.8	122.4	112.0	108.8	108.0	145.0
Av. 1914–1920	129.2	127.3	126.8	125.8	124.6	125.9	129.0	131.1	135.5	142.1	143.4	139.1	128.9
1921	101.0	94.0	89.2	81.6	72.2	69.6	70.0	77.0	83.8	85.9	87.8	82.8	83.0
1922	74.0	66.9	63.2	65.2	68.2	70.7	71.7	71.0	70.1	70.8	69.2	62.2	67.8
1923	56.3	55.3	57.2	58.8	62.1	63.9	63.5	64.5	62.8	60.4	60.1	61.6	59.8
1924	68.8	79.8	80.1	105.7	108.6	112.7	126.2	132.2	125.1	100.9	103.6	101.8	100.1
1925	92.3	92.8	81.9	74.1	73.4	86.8							

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, July, 1909–December, 1923.

TABLE 58.—*Rye: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Massachusetts	98	101	102	127	200	227	175	195	161	175	140	135	145	140	147
Connecticut	91	98	102	125	210	205	200	174	159	150	150	125	140	130	139
New York	79	89	93	128	184	172	150	158	139	99	97	91	113	100	100
New Jersey	80	82	92	117	175	173	160	170	138	102	85	94	113	93	97
Pennsylvania	77	83	84	109	170	165	157	140	130	95	87	91	113	105	98
Ohio	75	81	83	120	161	150	145	135	125	84	83	78	111	88	89
Indiana	70	85	82	119	160	152	140	130	124	73	79	73	106	85	83
Illinois	72	85	83	122	165	150	130	130	124	80	75	75	107	90	85
Michigan	70	91	85	130	165	150	128	130	126	70	76	62	106	78	78
Wisconsin	68	91	87	132	169	150	133	130	127	71	72	65	109	76	79
Minnesota	60	89	81	127	167	150	130	122	124	62	68	53	108	71	72
Iowa	65	77	80	115	155	147	132	117	118	73	70	66	102	80	78
Missouri	79	87	86	123	165	163	150	125	128	86	93	88	105	120	98
North Dakota	58	84	79	125	164	145	121	119	120	58	60	48	104	65	67
South Dakota	60	78	76	118	155	141	125	109	115	58	58	49	102	67	67
Nebraska	62	74	73	116	155	135	115	103	110	60	65	56	97	71	70
Kansas	74	80	76	110	167	170	141	100	121	68	70	75	98	98	82
Delaware	80	92	99	123	178	171	160	136	137	100	105	96	125	120	109
Maryland	79	86	88	110	168	170	163	156	134	92	110	97	122	114	107
Virginia	84	90	93	107	175	175	170	155	138	95	90	107	128	127	109
West Virginia	88	90	93	119	169	180	165	160	139	95	95	103	129	120	108
North Carolina	101	105	105	130	200	198	210	190	163	125	120	135	149	157	137
South Carolina	145	150	151	185	285	295	295	300	237	230	180	173	190	210	201
Georgia	142	150	140	160	270	210	272	210	202	175	135	190	183	180	173
Kentucky	88	95	94	129	175	161	175	150	140	112	110	103	127	125	115
Tennessee	97	98	103	135	195	192	200	190	159	135	119	116	138	130	128
Alabama	131	110	135	175	268	261	260	250	208	160	153	160	156	158	157
Arkansas	99	105	100	115	150	210	200	220	157	130	100	120	131	130	122
Oklahoma	90	95	77	125	170	187	150	100	129	66	80	90	101	110	89
Texas	109	99	103	120	196	235	167	150	153	100	125	98	111	120	111
Montana	66	70	65	96	165	144	185	108	119	53	54	51	91	74	65
Idaho	64	67	68	95	135	165	175	100	115	70	67	68	122	80	81
Wyoming	78	81	90	108	155	152	180	115	126	58	52	66	88	64	66
Colorado	65	65	70	105	146	140	130	105	109	60	66	56	85	67	67
New Mexico										70	100	90	100	100	92
Utah	67	60	65	100	160	180	200	150	131	70	60	90	107	100	85
Washington	78	85	75	111	175	200	185	160	142	65	95	72	133	125	98
Oregon	87	100	90	115	170	205	190	125	142	68	85	93	136	110	98
United States	85.9	86.5	83.4	122.1	166.0	151.6	133.2	126.8	124.2	69.7	68.5	65.0	106.6	78.1	77.6

Division of Crop and Livestock Estimates.

TABLE 59.—*Rye, No. 2: Weighted average price per bushel, 1909–1925*

CHICAGO

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Weighted average[1]
1909	$0.79	$0.71	$0.72	$0.73	$0.74	$0.77	$0.81	$0.81	$0.79	$0.79	$0.77	$0.76	$0.76
1910	.77	.75	.74	.76	.79	.81	.84	.82	.89	.95	1.02	.90	.84
1911	.84	.85	.91	.97	.95	.93	.94	.92	.91	.94	.93	.83	.91
1912	.74	.72	.69	.69	.64	.61	.64	.62	.60	.62	.62	.62	.65
1913	.63	.66	.67	.65	.64	.63	.61	.62	.61	.62	.65	.63	.64
Av. 1909–1913	.75	.74	.75	.76	.75	.75	.77	.76	.76	.78	.80	.75	.76
1914	.64	.84	.95	.92	1.02	1.10	1.19	1.23	1.17	1.17	1.19	1.17	1.05
1915	1.08	1.00	.96	1.01	.99	.97	1.01	.97	.93	.96	.98	.98	.99
1916	.98	1.13	1.20	1.33	1.47	1.41	1.43	1.46	1.61	1.87	2.20	2.40	1.54
1917	2.27	1.90	1.86	1.84	1.78	1.82	2.01	2.39	2.84	2.64	2.20	1.80	2.11
1918	1.73	1.67	1.63	1.63	1.68	1.59	1.61	1.38	1.61	1.73	1.59	1.46	1.61
1919	1.55	1.54	1.40	1.38	1.42	1.66	1.76	1.56	1.72	1.99	2.13	2.27	1.70
1920	2.04	1.90	1.99	1.69	1.59	1.61	1.63	1.47	1.46	1.35	1.47	1.32	1.62
Av. 1914–1920	1.47	1.43	1.43	1.40	1.42	1.45	1.52	1.49	1.62	1.67	1.68	1.63	1.52
1921	1.27	1.07	1.04	.86	.79	.86	.81	.97	1.02	1.04	1.06	.90	.97
1922	.82	.73	.72	.78	.87	.88	.87	.86	.83	.86	.78	.70	.81
1923	.65	.67	.70	.72	.71	.70	.73	.72	.69	.66	.67	.76	.70
1924	.84	.93	1.03	1.26	1.31	1.41	1.57	1.57	1.28	1.12	1.19	1.13	1.25
1925	.97	1.05	.90	.83	.88	1.03							

MINNEAPOLIS

1909	$0.76	$0.67	$0.66	$0.68	$0.69	$0.72	$0.77	$0.76	$0.74	$0.73	$0.71	$0.69	$0.70
1910	.73	.73	.71	.72	.74	.77	.79	.78	.84	.88	1.01	.87	.77
1911	.79	.80	.85	.92	.88	.87	.90	.88	.89	.89	.87	.79	.86
1912	.69	.64	.62	.63	.58	.56	.58	.57	.55	.57	.57	.56	.60
1913	.57	.61	.61	.56	.54	.55	.55	.56	.56	.57	.60	.59	.58
Av. 1909–1913	.71	.69	.69	.70	.69	.69	.72	.71	.72	.73	.75	.70	.70
1914	.58	.80	.89	.87	1.01	1.06	1.15	1.24	1.12	1.11	1.16	1.12	.98
1915	1.02	.97	.90	.96	.93	.92	.96	.95	.89	.93	.94	.94	.94
1916	.93	1.15	1.20	1.26	1.44	1.38	1.42	1.42	1.58	1.80	2.26	2.37	1.35
1917	2.20	1.75	1.84	1.81	1.77	1.83	1.93	2.24	2.91	2.74	2.30	1.85	1.93
1918	1.84	1.68	1.60	1.58	1.62	1.57	1.54	1.34	1.54	1.71	1.55	1.45	1.58
1919	1.54	1.48	1.39	1.36	1.38	1.66	1.73	1.53	1.70	1.95	2.08	2.14	1.60
1920	2.09	1.92	1.85	1.66	1.48	1.49	1.58	1.44	1.42	1.28	1.37	1.26	1.61
Av. 1914–1920	1.46	1.39	1.38	1.36	1.38	1.42	1.47	1.45	1.59	1.65	1.67	1.59	1.43
1921	1.15	1.00	.99	.80	.72	.78	.75	.95	.97	.97	1.02	.86	.92
1922	.76	.69	.66	.71	.81	.83	.82	.80	.76	.81	.76	.64	.75
1923	.61	.62	.66	.66	.64	.65	.67	.66	.63	.61	.63	.70	.65
1924	.83	.86	.95	1.21	1.23	1.33	1.54	1.54	1.30	1.06	1.14	1.11	1.14
1925	.95	1.00	.83	.77	.81	.98							

Division of Statistical and Historical Research. Compiled from Chicago Daily Trade Bulletin and Minneapolis Daily Market Record.

[1] Average of daily prices weighted by carlot sales.

CORN

TABLE 60.—*Corn: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage	Average yield per acre	Production	Price per bushel received by producers, Dec. 1	Farm value Dec. 1	Value per acre[1]	Chicago cash price per bushel, No. 2 mixed[2]				Domestic exports, including corn meal, fiscal year beginning July 1[3]	Imports, fiscal year beginning July 1[3]	Per cent of crop exported
							December		Following May				
							Low	High	Low	High			
	1,000 acres	*Bu. of 56 lbs. shelled*	*1,000 bushels*	*Cents*	*1,000 dollars*	*Dollars*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Bushels*	*Bushels*	*P. ct.*
1909	*98,383*	26.1	2,572,336	58.6	1,507,185	15.32	62½	66	56	63	38,128,498	----------	1.5
1910	104,035	27.7	2,886,260	48.0	1,384,817	13.31	45½	50	52¼	55¼	65,614,522	----------	2.3
1911	105,825	23.9	2,531,488	61.8	1,565,258	14.79	68	70	76¼	82½	41,797,291	53,425	1.7
1912	107,083	29.2	3,124,746	48.7	1,520,454	14.20	47½	54	55¼	60	50,780,143	903,062	1.6
1913	105,820	23.1	2,446,988	69.1	1,692,092	15.99	64	73½	67	72½	10,725,819	12,367,369	.4
Average 1909–1913	104,229	26.0	2,712,364	56.6	1,533,961	14.72	57.5	62.7	61.4	66.6	41,409,255	2,664,771	1.5
1914	103,435	25.8	2,672,804	64.4	1,722,070	16.65	62¼	68¼	50½	56	50,668,303	9,897,939	1.3
1915	106,197	28.2	2,994,793	57.5	1,722,680	16.22	69½	75	69	78½	39,896,928	5,208,497	2.6
1916	105,296	24.4	2,566,927	88.9	2,280,729	21.66	88	96	152	174	66,753,294	2,267,299	1.6
1917	116,730	26.3	3,065,233	127.9	3,920,228	33.58	160	190	150	170	49,073,263	3,196,420	.9
1918	104,467	24.0	2,502,665	136.5	3,416,240	32.70	135	155	160½	185	23,018,822	3,311,211	.6
1919	97,170	28.9	2,811,302	134.5	3,780,597	38.91	142	160	189	217	16,728,746	10,229,249	2.2
1920	101,699	31.5	3,208,584	67.0	2,150,332	21.14	70¼	86	59	66	70,905,781	5,743,384	5.9
Average 1914–1920	104,999	27.0	2,831,758	95.8	2,713,268	25.84	103.9	118.6	118.6	135.2	45,289,120	5,693,428	1.6
1921	103,740	29.6	3,068,569	42.3	1,297,213	12.50	46¾	51½	59½	65	179,490,442	124,591	5.8
1922	102,846	28.3	2,906,020	65.8	1,910,775	18.58	69½	77½	78	87½	96,596,221	137,529	3.3
1923	104,324	29.3	3,053,557	72.6	2,217,229	21.25	69¾	87	76¼	81	23,135,200	227,704	.8
1924	101,076	22.9	2,312,745	98.2	2,270,564	22.46	113	135½	107½	121½	9,791,136	4,617,319	.4
1925[4]	101,631	28.5	2,900,581	67.4	1,956,326	19.25	77	85	----	----	----------	----------	----

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Based upon farm price Dec. 1.
[2] Chicago Daily Trade Bulletin. Contract to 1915.
[3] Compiled from Commerce and Navigation of U. S. 1909–1918, and June issues of Monthly Summaries of Foreign Commerce, 1919–1925.
[4] Preliminary.

TABLE 61.—*Corn: Percentage reduction from full yield per acre from stated causes as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	13.0	7.3	1.5	1.0	0.5	1.6	0.7	0.2	25.8	0.2	2.3	0.4	0.3	0.6	29.6
1910	13.9	3.0	.8	.9	.4	1.6	.5	.2	21.3	.2	2.4	.4	1.2	.5	26.0
1911	23.4	1.6	(1)	.4	.2	3.4	.1	.5	29.6	.2	2.3	.2	.4	1.0	33.7
1912	8.7	4.6	.9	1.7	.5	1.0	.3	.4	18.1	.3	4.8	.3	2.3	.5	26.3
1913	27.1	1.2	.4	1.0	.3	3.1	.4	.2	33.7	.1	3.7	.2	.4	.8	38.9
1914	20.8	1.3	.4	.4	.5	2.1	.4	.2	26.1	.1	3.6	.1	.2	.5	30.6
1915	3.0	11.9	2.1	6.9	.6	.2	1.1	.7	26.5	.3	2.1	.1	.2	.7	29.9
1916	18.5	5.8	1.7	1.7	.4	1.7	1.1	.4	31.3	.3	2.0	.1	.6	.4	34.7
1917	12.1	2.9	.6	13.5	.6	1.2	.3	.4	31.6	.2	1.4	.1	.2	.3	33.8
1918	22.1	.9	.5	2.0	.4	6.3	.3	.3	32.8	.3	2.6	.1	1.5	.4	37.7
1919	10.8	7.3	1.4	.1	.3	1.0	.4	.1	21.4	.3	3.1	.1	.2	.3	25.4
1920	5.4	8.3	.6	.7	.5	.3	.4	.1	11.3	.3	3.7	.1	.3	.2	15.9
1921	10.6	1.1	.3	.2	.4	.9	.6	------	14.1	.8	3.5	-----	.1	.2	18.7
1922	14.2	2.3	.5	.2	.9	1.0	.2	------	19.3	.3	3.0	.1	.2	.1	23.0
1923	9.9	4.2	.7	2.7	.6	.7	1.1	------	19.9	.6	2.4	.1	.1	.3	23.4
1924	11.2	10.7	1.3	9.7	1.4	.5	.5	.1	35.4	.4	2.6	.2	.8	.3	39.7

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 62.—*Corn: Acreage, production, and total farm value, by States, 1924 and 1925*

	Thousands of acres		Production thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
Maine	12	13	516	585	702	655
New Hampshire	14	15	672	750	900	750
Vermont	83	85	3,901	4,080	4,603	4,080
Massachusetts	41	42	1,845	2,100	2,380	2,310
Rhode Island	8	9	320	405	448	486
Connecticut	55	57	2,365	2,850	2,838	3,135
New York	677	691	23,018	24,876	26,931	24,130
New Jersey	195	206	6,630	10,712	7,691	7,820
Pennsylvania	1,316	1,421	48,034	72,471	56,680	57,977
Ohio	3,432	3,707	89,232	177,936	92,801	101,424
Indiana	4,450	4,628	113,920	201,318	107,085	110,725
Illinois	8,946	9,240	295,218	388,080	280,457	225,086
Michigan	1,610	1,642	45,885	65,680	48,638	49,260
Wisconsin	2,185	2,141	56,810	99,556	59,650	71,680
Minnesota	4,586	4,357	123,822	156,852	105,249	87,837
Iowa	10,912	11,130	305,536	478,590	284,148	268,010
Missouri	6,500	6,825	156,000	201,338	149,760	138,923
North Dakota	1,320	1,056	26,400	24,816	20,064	13,649
South Dakota	4,814	4,766	102,538	83,405	82,030	50,043
Nebraska	8,716	9,100	191,752	236,600	174,494	144,326
Kansas	6,021	6,623	130,656	104,643	113,671	69,064
Delaware	140	145	3,780	5,365	4,234	3,487
Maryland	537	568	16,647	25,560	18,478	17,892
Virginia	1,499	1,639	31,479	36,058	39,664	36,419
West Virginia	460	506	11,960	18,469	14,830	13,469
North Carolina	2,317	2,271	41,706	42,014	51,715	46,215
South Carolina	1,650	1,584	19,800	19,483	24,354	21,431
Georgia	3,975	3,895	45,712	41,676	51,197	41,676
Florida	600	580	8,100	8,700	9,072	8,700
Kentucky	3,048	3,200	76,200	84,800	77,724	68,688
Tennessee	3,100	3,162	66,650	63,240	71,982	56,284
Alabama	2,900	2,797	36,250	37,760	44,225	37,760
Mississippi	2,240	1,977	26,880	35,586	33,869	33,451
Arkansas	2,090	2,006	33,440	28,084	35,781	27,241
Louisiana	1,250	1,225	14,375	22,050	16,531	20,727
Oklahoma	2,862	2,558	54,378	19,185	48,396	17,266
Texas	3,943	3,154	63,088	26,809	69,397	29,490
Montana	420	399	7,560	6,584	7,484	6,255
Idaho	66	78	2,026	3,198	2,289	2,398
Wyoming	180	191	2,160	4,393	2,030	3,075
Colorado	1,450	1,494	14,500	22,410	12,760	15,687
New Mexico	220	175	3,960	3,150	4,356	3,150
Arizona	31	39	682	780	852	1,014
Utah	15	18	300	419	435	419
Nevada	2	2	45	50	54	60
Washington	43	58	1,290	2,030	1,445	1,928
Oregon	59	71	1,800	2,059	2,178	2,203
California	86	85	2,907	3,026	4,012	3,571
United States	101,076	101,631	2,312,745	2,900,581	2,270,564	1,956,326

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 63.—*Corn: Yield per acre, by States, 1909–1925.*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
Me	38.0	46.0	44.0	40.0	38.0	41.2	46.0	41.0	43.0	37.0	45.0	55.0	45.0	44.6	50.0	41.0	38.0	43.0	45.0	43.4
N. H	35.1	46.0	45.0	46.0	37.0	41.8	46.0	45.0	46.0	40.0	45.0	46.5	45.0	44.8	53.0	43.0	42.0	48.0	50.0	47.2
Vt	37.0	43.0	41.0	40.0	37.0	39.6	47.0	46.0	43.0	45.0	38.0	46.5	47.0	44.6	55.0	42.0	39.0	47.0	48.0	46.2
Mass	38.0	45.5	44.0	45.0	40.5	42.6	47.0	47.0	42.0	45.0	52.0	52.3	40.0	46.5	48.0	40.0	43.0	45.0	50.0	45.2
R. I	33.2	40.0	45.0	41.5	36.5	39.2	42.0	43.0	31.0	42.0	44.0	45.0	40.0	41.0	46.0	40.0	38.0	40.0	45.0	41.8
Conn	41.0	53.2	48.5	50.0	38.5	46.2	46.0	50.0	43.0	50.0	50.0	50.0	40.0	47.0	52.0	45.0	41.0	43.0	50.0	46.2
N. Y	36.0	38.3	38.5	38.6	28.5	36.0	41.0	40.0	30.0	31.0	36.0	43.0	40.0	37.3	46.0	35.5	32.4	34.0	36.0	36.8
N. J	32.7	36.0	36.8	38.0	39.5	36.6	38.5	38.0	40.0	42.0	41.0	40.0	44.0	40.5	47.0	42.0	40.0	34.0	52.0	43.0
Pa	32.0	41.0	44.5	42.5	39.0	39.8	42.5	38.5	39.0	39.0	40.0	47.0	45.0	41.6	48.0	44.0	40.0	36.5	51.0	43.9
Ohio	39.5	36.5	38.6	42.8	37.5	39.0	39.1	41.5	31.5	38.0	36.0	43.0	43.4	38.9	41.0	39.0	41.0	26.0	48.0	39.0
Ind	40.0	39.3	36.0	40.3	36.0	38.3	33.0	38.0	34.0	36.0	33.0	37.0	40.5	35.9	36.0	37.0	38.5	25.6	43.5	36.1
Ill	35.9	39.1	33.0	40.0	27.0	35.0	29.0	36.0	29.5	38.0	35.5	36.0	34.6	34.1	34.0	35.5	37.5	33.0	42.0	36.4
Mich	35.4	32.4	33.0	34.0	33.5	33.7	36.0	32.0	27.5	21.5	30.0	37.0	39.0	31.9	39.0	35.3	34.5	28.5	40.0	35.5
Wis	33.0	32.5	36.3	35.7	40.5	35.6	40.5	23.0	36.0	22.0	40.2	45.0	43.2	35.7	46.2	44.5	37.0	26.0	46.5	40.0
Minn	34.8	32.7	33.7	34.5	40.0	35.1	35.0	23.0	33.5	30.0	40.0	40.0	37.5	34.1	41.0	33.0	36.0	27.0	36.0	34.6
Iowa	31.5	36.3	31.0	43.0	34.0	35.2	38.0	30.0	36.5	37.0	36.0	41.6	46.0	37.9	42.0	45.0	40.5	28.0	43.0	39.7
Mo	26.4	33.0	26.0	32.0	17.5	27.0	22.0	29.5	19.5	35.0	20.0	27.0	32.0	26.4	30.0	28.5	30.0	24.0	29.5	28.4
N. Dak	31.0	14.0	25.0	26.7	28.8	25.1	28.0	14.0	26.5	9.0	19.0	33.0	24.0	21.9	28.0	27.5	33.5	20.0	23.5	26.5
S. Dak	31.7	25.0	22.0	30.6	25.5	27.0	26.0	29.0	28.5	28.0	34.0	28.5	30.0	29.1	32.0	28.5	34.5	21.3	17.5	26.8
Nebr	24.8	25.8	21.0	24.0	15.0	22.1	24.5	30.0	26.0	27.0	17.7	26.2	33.8	26.5	28.0	25.0	33.0	22.0	26.0	26.8
Kans	19.9	19.0	14.5	23.0	3.2	15.9	18.5	31.0	10.0	13.0	7.1	15.2	26.5	17.3	22.2	19.3	21.7	21.7	15.8	20.1
Del	31.0	31.8	34.0	34.0	31.5	32.5	36.0	31.5	34.0	34.0	31.0	30.0	37.5	33.4	37.0	29.4	33.1	27.0	37.0	32.7
Md	31.4	33.5	36.5	36.5	33.0	34.2	37.0	35.0	39.0	39.0	35.0	41.0	38.5	37.8	39.0	40.0	39.3	31.0	45.0	38.9
Va	23.2	25.5	24.0	24.0	26.0	24.5	20.5	28.5	28.0	27.0	28.0	28.0	30.0	27.1	25.0	28.0	29.0	21.0	22.0	25.0
W. Va	31.4	26.0	25.7	33.8	31.0	29.6	31.0	31.5	30.5	30.0	31.0	34.0	34.0	31.7	34.0	34.0	34.0	26.0	36.5	32.9
N. C	16.8	18.6	18.4	18.2	19.5	18.3	20.3	21.0	18.5	20.0	21.0	19.0	22.5	20.3	19.3	20.0	22.5	18.0	18.5	19.7
S. C	16.7	18.5	18.2	17.9	19.5	18.2	18.5	16.5	15.5	19.0	17.0	16.0	19.0	17.4	16.0	14.5	16.5	12.0	12.3	14.3
Georgia	13.9	14.5	16.0	13.8	15.5	14.7	14.0	15.0	15.5	16.0	15.0	14.5	15.0	15.0	15.0	12.0	12.2	11.5	10.7	12.3
Fla	12.6	13.0	14.6	13.0	15.0	13.6	16.0	15.0	15.0	15.0	16.0	15.0	13.5	15.1	14.0	14.0	12.5	13.5	15.0	13.8
Ky	29.0	29.0	26.0	30.4	20.5	27.0	25.0	30.0	28.0	31.5	26.0	24.0	30.5	27.9	25.6	28.0	28.5	25.0	26.5	26.7
Tenn	22.0	25.9	26.8	26.5	20.5	24.3	24.0	27.0	26.0	29.0	24.0	21.4	28.0	25.6	25.8	23.0	24.5	21.5	20.0	23.0
Ala	13.5	18.0	18.0	17.2	17.3	16.8	17.0	17.0	12.5	16.0	14.6	14.5	15.7	15.3	14.5	14.0	14.0	12.5	13.5	13.7
Miss	14.5	20.5	19.0	18.3	20.0	18.5	18.5	19.0	14.0	20.5	17.0	15.0	16.0	17.1	18.0	17.5	14.5	12.0	18.0	16.0
Ark	18.0	24.0	20.8	20.4	19.0	20.4	17.5	23.0	17.7	24.0	13.0	18.0	23.4	19.5	22.0	19.5	15.5	16.0	14.0	17.4
La	23.0	23.6	18.5	18.0	22.0	21.0	19.3	20.5	21.0	18.0	16.0	17.5	19.2	18.8	19.5	17.0	15.4	11.5	18.0	16.3
Okla	17.0	16.0	6.5	18.7	11.0	13.8	12.5	29.5	13.5	8.5	7.5	24.0	28.0	17.6	25.0	18.0	11.5	19.0	7.5	16.2
Tex	15.0	20.6	9.5	21.0	24.0	18.0	19.5	23.5	19.0	11.0	10.0	30.0	26.0	19.9	25.2	20.0	18.5	16.0	8.5	17.6
Mont	35.0	23.0	26.5	25.5	31.5	28.3	28.0	28.0	25.0	12.5	21.0	4.0	12.1	18.7	20.0	24.3	26.0	18.0	16.5	21.0
Idaho	30.6	32.0	30.0	32.8	32.0	31.5	31.0	35.0	35.0	31.0	40.0	32.0	36.0	34.3	35.0	38.0	42.0	30.7	41.0	37.3
Wyo	28.0	10.0	15.0	23.0	29.0	21.0	25.0	25.0	22.0	20.0	25.0	16.0	24.0	22.4	22.0	24.0	27.0	12.0	23.0	21.6
Colo	24.2	19.9	14.0	20.8	15.0	18.8	23.0	24.0	15.5	20.0	17.5	15.0	20.5	19.4	14.5	16.0	25.0	10.0	15.0	16.1
N. Mex	31.3	23.0	24.7	22.4	18.5	24.0	28.0	26.0	21.0	20.0	25.0	21.6	21.7	23.3	22.0	13.6	16.4	18.0	18.0	17.6
Ariz	32.1	32.5	33.0	33.0	28.0	31.7	32.0	30.0	35.0	27.0	28.0	29.0	22.0	29.0	29.0	30.0	30.0	22.0	20.0	26.2
Utah	31.4	30.3	35.0	30.0	34.0	32.1	35.0	34.0	33.0	25.0	28.0	19.2	21.9	28.0	24.6	24.4	24.9	20.0	23.3	23.4
Nev		30.0	30.5	30.0	34.0	31.1	36.0	35.0	34.0	30.0	32.0	26.9	32.0	32.3	29.1	21.1	23.3	22.4	25.0	24.2
Wash	27.8	28.0	28.5	27.3	28.0	27.9	27.0	27.0	37.0	37.0	38.0	36.0	36.0	34.0	40.0	41.0	37.0	30.0	35.0	36.6
Oreg	30.7	25.5	28.5	31.5	28.5	28.9	30.0	35.0	33.5	30.0	31.0	26.5	31.0	31.0	30.0	33.0	35.0	30.5	29.0	31.5
Calif	34.8	37.5	36.0	37.0	33.0	35.7	36.0	41.0	32.0	32.0	35.0	32.0	33.0	34.4	35.0	36.0	35.0	33.8	35.1	35.0
U. S	26.1	27.7	23.9	29.2	23.1	26.0	25.8	28.2	24.4	26.3	24.0	28.9	31.5	27.0	29.6	28.3	29.3	22.9	28.5	27.7

Division of Crop and Livestock Estimates.

TABLE 64.—*Corn: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1917–1924*

Year beginning July	Percentage of year's receipts												
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Season
1917	5.3	4.0	3.4	3.8	8.8	12.2	14.2	16.1	13.7	7.1	5.6	5.8	100.0
1918	6.7	6.9	8.4	6.7	7.3	12.0	15.0	7.2	7.5	8.2	8.0	6.1	100.0
1919	4.5	5.6	4.9	5.6	9.2	15.0	12.9	9.5	8.7	5.9	7.6	10.6	100.0
1920	5.4	5.6	6.9	5.3	7.1	11.3	14.3	11.7	8.9	5.6	8.5	9.4	100.0
1921	4.9	7.3	8.6	6.7	6.6	12.4	13.8	12.4	7.5	4.7	7.6	7.5	100.0
1922	6.8	7.5	9.1	8.2	8.7	13.6	10.7	11.0	6.6	5.3	6.1	6.4	100.0
1923	6.8	7.2	6.1	5.6	10.4	12.3	12.9	13.3	7.4	6.1	5.9	6.0	100.0
1924	6.6	6.2	6.5	7.0	11.1	13.0	13.6	9.5	8.1	6.3	7.8	4.3	100.0

Division of Crop and Livestock Estimates.

TABLE 65.—*Corn: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bushels*	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Canada	309	318	318	295	239	56.0	43.4	42.8	40.7	44.2
United States	104,229	102,846	104,324	101,076	101,631	26.0	28.3	29.3	22.9	28.5
Mexico	[2] 6,093	7,058	7,930	8,072	5,271	[2] 13.5	9.7	12.8	13.2	13.1
Guatemala	----	455	457	388	----	----	11.9	17.2	----	----
Total North American countries reporting all years shown	110,631	110,222	112,572	109,443	107,141	----	----	----	----	----
EUROPE										
France	1,160	790	845	846	818	19.4	16.0	15.0	21.3	24.8
Spain	1,134	1,159	1,166	1,162	1,170	23.4	23.2	20.5	22.2	24.1
Portugal	----	843	752	----	----	----	13.8	13.6	----	----
Italy	4,090	3,857	3,790	3,806	3,830	25.1	19.9	23.5	27.8	27.8
Switzerland	3	4	4	4	4	37.7	46.2	41.2	44.2	45.0
Austria	190	148	144	147	139	23.8	23.5	24.0	25.3	34.0
Czechoslovakia	376	392	398	389	387	22.3	25.2	26.7	26.3	27.8
Hungary	2,192	2,445	2,459	2,459	2,581	27.7	19.9	20.0	30.1	35.8
Yugoslavia	4,786	4,722	4,452	4,856	5,222	23.4	19.0	19.0	30.8	----
Greece	[3] 454	----	----	----	----	[3] 21.7	----	----	----	----
Bulgaria	1,492	1,313	1,364	1,465	1,531	17.6	11.8	19.7	18.6	18.4
Rumania	[3] 9,644	8,411	8,413	8,949	9,713	[3] 20.0	14.2	18.0	17.4	18.1
Poland	164	183	189	190	193	17.2	15.2	20.3	21.9	17.9
Russia, including Russia in Asia	3,246	5,408	4,171	5,037	7,774	16.1	15.0	20.5	18.7	22.7
Total European countries reporting all years shown:										
Excluding Russia	25,231	23,424	23,224	24,273	25,588	21.9	16.9	19.8	21.9	23.1
Including Russia	28,477	28,832	27,395	29,310	33,362	21.1	16.5	19.9	21.2	23.0
NORTH AFRICA										
Morocco	----	355	462	493	510	----	8.9	8.0	8.0	6.6
Algeria	34	20	20	24	21	17.6	10.8	5.2	10.0	15.3
Tunis	[4] 43	16	44	41	45	5.3	1.9	5.4	5.0	4.1
Egypt	[4] 1,705	2,035	1,865	1,878	----	37.7	32.6	35.1	36.0	----

[1] Where changes in boundaries have occurred as a result of the World War estimates have been adjusted to correspond with the area within the post-war boundaries.
[2] One year only.
[3] Four-year average.
[4] Includes some sorghum.

TABLE 65.—*Corn: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Average [1] 1909–1913	1922	1923	1924	1925	Average [1] 1909–1913	1922	1922	1924	1925
NORTHERN HEMISPHERE—Continued										
ASIA										
India	[5] 5,898	6,290	5,916	5,824	------	14.0	15.6	12.9	15.0	------
Japan	133	140	136	------	------	25.5	24.7	24.8	------	------
Chosen	156	227	232	229	------	14.3	12.8	12.1	10.4	------
Philippines	[2] 812	1,359	1,378	1,317	------	9.2	10.8	13.0	13.6	------
Total Northern Hemisphere reporting all years shown:										
Excluding Russia	136,289	130,072	136,322	134,274	133,305	------	------	------	------	------
Including Russia	139,535	135,480	140,493	139,311	141,079	------	------	------	------	------
Estimated Northern Hemisphere total:										
Excluding Russia	146,800	145,900	147,500	145,300	144,500	------	------	------	------	------
Including Russia	150,046	151,308	151,671	150,337	152,274	------	------	------	------	------
SOUTHERN HEMISPHERE										
Brazil	------	7,556	8,461	6,178	6,301	------	26.8	18.6	26.2	------
Chile	56	70	68	58	------	26.0	24.0	20.5	20.7	------
Uruguay	589	569	480	460	------	10.4	11.4	9.6	11.4	------
Argentina	8,710	7,851	8,464	9,162	10,527	22.0	22.4	32.7	20.3	------
Union of South Africa	[2] 2,290	4,608	------	------	------	[2] 13.5	15.3	------	------	------
Southern Rhodesia	161	221	232	240	------	11.4	24.3	16.6	17.8	------
Java and Madura	------	3,887	4,028	4,356	3,988	------	12.6	15.1	15.3	15.3
Australia	353	313	316	------	------	28.5	23.6	25.7	------	------
New Zealand	[3] 5	10	8	9	------	[3] 53.0	50.6	50.8	47.3	------
Total Southern Hemisphere countries reporting all years shown through 1924	9,521	8,721	9,232	9,965	------	------	------	------	------	------
Estimated Southern Hemisphere total	21,800	25,085	26,637	25,415	------	------	------	------	------	------
Estimated world total [6]:										
Excluding Russia	168,600	170,900	174,200	170,700	------	------	------	------	------	------
Including Russia	171,846	176,308	178,371	175,737	------	------	------	------	------	------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture unless otherwise stated.

Acreage given is for crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Where changes in boundaries have occurred as a result of the World War estimates have been adjusted to correspond with the area within the post-war boundaries.

[2] One year only.

[3] Four-year average.

[5] Two-year average.

[6] Excludes a few minor producing countries which do not enter into world trade and for which no production statistics are available.

TABLE 66.—*Corn: Production in specified countries, average 1909–1913, annual 1922–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925, preliminary
NORTHERN HEMISPHERE					
NORTH AMERICA					
Canada	17,297	13,798	13,608	11,998	10,564
United States	2,712,364	2,906,020	3,053,557	2,312,745	2,900,581
Mexico	133,362	68,260	101,320	106,345	68,919
Guatemala	[2] 245	5,412	7,874	------	------
Total North American countries reporting all years shown	2,863,023	2,988,078	3,168,485	2,431,088	2,980,064

[1] Where changes in boundaries have occurred as a result of the World War estimates have been adjusted to correspond with the area within the post-war boundaries.

[2] Two-year average.

TABLE 66.—*Corn: Production in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Average 1909–1913	1922	1923	1924	1925, preliminary
NORTHERN HEMISPHERE—Continued					
EUROPE					
France	22,467	12,675	12,673	18,027	20,328
Spain	26,548	26,832	23,924	25,804	28,210
Portugal	(11,500)	11,665	10,219	11,212	11,727
Italy	102,676	76,830	89,204	105,679	106,295
Switzerland	113	185	165	177	180
Austria	4,530	3,477	3,450	3,719	4,720
Czechoslovakia	8,398	9,884	10,620	10,239	10,779
Hungary	60,813	48,725	49,247	74,122	92,470
Yugoslavia	111,897	89,796	84,781	149,399	----------
Greece	[3] 9,860	----------	8,330	7,106	----------
Bulgaria	26,277	15,479	26,866	27,264	28,148
Rumania	[4] 193,209	119,829	151,403	155,461	175,463
Poland	2,822	2,776	3,831	4,161	3,464
Russia including Russia in Asia	52,185	81,188	85,594	94,300	176,461
Total European countries reporting all years shown:					
Excluding Russia	[5] 459,353	328,357	381,602	435,865	481,784
Including Russia	511,538	409,545	467,196	530,165	658,245
AFRICA					
Morocco	(3,500)	3,163	3,712	3,929	3,389
Algeria	598	215	304	241	322
Tunis	[6] 228	31	236	205	185
Egypt	[6] 64,273	66,460	65,449	67,572	----------
ASIA					
India	[2] 82,620	98,320	76,088	87,120	----------
Japan	3,391	3,456	3,367	(3,400)	----------
Chosen	2,236	2,902	2,806	2,375	----------
Philippines	[4] 7,461	14,651	17,876	17,879	----------
Total Northern Hemisphere reporting all years shown:					
Excluding Russia	3,326,702	3,319,849	3,554,339	2,871,328	3,465,744
Including Russia	3,378,887	3,401,037	3,639,933	2,965,628	3,642,205
Estimated Northern Hemisphere total:					
Excluding Russia	3,615,000	3,508,000	3,821,000	3,213,000	3,747,000
Including Russia	3,667,000	3,589,000	3,907,000	3,307,000	3,923,000
SOUTHERN HEMISPHERE					
Brazil	----------	202,212	157,026	161,734	----------
Chile	1,455	1,677	1,392	1,203	----------
Uruguay	6,120	6,499	4,600	[2] 5,670	----------
Argentina	191,698	176,103	276,756	186,298	----------
Union of South Africa	[4] 33,517	70,584	39,285	73,214	----------
Southern Rhodesia	1,834	5,376	3,857	4,286	----------
Java and Madura	----------	49,115	60,914	66,760	61,147
Australia	10,057	7,388	8,115	(8,000)	----------
New Zealand	[4] 265	506	406	426	----------
Total Southern Hemisphere countries reporting all years shown through 1924	234,889	260,745	326,296	271,097	----------
Estimated Southern Hemisphere total	430,000	519,000	552,000	508,000	----------
Estimated world total: [7]					
Excluding Russia	[5] 4,045,000	4,028,000	4,373,000	3,721,000	----------
Including Russia	4,097,000	4,109,000	4,459,000	3,815,000	----------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Production as reported is for the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[2] Two year average.
[3] One year only.
[4] Four-year average.
[5] The estimate for the five-year period 1909–1913 given in this table is somewhat larger than the figure obtained by averaging those five years in Table 67. This is because in the detailed table estimates for warring countries are for postwar boundaries, whereas in Table 67 they are for pre-war territory. As a result, in excluding Russia, which lost territory in the war a smaller area is excluded in the detailed table than in Table 67.
[6] Includes some sorghum.
[7] Excludes China and a few minor producing countries which do not enter into world trade and for which no production statistics are available.

TABLE 67.—*Corn: World production, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year	Production in countries reporting all years	Preliminary estimate of world production excluding Russia	Preliminary estimate of total Europe excluding Russia	Four selected countries			
				United States	Italy	Rumania	Argentina
1909	2,740,791	3,785,000	499,000	2,572,336	99,289	70,138	175,187
1910	3,056,689	3,987,000	564,000	2,886,260	101,722	103,665	27,676
1911	2,683,121	3,836,000	501,000	2,531,488	93,518	110,712	295,849
1912	3,287,886	4,379,000	547,000	3,124,746	98,668	103,921	196,642
1913	2,616,156	3,808,000	576,000	2,446,988	108,388	114,663	263,135
1914	2,844,850	4,107,000	562,000	2,672,804	104,967	102,552	325,178
1915	3,174,515	4,229,000	520,000	2,994,793	121,824	86,412	161,133
1916	2,699,694	3,617,000	389,000	2,566,927	81,547	----------	58,839
1917	3,197,869	4,175,000	351,000	3,065,233	82,771	----------	170,660
1918	2,615,641	3,598,000	299,000	2,502,665	76,590	31,318	224,239
1919	2,935,030	3,073,000	454,000	2,811,302	85,846	[1] 141,352	258,686
1920	3,343,224	4,544,000	520,000	3,208,584	89,298	[1] 182,031	230,420
1921	3,198,858	4,178,000	394,000	3,068,569	92,325	[1] 110,638	176,171
1922	3,026,049	4,028,000	426,000	2,906,020	76,830	[1] 119,829	176,103
1923	3,183,112	4,373,000	475,000	3,053,557	89,204	[1] 151,403	276,756
1924	2,466,215	3,721,000	592,000	2,312,745	105,679	[1] 155,461	186,298
1925 [2]	3,060,456	----------	579,000	2,900,581	106,295	[1] 175,463	----------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture.

For each year is shown the production during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] New boundaries, and therefore not comparable with earlier years.
[2] Preliminary.

TABLE 68.—*Corn: Farm stocks, supplies, and shipments, United States, 1909–1925*

Year beginning Nov. 1	Old stocks on farms Nov. 1 [1]	Crop			Total supplies	Stocks on farms Mar. 1 following [1]	Shipped out of county where grown [1]
		Quantity	Quality [2]	Proportion merchantable [1]			
	1,000 bush.	*1,000 bush.*	*Per cent*	*Per cent*	*1,000 bush.*	*1,000 bush.*	*1,000 bush.*
1909	77,403	2,572,336	84.2	82.7	2,126,965	2,649,739	980,848	620,057
1910	113,919	2,886,260	87.2	86.4	2,492,763	3,000,179	1,165,378	661,777
1911	123,824	2,531,488	80.6	80.1	2,027,922	2,655,312	884,059	517,766
1912	64,764	3,124,746	85.5	85.0	2,654,907	3,189,510	1,290,642	680,831
1913	137,972	2,446,988	82.2	80.1	1,961,058	2,584,960	866,352	422,059
1914	80,046	2,672,804	85.1	84.5	2,259,755	2,752,850	910,894	498,285
1915	96,009	2,994,793	77.2	71.1	2,127,965	3,090,802	1,116,559	560,824
1916	87,908	2,566,927	83.8	83.9	2,154,487	2,654,835	782,303	450,589
1917	34,448	3,065,233	75.2	60.0	1,837,728	3,099,681	1,253,290	678,027
1918	114,678	2,502,665	85.6	82.4	2,062,041	2,617,343	855,269	362,589
1919	69,835	2,811,302	89.1	87.1	2,448,204	2,881,137	1,045,575	470,328
1920	139,083	3,208,584	89.6	86.9	2,789,720	3,347,667	1,564,832	705,481
1921	285,769	3,068,569	84.0	87.5	2,684,634	3,354,338	1,305,559	587,893
1922	177,287	2,906,020	85.0	88.3	2,567,044	3,083,307	1,093,306	518,779
1923	83,856	3,053,557	79.4	80.8	2,467,763	3,137,413	1,153,847	600,745
1924	102,429	2,312,745	63.2	66.0	1,527,209	2,415,174	759,471	418,506
1925 [3]	58,381	2,900,581	83.6	78.7	2,283,741	2,958,962	1,318,793	572,901

Division of Crop and Livestock Estimates.

[1] Based on reported percentage of entire crop on farms, proportion merchantable, and per cent shipped out of county where grown.
[2] 1909–10 to 1920–21, quality reported as per cent of a high medium grade; 1921–1925, per cent of merchantable quality.
[3] Preliminary.

TABLE 69.—*Corn: Receipts and shipments, 11 primary markets, 1909-1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning Nov. 1	Chicago		Milwaukee		Minneapolis		Duluth		St. Louis		Toledo	
	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments
1909	88,428	66,011	6,535	5,893	6,564	5,047	883	943	22,913	16,383	4,001	1,840
1910	113,808	92,652	7,895	7,625	8,948	5,370	1,697	1,697	23,766	15,422	6,236	3,290
1911	108,431	73,940	9,410	6,506	5,423	3,264	12	12	25,176	15,492	4,121	2,037
1912	131,792	94,311	11,613	7,887	6,258	4,374	492	492	22,762	12,257	2,996	1,885
1913	84,838	57,528	15,804	10,727	10,710	8,776	878	362	16,961	10,119	4,560	2,314
Av. 1909–1913	105,459	76,888	10,251	7,728	7,581	5,366	792	701	22,316	13,935	4,383	2,273
1914	116,348	80,256	19,609	16,985	14,699	11,997	3,036	3,036	18,626	10,206	4,582	2,594
1915	101,325	62,148	9,887	6,943	5,661	3,927	(1)	(1)	17,974	8,678	4,656	1,422
1916	78,723	40,497	12,755	8,681	9,550	7,779	32	6	21,312	13,191	2,882	1,190
1917	98,786	34,540	12,374	7,006	16,715	9,636	177	170	25,354	16,130	2,609	1,160
1918	61,366	32,019	6,784	3,697	6,621	4,773	6	(1)	19,219	11,956	1,127	549
1919	87,641	37,236	14,652	7,079	9,192	6,384	5	(1)	27,595	15,975	2,122	1,298
1920	167,241	113,374	27,455	21,823	12,066	8,483	4,834	3,777	25,924	17,044	3,194	1,349
Av. 1914–1920	101,633	57,153	14,788	10,316	10,643	7,568	-------	-------	22,286	13,311	3,025	1,366
1921	186,815	115,700	25,630	22,168	15,920	12,048	14,111	14,034	33,809	22,713	3,994	1,795
1922	115,960	65,890	15,280	11,748	7,531	4,828	688	639	29,856	20,243	3,149	1,118
1923	101,108	48,440	17,083	11,697	18,436	13,711	9,570	8,886	39,215	24,016	4,090	1,445
1924	80,696	40,696	7,180	5,077	14,310	12,330	795	1,086	23,116	14,524	2,972	1,660
1924												
November	6,347	2,364	199	206	382	530	7	235	1,411	690	242	93
December	12,023	2,878	439	128	1,340	888	13	6	2,731	1,324	455	239
1925												
January	12,470	3,207	1,260	305	4,022	2,917	6	-------	3,352	1,253	536	194
February	6,484	2,541	1,321	474	3,246	2,787	25	-------	1,521	1,197	313	243
March	8,307	2,621	1,299	511	2,268	2,274	148	-------	2,365	2,171	421	248
April	3,963	4,567	352	1,117	229	542	181	292	1,402	1,282	108	136
May	3,615	2,535	255	633	375	476	40	130	2,009	1,166	159	122
June	6,331	4,673	676	459	629	494	265	176	2,687	1,782	198	74
July	2,917	4,105	247	357	690	675	10	24	1,008	1,011	120	91
August	7,784	3,969	426	179	500	298	10	41	1,894	843	201	77
September	5,887	3,430	489	343	276	228	42	34	1,311	969	122	91
October	4,568	3,806	227	365	353	221	48	148	1,425	836	97	52
November	7,324	2,732	409	117	743	396	27	-------	2,519	725	293	78
December	13,903	3,145	1,163	310	725	459	39	42	3,577	2,462	828	333

TABLE 69.—*Corn: Receipts and shipments, 11 primary markets, 1909–1925*—Con.

Year beginning Nov. 1	Detroit		Kansas City		Peoria		Omaha		Indianapolis		Total	
	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments
1909	2,477	1,412	15,102	12,873	15,387	11,009	(1)	(1)	(1)	(1)	162,290	121,411
1910	3,860	1,930	16,026	13,395	16,477	11,141	(1)	(1)	(1)	(1)	198,713	152,522
1911	2,857	1,888	19,646	14,971	19,041	14,292	20,817	15,404	13,687	1,947	228,621	149,753
1912	2,757	1,615	16,992	10,614	17,923	11,202	22,618	17,732	15,974	3,637	252,177	166,006
1913	2,835	1,636	27,494	19,192	14,723	6,651	37,108	33,040	14,118	5,183	230,029	155,528
Av. 1909–1913	2,957	1,696	19,052	14,209	16,710	10,859					214,366	149,044
1914	4,058	3,021	16,396	11,914	16,736	6,831	24,599	23,117	15,087	6,498	253,776	176,455
1915	4,726	3,139	25,837	22,459	35,948	13,722	21,496	15,948	22,790	11,073	250,300	149,459
1916	3,192	2,425	12,743	8,469	31,533	11,870	29,820	25,179	24,421	14,801	226,963	134,088
1917	4,361	717	31,366	24,481	36,176	17,062	46,159	36,355	20,583	9,206	294,660	156,463
1918	1,633	626	16,146	10,345	18,511	10,530	21,805	21,197	15,905	7,130	169,123	102,822
1919	1,671	481	11,218	5,034	22,449	17,660	23,227	18,604	19,991	7,170	219,763	116,921
1920	1,663	261	14,137	9,742	16,091	9,823	20,012	17,356	17,505	6,353	310,122	209,385
Av. 1914–1920	3,043	1,524	18,263	13,206	25,349	12,500	26,731	22,537	19,469	8,890	246,387	149,370
1921	2,454	903	16,063	10,242	24,116	18,295	29,583	26,047	21,665	7,053	374,160	250,998
1922	1,957	289	15,499	7,239	21,157	16,278	22,730	20,266	18,317	6,161	252,124	154,699
1923	1,683	253	21,136	13,605	17,730	10,573	27,495	27,170	17,536	5,881	275,082	165,677
1924	410	42	21,448	14,575	20,961	11,715	13,138	11,866	17,199	6,396	292,225	119,967
1924												
November	19	5	1,740	411	1,369	678	502	430	1,940	558	14,158	6,200
December	58	3	4,747	533	1,949	1,132	1,459	543	2,178	777	27,392	8,451
1925												
January	57	4	2,845	622	3,106	1,668	3,051	1,182	2,741	967	33,436	12,319
February	38	6	2,585	638	1,716	1,091	1,162	1,625	1,205	501	19,616	11,103
March	43	4	2,421	1,619	2,171	1,227	1,611	1,228	1,543	515	22,597	12,418
April	20	2	725	2,756	948	689	395	1,525	749	368	9,072	13,276
May	13	16	1,070	1,710	1,481	750	969	1,226	1,144	338	11,130	9,102
June	20	2	1,645	2,107	1,589	924	815	1,222	1,374	684	16,229	12,597
July	24		891	1,754	1,347	593	542	628	1,068	539	8,864	9,777
August	42		1,408	871	1,878	1,119	750	704	1,471	543	16,364	8,644
September	38		698	915	1,687	882	865	842	883	283	12,257	8,017
October	38		673	639	1,720	962	1,017	711	944	323	11,110	8,063
November	14		778	366	2,140	1,291	1,438	892	2,342	539	18,027	7,136
December	93		2,512	191	2,806	2,070	2,352	1,374	3,059	833	31,052	11,219

Division of Statistical and Historical Research. Compiled from the Chicago Daily Trade Bulletin and the Chicago Board of Trade Annual Reports.

No report.

TABLE 70.—*Corn: Visible supply in United States, first of month, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning Nov. 1	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1909	2,653	3,289	8,465	9,764	13,480	13,778	10,603	5,940	5,146	3,770	2,750	5,011
1910	3,510	1,545	5,099	9,145	11,794	11,166	7,047	4,685	7,482	7,100	6,724	6,339
1911	1,703	2,054	5,140	6,900	14,257	15,914	7,490	5,699	8,204	2,451	1,823	3,101
1912	2,689	1,525	5,879	9,717	17,918	21,494	7,270	2,549	11,479	6,389	2,612	7,308
1913	6,206	2,026	12,126	16,505	18,374	18,812	9,380	4,409	7,589	3,203	3,923	5,461
Av. 1909–1913	3,352	2,088	7,342	10,406	15,165	16,233	8,358	4,656	7,980	4,583	3,566	5,444
1914	3,114	3,382	19,703	34,156	41,238	32,877	20,203	12,795	5,225	2,306	2,382	3,444
1915	3,288	4,387	8,919	14,773	24,605	27,697	21,004	14,505	6,870	5,167	3,330	5,093
1916	2,361	2,677	5,838	10,671	12,931	11,974	7,173	2,629	3,277	2,841	2,371	1,163
1917	1,277	1,932	3,155	4,623	8,939	19,016	16,111	13,038	11,487	9,466	5,232	5,503
1918	4,733	2,216	2,415	5,549	4,483	2,514	4,245	2,600	4,038	2,461	956	2,163
1919	1,484	1,477	2,921	3,575	4,951	5,669	5,035	2,740	4,364	6,152	2,564	7,587
1920	10,085	4,597	5,409	14,297	22,333	32,896	23,018	15,103	24,304	14,584	11,500	11,765
Av. 1914–1920	3,763	2,953	6,909	12,521	17,069	18,949	13,837	9,059	8,509	6,140	4,048	5,245
1921	18,891	15,518	23,279	30,778	44,792	46,889	35,564	27,046	29,337	19,509	7,314	12,206
1922	8,806	11,072	16,760	21,658	27,529	28,742	22,339	6,734	3,366	2,373	1,587	2,052
1923	809	2,690	8,799	9,379	18,898	26,074	17,978	12,288	8,279	4,887	5,070	7,154
1924	8,097	7,563	18,573	27,571	32,292	32,727	23,379	17,140	13,094	6,093	6,524	5,470
1925	1,790	2,461										

Division of Statistical and Historical Research.

Compiled from the Chicago Daily Trade Bulletin. Reported on Saturday nearest the first of each month.

TABLE 71.—*Corn: Classification of cars graded by licensed inspectors, all inspection points*

Total of all classes and subclasses under each grade, annual inspections, 1917–1924, by cars

Year beginning November	Receipts								Shipments							
	1	2	3	4	5	6	Sample	Total	1	2	3	4	5	6	Sample	Total
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
1917	2,281	18,714	58,562	56,240	45,610	44,621	98,844	324,872	510	11,589	54,975	31,687	13,037	16,141	32,218	160,157
1918	12,661	34,727	40,872	41,491	28,832	16,061	19,638	194,282	2,339	29,308	39,532	15,985	5,670	5,616	7,425	105,935
1919	28,517	47,961	38,774	56,647	27,313	9,188	13,058	221,458	5,966	39,323	30,781	15,381	4,908	2,351	3,419	102,129
1920	68,550	88,875	64,237	63,081	21,176	9,420	8,738	324,077	34,785	141,483	49,905	10,774	1,774	2,449	3,172	244,342
1921	30,970	197,254	115,207	42,880	21,963	15,979	4,951	429,204	9,854	229,539	48,887	7,270	5,321	4,992	1,436	307,299
1922	21,580	141,563	98,932	24,261	4,270	3,526	3,711	297,843	3,338	131,026	38,408	2,767	666	933	639	177,777
1923	3,038	59,578	111,899	69,352	35,901	15,404	10,741	305,913	978	59,649	79,354	15,055	3,138	2,185	2,131	162,490
1924	7,883	80,883	56,542	34,431	31,370	17,252	12,345	240,706	2,568	64,534	43,718	9,065	4,294	3,303	2,952	130,434
	Total inspections by grade and class Nov. 1, 1924, to Oct. 31, 1925															
Class:																
White	2,769	19,881	9,695	5,853	4,112	1,824	1,430	45,564	1,778	20,717	4,745	1,121	211	187	176	28,935
Yellow	3,759	39,383	29,857	22,121	20,651	9,999	6,121	131,891	589	29,187	29,751	5,629	2,524	1,264	747	69,691
Mixed	1,355	21,619	16,990	6,457	6,607	5,429	4,794	63,251	201	14,630	9,222	2,315	1,559	1,852	2,029	31,808

Total of all classes and subclasses under each grade, annual inspections, 1917–1924, by percentage

Year beginning November	Receipts								Shipments							
	1	2	3	4	5	6	Sample	Total	1	2	3	4	5	6	Sample	Total
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1917	0.7	5.8	18.0	17.3	14.1	13.7	30.4	100	0.3	7.2	34.3	19.8	8.2	10.1	20.1	100
1918	6.5	17.9	21.0	21.4	14.8	8.3	10.1	100	2.2	27.7	37.3	15.1	5.4	5.3	7.0	100
1919	12.9	21.7	17.5	25.6	12.3	4.1	5.9	100	5.8	38.5	30.1	15.1	4.8	2.3	3.4	100
1920	21.2	27.4	19.8	19.5	6.5	2.9	2.7	100	14.3	57.9	20.4	4.4	.7	1.0	1.3	100
1921	7.2	46.0	26.8	10.0	5.1	3.7	1.2	100	3.2	74.7	16.0	2.3	1.7	1.6	.5	100
1922	7.2	47.5	33.2	8.2	1.4	1.2	1.3	100	1.9	73.7	21.6	1.5	.4	.5	.4	100
1923	1.0	19.5	36.6	22.7	11.7	5.0	3.5	100	.6	36.7	48.8	9.3	1.9	1.4	1.3	100
1924	3.3	33.6	23.5	14.3	13.0	7.2	5.1	100	2.0	49.5	33.5	6.9	3.3	2.5	2.3	100
	Total inspections by grade and class, Nov. 1, 1924, to Oct. 31, 1925															
Class:																
White	6.1	43.6	21.3	12.9	9.0	4.0	3.1	100	6.1	71.6	16.4	3.9	0.7	0.7	0.6	100
Yellow	2.8	29.9	22.6	16.8	15.7	7.6	4.6	100	.8	41.9	42.7	8.1	3.6	1.8	1.1	100
Mixed	2.1	34.2	26.9	10.2	10.4	8.6	7.6	100	.6	46.0	29.0	7.3	4.9	5.8	6.4	100

Grain Division.

TABLE 72.—*Corn, including meal: International trade, average 1910–1914, annual 1923–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Year ended June 30							
	Average 1910–1914		1923		1924		1925 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	[1] 2	[11]115,749	.....	122,875	.....	128,313	.....	158,626
Bulgaria	[2] 44	[2] 9,234	(3)	[1] 2,215	.....	[1] 4,183	.....	[1] 8,311
China [1]	[4] 38	[4] 148	69	487	17	852	89	545
French Indo-China [5]	.....	.....	.....	.....	.....	1,313	.....	1,578
Hungary	.....	.....	[1] 235	.....	.....	[8] 187	.....	[5] 3,291
Rumania [5]	[3 6] 364	[3 6] 46,998	.....	9,421	.....	38,942	.....	[7] 11,069
Russia	[2] 299	[2] 28,354	[1 5] 3,168	.....	.....	[5] 5,246	.....	.....
Union of South Africa	[1] 143	[1] 3,952	2	7,111	[9] 8	[9] 21,100	23	6,992
United States	[6] 4,441	41,409	138	96,596	228	23,135	4,617	9,791
Yugoslavia [5]	.....	.....	.....	[1] 451	.....	[10] 2,793	.....	37,713
PRINCIPAL IMPORTING COUNTRIES								
Austria	.....	.....	[5] 3,546	[1] 5	2,969	.....	5,500	.....
Austria-Hungary	[3] 15,455	[3] 263	.....	.....	.....	.....	.....	.....
Belgium	25,818	8,238	15,992	406	16,460	503	19,199	537
Canada	10,678	27	10,364	156	9,249	63	7,735	33
Czechoslovakia	.....	.....	[5] 2,417	[5] 21	4,010	.....	11,893	.....
Cuba	2,860	(3)	3,273	.....	.....	.....	.....	.....
Denmark	[3] 11,777	(3)	15,005	.....	12,554	.....	20,740	.....
Egypt	[3] 504	[3] 63	537	47	75	158	109	65
Esthonia	.....	.....	.....	.....	.....	.....	26	.....
Finland	[1 5] 260	.....	136	.....	200	.....	101	.....
France	19,793	88	21,986	161	21,629	79	21,255	99
Germany	32,056	2	26,822	2	5,811	14	22,268	187
Greece	.....	.....	822	.....	650	.....	[5] 911	.....
Irish Free State	.....	.....	.....	.....	.....	.....	15,227	125
Italy	14,829	265	20,584	29	10,334	636	6,446	708
Japan	.....	.....	.....	.....	457	.....	198	.....
Latvia	.....	.....	.....	.....	9	.....	25	.....
Mexico	[3] 1,120	[3 11] 7	3,536	5	118	65	642	28
Netherlands	[3] 30,377	[3] 8,641	30,916	298	29,354	181	33,367	175
Norway	[3 11] 1,292	.....	3,316	.....	3,606	.....	3,235	.....
Poland [1]	.....	.....	680	20	109	1	291	99
Portugal	[3] 1,833	[3] 11	.....	.....	[1] 1,955	.....	[1] 1,942	.....
Spain	2,023	49	16,466	1	11,245	(3)	[5] 8,186	.....
Sweden	[3] 1,656	[3] 26	1,899	.....	3,069	.....	4,040	.....
Switzerland	[3] 3,984	[3] 1	[5] 4,995	[3 5]	4,306	1	6,343	(3)
Tunis	[3] 442	[3] 8	[1] 396	[1] 11	[5] 1	.....	[5] 980	.....
United Kingdom	80,441	[1] 115	72,590	580	63,466	3,107	71,131	3,049
Uruguay [1]	5	201	81	124	.....	232	.....	.....
Total 38 countries	262,534	263,849	259,971	241,022	201,889	231,104	266,519	243,021

Division of Statistical and Historical Research. Official sources except where otherwise noted. Maicena or maizena is included with "Corn and corn meal."

[1] Year ended Dec. 31.
[2] Year ended July 31, from International Institute of Agriculture.
[3] Less than 500 bushels.
[4] Four-year average.
[5] International Institute of Agriculture.
[6] Three-year average.
[7] Six months.
[8] Commercial source.
[9] Ten months.
[10] Eight months.
[11] One year only.

TABLE 73.—*Corn: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Maine	81	88	85	119	228	167	195	128	144	77	100	112	136	112	107
New Hampshire	77	82	76	115	217	150	170	145	136	75	75	111	134	100	99
Vermont	74	81	84	110	213	170	175	126	137	76	91	110	118	100	99
Massachusetts	79	86	80	120	215	170	172	125	138	77	94	115	129	110	105
Rhode Island	92	98	100	138	236	180	186	180	160	110	120	115	140	120	121
Connecticut	78	89	85	120	215	171	180	140	143	90	96	107	120	110	105
New York	73	83	78	110	198	175	166	116	132	67	83	100	117	97	93
New Jersey	69	76	75	100	170	150	153	85	116	53	70	95	116	73	81
Pennsylvania	66	73	70	97	153	155	147	100	114	55	72	91	118	80	83
Ohio	54	61	56	90	136	130	121	68	95	41	66	74	104	57	68
Indiana	49	58	51	84	125	119	125	59	89	37	56	62	94	55	61
Illinois	50	61	54	84	110	120	130	59	88	38	60	65	95	58	63
Michigan	61	67	68	95	182	130	138	82	109	48	67	78	106	75	75
Wisconsin	57	65	68	92	163	130	125	77	103	46	63	80	105	72	73
Minnesota	47	52	62	80	110	111	120	51	84	31	56	61	85	56	58
Iowa	47	55	51	80	108	122	120	47	83	30	56	62	93	56	59
Missouri	57	68	57	90	114	143	138	64	96	40	68	74	96	69	69
North Dakota	54	58	67	84	151	130	140	72	100	34	53	54	76	55	54
South Dakota	47	50	49	77	120	110	119	42	81	26	50	52	80	60	53
Nebraska	49	53	47	78	120	128	122	41	84	27	58	53	91	61	58
Kansas	56	63	51	90	125	149	140	44	95	31	61	64	87	66	62
Delaware	56	62	62	89	140	136	145	75	101	45	70	81	112	65	75
Maryland	61	68	61	89	140	135	140	81	102	49	68	82	111	70	76
Virginia	72	81	71	93	153	160	169	100	118	69	79	94	126	101	94
West Virginia	73	83	74	101	170	180	164	116	127	75	84	99	124	100	96
North Carolina	83	86	77	110	170	177	185	113	131	78	89	102	124	110	101
South Carolina	89	92	87	113	192	195	197	116	142	74	87	105	123	110	100
Georgia	85	85	78	100	160	165	160	105	122	53	86	107	112	100	92
Florida	82	80	73	90	140	138	140	100	109	53	87	100	112	100	90
Kentucky	62	64	56	87	121	146	155	82	102	55	69	85	102	81	78
Tennessee	65	68	58	94	120	145	157	87	104	52	79	94	108	89	84
Alabama	80	80	69	102	125	148	159	98	112	62	90	108	122	100	96
Mississippi	73	73	65	98	138	151	160	102	112	56	85	107	126	94	94
Arkansas	69	80	64	98	140	180	164	97	118	57	85	101	107	97	89
Louisiana	68	75	64	94	146	161	150	85	111	65	83	105	115	94	92
Oklahoma	58	64	46	93	147	164	127	54	99	32	70	87	89	90	74
Texas	73	74	58	104	167	176	118	84	112	54	83	100	110	110	91
Montana	82	76	69	93	175	135	165	80	113	67	53	65	99	95	76
Idaho	74	72	65	100	155	183	165	100	120	50	79	77	113	75	79
Wyoming	73	70	67	90	175	140	165	56	109	50	60	70	94	70	69
Colorado	66	60	55	90	125	135	142	70	97	31	66	65	88	70	64
New Mexico	83	80	73	113	188	180	151	110	128	90	82	95	110	100	95
Arizona	103	120	115	140	190	210	200	170	164	100	115	120	125	130	118
Utah	79	75	80	115	170	181	150	150	132	76	85	95	145	100	100
Nevada	99	110	93	125	150	210	140	160	141	120	105	125	121	120	118
Washington	79	73	77	100	162	170	185	125	127	86	105	95	112	95	99
Oregon	77	82	82	95	150	155	155	130	121	84	91	90	121	107	99
California	87	87	88	124	185	193	179	120	139	77	100	108	138	118	108
United States	57.2	64.4	57.5	88.9	127.9	136.5	134.5	67.0	96.7	42.3	65.8	72.6	98.2	67.4	69.3

Division of Crop and Livestock Estimates.

TABLE 74.—*Corn: Estimated price per bushel, received by producers, United States, 1909–1925*

Year beginning November	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	60.0	60.1	63.8	65.6	65.7	64.5	64.4	65.7	66.7	66.8	63.7	56.8	63.7
1910	50.3	48.1	48.6	49.0	49.3	50.8	53.4	57.6	62.9	65.8	65.8	65.2	53.6
1911	63.2	62.0	63.4	65.6	68.8	75.2	81.0	81.8	80.2	78.4	73.9	64.3	69.6
1912	53.6	48.8	49.8	51.4	53.0	55.2	58.7	61.9	64.3	70.4	75.4	73.0	57.0
1913	69.9	69.4	69.0	68.7	69.9	71.4	73.6	75.2	76.2	79.2	79.8	74.4	71.9
Av. 1909–1913	59.4	57.7	58.9	60.1	61.3	63.4	66.2	68.4	70.0	72.1	71.7	66.7	63.2
1914	67.5	65.3	69.5	74.0	75.1	76.4	77.8	77.8	78.3	78.1	73.9	66.2	72.7
1915	59.7	59.8	64.4	67.4	69.2	71.3	73.2	74.8	77.4	81.5	83.0	83.6	70.1
1916	87.0	89.4	92.9	98.4	107.2	132.0	155.4	162.4	180.6	186.0	175.3	160.6	124.2
1917	137.0	131.4	136.8	146.6	154.0	154.6	154.1	153.1	156.7	162.7	162.6	149.9	147.6
1918	138.4	140.6	141.4	137.6	143.4	156.1	166.9	173.8	183.8	188.3	169.6	143.6	152.1
1919	134.0	137.4	143.6	147.6	153.6	164.1	177.4	185.4	174.6	159.7	138.5	104.3	150.1
1920	77.2	66.8	64.6	63.4	63.8	61.2	61.0	62.4	62.0	59.0	53.6	46.0	62.6
Av. 1914–1920	100.1	98.7	101.9	105.0	109.5	116.5	123.7	127.1	130.5	130.8	122.4	107.7	111.3
1921	41.7	42.8	44.6	50.3	55.8	58.3	60.6	61.9	63.3	63.6	62.2	62.2	53.4
1922	64.3	67.6	70.2	72.5	75.3	79.6	84.0	85.8	87.0	87.0	86.2	84.8	76.6
1923	78.3	72.2	73.6	76.5	77.2	78.2	78.6	80.8	98.3	107.4	109.7	108.9	83.1
1924	99.6	105.6	112.0	114.5	112.1	103.8	107.5	111.0	104.4	106.5	98.8	83.0	106.8
1925	74.6	70.7											

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, November, 1909–December, 1923.

TABLE 75.—*Corn, No. 3, yellow: Weighted average price per bushel of reported cash sales, Chicago, 1909–1925*

Year beginning November	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Weighted av.[1]
1909	$0.59	$0.59	$0.64	$0.63	$0.61	$0.57	$0.60	$0.59	$0.62	$0.64	$0.58	$0.50	$0.59
1910	.49	.45	.45	.45	.45	.50	.54	.55	.63	.65	.67	.73	.53
1911	.68	.61	.62	.64	.68	.78	.79	.75	.68	.79	.74	.65	.71
1912	.52	.46	.46	.48	.49	.55	.57	.60	.62	.74	.75	.70	.53
1913	.72	.66	.62	.62	.64	.67	.70	.72	.71	.82	.79	.73	.70
Av., 1909–1913	.60	.55	.56	.56	.57	.61	.64	.64	.65	.73	.71	.66	.61
1914	.67	.64	.71	.74	.72	.75	.77	.74	.78	.81	.74	.65	.70
1915	.63	.69	.74	.74	.73	.76	.75	.74	.81	.85	.86	.96	.79
1916	.98	.92	.98	1.00	1.09	1.40	1.59	1.70	1.99	2.06	2.10	2.03	1.11
1917	2.21	1.77	1.77	1.81	1.70	1.65	1.60	1.62	1.70	1.72	1.58	1.41	1.63
1918	1.33	1.45	1.43	1.27	1.53	1.62	1.74	1.78	1.92	1.95	1.55	1.41	1.62
1919	1.46	1.47	1.51	1.46	1.58	1.69	2.02	1.89	1.58	1.58	1.31	.91	1.59
1920	.77	.74	.65	.63	.62	.57	.60	.63	.60	.56	.53	.45	.62
Av., 1914–1920	1.15	1.10	1.11	1.09	1.14	1.21	1.30	1.30	1.34	1.36	1.24	1.12	1.15
1921	.47	.47	.48	.55	.57	.58	.62	.61	.64	.62	.64	.69	.55
1922	.71	.73	.70	.72	.73	.79	.82	.84	.88	.88	.89	1.04	.73
1923	.82	.71	.76	.78	.77	.77	.77	.82	1.09	1.17	1.14	1.10	.88
1924	1.11	1.20	1.24	1.22	1.17	1.05	1.15	1.13	1.08	1.02	.91	.82	1.06
1925	.83	.76											

Division of Statistical and Historical Research. Compiled from Chicago Daily Trade Bulletin.

[1] Average of daily prices weighted by car-lot sales.

TABLE 76.—*Corn, No. 3, yellow: Weighted average price per bushel of reported cash sales, Kansas City, 1909–1925*

Year beginning November	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Weighted av.[1]
1909	$0.59	$0.62	$0.65	$0.61	$0.59	$0.55	$0.62	$0.60	$0.62	$0.62	$0.55	$0.49	$0.59
1910	.47	.43	.44	.42	.44	.47	.52	.55	.67	.62	.66	.71	.49
1911	.67	.62	.66	.65	.71	.81	.80	.75	.75	.76	.71	.64	.69
1912	.45	.45	.47	.47	.50	.56	.58	.59	.62	.75	.75	.72	.55
1913	.72	.66	.65	.63	.66	.69	.73	.71	.70	.81	.78	.70	.67
Av. 1909–1913	.58	.56	.57	.56	.58	.62	.65	.64	.67	.71	.69	.65	.60
1914	.64	.65	.73	.73	.71	.75	.75	.74	.76	.76	.70	.59	.72
1915	.62	.67	.70	.71	.68	.72	.72	.72	.78	.82	.84	.91	.69
1916	.95	.89	.95	.99	1.16	1.41	1.58	1.68	2.01	1.78	1.96	1.91	1.06
1917	2.02	1.66	1.65	1.74	1.66	1.59	1.61	1.54	1.63	1.76	1.66	1.45	1.63
1918	1.47	1.52	1.42	1.34	1.48	1.66	1.74	1.79	1.92	1.93	1.64	1.42	1.56
1919	1.51	1.51	1.49	1.45	1.56	1.71	1.91	1.82	1.58	1.57	1.28	.88	1.60
1920	.67	.69	.60	.58	.57	.52	.56	.56	.51	.46	.49	.38	.59
Av. 1914–1920	1.13	1.08	1.08	1.08	1.12	1.19	1.27	1.26	1.31	1.30	1.22	1.08	1.12
1921	.43	.42	.45	.53	.54	.57	.59	.59	.60	.58	.59	.64	.54
1922	.73	.71	.70	.71	.73	.82	.85	.85	.84	.83	.86	.95	.74
1923	.78	.67	.73	.73	.72	.76	.75	.86	1.04	1.09	1.10	1.08	.78
1924	1.07	1.15	1.21	1.15	1.11	1.01	1.10	1.08	1.08	1.02	91	.82	1.12
1925	.75	.74											

Division of Statistical and Historical Research. Compiled from the Kansas City Daily Price Current.

[1] Average of daily prices weighted by car-lot sales.

TABLE 77.—*Corn, No. 3, yellow: Weighted average price per bushel of reported cash sales, St. Louis, 1909–1925*

Year beginning November	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Weighted average[1]
1909	$0.58	$0.61	$0.65	$0.63	$0.60	$0.58	$0.62	$0.59	$0.63	$0.62	$0.55	$0.49	$0.61
1910	.47	.44	.45	.44	.45	.48	.53	.55	.65	.63	.66	.72	.48
1911	.65	.61	.60	.64	.70	.80	.79	.74	.74	.76	.73	.64	.70
1912	.48	.46	.48	.48	.50	.57	.58	.60	.64	.73	.75	.71	.52
1913	.73	.67	.63	.62	.66	.68	.71	.71	.73	.83	.79	72	.68
Av. 1909–1913	.58	.56	.56	.56	.58	.62	.65	.64	.68	.71	.70	.66	.60
1914	.66	.65	.72	.74	.72	.76	.77	.74	.78	.78	.74	.64	.72
1915	.64	.68	.75	.75	.73	.75	.74	.74	.81	.86	.86	.93	.75
1916	.96	.91	.98	.99	1.12	1.45	1.63	1.67	1.94	1.75	2.04	1.91	1.11
1917	2.00	1.75	1.76	1.82	1.68	1.66	1.62	1.60	1.69	1.75	1.63	1.45	1.67
1918	1.40	1.50	1.44	1.33	1.54	1.62	1.74	1.78	1.99	1.93	1.52	1.42	1.59
1919	1.49	1.49	1.51	1.48	1.60	1.73	2.00	1.87	1.62	1.57	1.30	.92	1.64
1920	.79	.74	.64	.63	.62	.57	.62	.61	.59	.54	.52	.46	.60
Av. 1914–1920	1.13	1.10	1.11	1.11	1.14	1.22	1.30	1.29	1.35	1.31	1.23	1.10	1.15
1921	.47	.48	.48	.54	.58	.57	.61	.60	.65	.61	.63	.69	.57
1922	.71	.72	.70	.73	.74	.80	.84	.86	.86	.92	.90	1.00	.75
1923	.82	.71	.77	.78	.78	.79	.78	.86	1.09	1.19	1.15	1.10	.87
1924	1.12	1.20	1.24	1.20	1.13	1.04	1.14	1.12	1.09	1.04	.88	.82	1.13
1925	.79	.75											

Division of Statistical and Historical Research. Compiled from the St. Louis Daily Market Reporter.

[1] Average of daily prices weighted by car-lot sales.

TABLE 78.—*Corn, all classes and grades combined: Weighted average price per bushel of reported cash sales at markets named, 1918–1925*

CHICAGO

Year beginning November	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Weighted average.[3]
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cents.*
1918	118.6	138.6	131.4	122.0	144.2	160.1	174.0	173.7	191.8	193.2	156.6	140.0	150.4
1919	143.8	141.6	144.9	139.5	155.1	159.7	197.4	183.3	155.3	154.9	132.2	95.9	144.1
1920	78.8	72.5	62.1	59.9	60.7	54.5	61.2	59.1	59.4	56.2	53.2	46.2	56.6
1921	46.7	47.1	47.3	54.0	57.1	58.2	61.4	60.0	63.7	62.0	63.0	69.0	56.9
1922	71.1	72.4	70.1	72.5	72.8	79.3	81.8	84.0	87.1	88.2	88.8	102.4	78.1
1923	76.1	69.8	74.4	75.2	74.4	76.4	76.7	82.6	109.1	117.2	114.9	110.0	86.0
1924	109.3	115.3	113.1	110.8	103.8	99.1	113.4	111.6	106.1	101.8	89.4	80.9	105.7
1925	70.3	67.8											

ST. LOUIS

1918	126.5	139.7	134.5	126.1	143.5	160.2	174.8	179.1	193.0	194.8	155.8	141.9	151.5
1919	146.4	144.5	147.4	142.5	155.3	171.8	194.9	186.8	160.6	158.1	129.3	93.5	155.4
1920	82.1	71.9	62.1	61.2	60.7	56.2	59.9	60.5	60.7	54.3	51.6	45.4	57.5
1921	46.0	47.8	47.5	54.7	57.7	57.9	61.3	60.0	64.0	61.4	62.5	69.9	57.6
1922	71.4	72.6	71.0	73.5	74.3	80.1	84.2	86.1	87.4	87.0	89.9	101.5	79.6
1923	76.9	69.4	74.6	75.8	75.5	77.5	77.3	85.7	107.8	113.8	114.4	109.4	86.7
1924	108.6	117.7	119.9	117.0	111.9	103.5	114.1	111.5	108.7	103.9	89.6	81.3	109.5
1925	72.6	70.3											

OMAHA

1918	131.6	142.8	136.0	123.6	142.4	159.3	167.6	170.7	186.1	184.0	152.2	136.1	151.2
1919	139.3	135.6	135.9	131.9	146.3	161.7	181.4	175.5	149.3	150.3	118.2	81.4	147.6
1920	70.7	60.7	54.7	52.2	53.1	47.6	52.6	53.6	50.3	45.3	42.5	36.2	50.0
1921	39.4	39.2	40.8	49.5	51.2	51.9	54.2	54.4	57.1	53.7	55.8	64.0	50.9
1922	68.4	66.8	65.8	67.5	68.9	77.2	80.1	80.5	80.0	79.6	82.8	94.3	73.3
1923	68.8	62.5	68.1	68.3	67.5	69.8	70.5	79.8	101.3	107.0	106.8	102.8	76.0
1924	104.8	114.4	115.9	110.1	106.1	96.6	108.2	106.0	103.7	98.1	88.2	78.9	106.9
1925	71.8	66.7											

KANSAS CITY

1918	139.5	148.8	136.5	127.9	147.9	165.1	172.6	176.7	189.5	189.0	155.2	141.7	152.0
1919	138.3	141.0	142.1	136.5	149.1	166.9	185.1	171.1	149.5	146.2	126.8	86.1	147.5
1920	67.1	63.3	58.5	57.1	56.8	51.1	57.0	55.5	52.4	45.6	45.3	39.0	53.8
1921	41.8	42.1	43.7	52.9	54.0	55.0	57.4	57.0	56.0	55.2	58.9	68.9	53.2
1922	72.5	70.5	69.8	71.4	72.7	81.9	84.0	84.2	83.0	81.5	86.6	95.3	77.7
1923	73.9	65.1	71.4	71.5	70.5	73.8	73.6	84.9	102.3	107.4	108.9	104.8	77.9
1924	105.2	114.2	119.5	114.0	110.3	98.3	108.6	105.2	103.6	99.6	87.4	82.8	109.0
1925	74.5	72.6											

MINNEAPOLIS

1918	130.9	136.6	128.1	115.8	131.2	155.8	162.5	160.0	176.7	184.0	152.6	138.1	140.8
1919	140.6	134.5	135.5	132.3	146.3	161.1	179.4	172.3	143.2	129.0	123.1	89.5	141.2
1920	67.0	60.4	53.6	50.6	52.1	47.4	51.2	51.8	51.3	50.7	47.0	40.3	50.5
1921	41.4	39.9	41.2	50.3	50.5	51.4	54.9	54.5	58.1	56.6	58.2	65.3	50.1
1922	68.9	65.3	63.3	65.8	66.7	72.6	77.9	76.3	79.1	81.9	82.9	90.4	71.7
1923	72.3	64.9	69.9	72.6	71.1	71.7	70.9	79.1	102.7	112.1	111.1	106.4	75.7
1924	104.8	106.4	103.7	98.8	91.3	90.2	105.6	104.9	102.7	99.0	85.7	79.5	99.8
1925	71.4	63.7											

CINCINNATI[1]

1919			147.5	145.9	159.3	173.8	196.0	191.5	164.4	159.0	137.9	102.7	
1920	80.3	69.7	65.7	65.5	63.9	57.8	63.9	63.4	65.3	63.6	55.4	50.8	61.8
1921	49.5	49.2	49.1	55.8	60.8	60.5	64.5	62.2	68.2	65.4	65.6	73.1	59.7
1922	69.9	74.0	73.8	76.3	77.3	85.7	87.0	88.9	92.1	92.5	93.6	99.5	82.7
1923	73.5	67.6	75.7	76.9	74.8	78.9	78.3	84.8	110.6	120.5	120.4	112.0	81.8
1924	107.9	116.1	119.9	120.3	111.8	103.1	116.8	115.8	112.0	107.2	90.6	65.1	112.4
1925	66.9	66.5											

[1] No reports until January, 1920.
[3] Average of daily prices weighted by car lot sales.

TABLE 78.—*Corn, all classes and grades combined: Weighted averaye price per bushel of reported cash sales at markets named, 1918–1925*—Continued

SIX MARKETS COMBINED[2]

Year beginning November	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Weighted average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cants.*
1918	122.5	140.4	133.0	123.0	143.1	160.6	172.2	173.9	189.9	191.5	156.1	139.9	150.3
1919	143.2	140.4	143.2	137.9	153.1	163.8	191.7	181.0	154.8	153.2	130.1	94.3	146.5
1920	76.5	68.6	60.3	58.1	58.8	52.9	58.9	48.3	57.5	54.0	51.9	45.2	55.5
1921	45.6	45.7	46.0	53.3	55.4	56.5	59.6	59.3	62.1	60.1	62.3	69.4	55.7
1922	70.8	71.6	69.2	71.6	72.4	79.0	82.1	83.1	85.6	86.4	88.3	100.3	77.4
1923	74.9	67.5	72.8	73.7	72.7	74.7	75.4	82.7	106.6	114.4	113.7	109.2	83.0
1924	108.3	114.4	112.9	108.6	103.5	99.0	111.9	109.7	105.3	101.3	89.1	80.8	106.0
1925	71.0	68.3											

Division of Statistical and Historical Research. Compiled from Chicago Daily Trade Bulletin, St. Louis Daily Market Reporter, Omaha Daily Price Current, Kansas City Grain Market Review, Minneapolis Daily Market Record, Cincinnati Daily Trade Bulletin. These prices are comparable with farm prices.

[2] From November, 1918, through December, 1919, inclusive, Cincinnati is not included.

TABLE 79.—*Corn, American mixed: Average spot price per bushel of 56 pounds at Liverpool, 1912–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1912	$0.92	$0.95	$0.94	$0.95	$0.95	$0.95	$0.93	$0.99	$0.99	$0.99	$0.91	$0.86
1913	.82	.82	.81	.82	.82	.82	.82	.90	.95	.89	.90	.91
1914	.91	.91	.91	.91	.91	.92	.93	1.13	1.11	1.04	1.00	.98
1915	1.04	1.11	1.10	1.09	1.13	1.08	1.10	1.18	1.16	1.16	(1)	1.23
1916	1.40	1.47	1.43	1.43	1.47	1.28	1.37	1.44	1.41	1.48	1.71	1.83
1917	1.95	2.00	2.05	1.98	2.03	2.05	2.05	2.05	2.05	2.05	2.05	2.05
1918	2.16	2.16	2.16	2.16	2.16	2.16	2.34	2.52	2.52	2.52	2.53	2.53
1919	2.11	2.11	1.65	1.63	1.63	1.61	1.55	(1)	(1)	(1)	(1)	(1)
1920	(1)	1.93	2.14	2.16	2.04	2.06	(1)	(1)	(1)	1.63	1.58	1.38
1921	1.49	1.15	1.13	1.01	.95	.97	.98	.92	.85	.71	.78	.85
1922	.81	.90	.85	.83	.84	.84	.98	.92	.90	1.00	1.00	1.00
1923	.99	1.00	1.00	1.06	1.07	1.09	.95	1.16	1.16	(1)	(1)	(1)
1924	1.06	1.15	1.13	1.06	1.08	1.00	1.12	[2]1.12	(1)	(1)	(1)	(1)
1925	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1.19	1.16	(1)

Division of Statistical and Historical Research. Compiled from Broomhall's Corn Trade News. For rate of exchange used in conversion from shillings see Table 747, p. 1425.

[1] No quotations. [2] Quotation for Aug. 6 only.

TABLE 80.—*Corn: Spot price per bushel of 56 pounds at Buenos Aires, 1912–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1912	(1)	(1)	(1)	$0.58	$0.53	$0.52	$0.51	$0.52	$0.50	$0.51	$0.52	$0.53	$0.52
1913	$0.54	$0.54	$0.54	.56	.55	.55	.55	.55	.62	.59	.58	.58	.56
1914	.55	.56	.56	.54	.59	.55	.57	[2].56	.55	.49	.53	.54	.55
1915	.54	.61	.56	.57	.54	.50	.51	.49	.51	.51	.54	.52	.53
1916	.56	.60	.56	.51	.45	.43	.45	.51	.55	.70	1.03	.93	.61
1917	1.07	1.07	.99	1.03	1.27	1.46	1.43	1.27	.87	.85	.95	.88	1.10
1918	.79	.79	.74	.59	.53	.57	.64	.68	.65	.63	.63	.63	.66
1919	.57	.52	.47	.55	.55	.55	.96	1.07	.91	.79	.74	.71	.70
1920	.70	.71	.83	1.03	1.13	1.10	.96	.90	.92	.83	.77	.82	.89
Av. 1914–1920	.68	.69	.67	.69	.72	.74	.79	.78	.71	.69	.74	.72	.72
1921	.88	.91	.91	.78	.61	.63	.65	.66	.65	.58	.61	.63	.71
1922	.63	.73	.79	.77	.75	.71	.78	.78	.76	.74	.70	.74	.74
1923	.80	.82	.81	.80	.77	.75	.73	.69	.74	.78	.81	.79	.77
1924	.78	.82	.77	.67	.65	.57	.68	.85	.93	1.05	1.06	1.07	.83
1925	1.12	1.08	.96	.91	1.00	.92	.93	.96	.91	.82	.84	.86	.94
Av. 1921–1925	.84	.87	.85	.79	.76	.72	.75	.79	.80	.79	.80	.82	.80

Division of Statistical and Historical Research. Compiled from International Yearbook of Agricultural Statistics 1912–1921. Subsequently Review of the River Plata. Average of weekly quotations. For rate of exchange used in conversion from shillings see Table 747, p. 1424.

[1] No quotations. [2] Interpolation, no quotation.

TABLE 81.—*Corn, yellow, La Plata: Spot price per bushel of 56 pounds at Liverpool, 1912–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1912	[1]	[1]	[1]	[1]	$0.97	$0.87	$0.71	$0.75	$0.78	$0.72	$0.68	$0.67	$0.77
1913	$0.71	$0.75	$0.76	$0.74	.72	.69	.67	.67	.70	.66	.63	.67	.70
1914	.65	.66	.68	.68	.74	.76	.78	.97	.93	.83	.78	.83	.77
1915	.98	1.06	1.02	1.06	1.11	.97	.92	.90	.85	.94	1.06	1.19	1.00
1916	1.40	1.44	1.42	1.43	1.47	1.33	1.45	1.54	1.39	1.48	1.69	1.81	1.49
1917	[2] 1.89	1.92	2.00	2.16	[1]	2.17	2.17	2.17	2.17	2.17	2.17	2.17	2.11
1918	2.23	2.23	2.23	2.23	2.23	2.23	2.42	2.61	2.61	2.61	2.61	2.61	2.40
1919	2.04	2.04	1.75	1.74	1.74	1.72	1.65	1.66	1.69	1.68	1.65	1.52	1.74
1920	[2] 1.49	[4] 1.77.	[4] 1.96	1.97	1.81	1.67	1.53	1.43	1.60	1.49	1.15	1.25	1.59
Av. 1914–1920	1.53	1.59	1.58	1.61	------	1.55	1.56	1.61	1.61	1.60	1.59	1.63	1.59
1921	1.28	1.22	1.30	1.28	1.18	1.09	1.05	.93	.83	.72	.78	.88	1.04
1922	.92	1.08	1.08	1.03	1.06	1.01	1.10	1.10	1.09	1.08	.96	1.00	1.04
1923	.99	1.04	1.05	1.09	1.14	1.10	1.02	.94	.98	.97	.96	1.02	1.02
1924	1.03	1.15	1.11	1.07	1.12	1.00	.94	1.04	1.14	1.24	1.21	1.22	1.11
1925	1.31	1.29	1.14	1.11	1.30	1.28	1.27	1.38	1.20	1.03	1.07	1.10	1.20
Av. 1921–1925	1.11	1.16	1.14	1.12	1.16	1.10	1.08	1.08	1.05	1.01	1.00	1.04	1.08

Division of Statistical and Historical Research. Compiled from International Yearbook of Agricultural Statistics, 1912–1921. Subsequently Broomhall's Corn Trade News.

For rate of exchange used in conversion from shillings, see Table 747, p. 1425.

[1] Not quoted. [2] Trading in maize controlled Jan. 5, 1917. [3] Afloat price. [4] Nominal.

TABLE 82.—*Corn oil: Top price per pound (loose basis) at Chicago, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	4.50	4.75	4.75	4.50	4.38	4.38	4.25	4.25	4.62	5.12	5.75	6.00	4.77
1910	6.05	6.00	5.95	6.40	6.50	6.25	5.70	6.45	6.75	6.60	6.25	6.20	6.26
1911	6.40	6.25	5.95	5.35	5.35	5.25	5.35	5.35	5.85	5.55	5.35	5.20	5.60
1912	5.10	4.80	4.80	5.20	5.50	5.30	5.40	5.35	5.30	5.20	4.90	5.05	5.16
1913	4.80	5.05	4.90	4.85	4.95	5.20	5.75	5.65	5.60	5.75	5.85	6.05	5.37
Av. 1909–1913	5.37	5.37	5.27	5.26	5.34	5.28	5.29	5.41	5.62	5.64	5.62	5.70	5.43
1914	5.90	5.80	5.80	5.80	5.70	5.70	5.70	5.60	5.30	4.80	4.90	4.95	5.50
1915	5.30	5.50	5.55	5.55	5.65	5.65	5.10	5.00	5.20	7.00	7.00	7.10	5.80
1916	8.10	8.50	9.75	9.50	9.50	9.00	7.75	8.00	9.38	11.50	11.50	11.25	9.48
1917	10.75	11.50	12.25	15.00	15.00	14.25	12.75	13.75	15.00	18.00	18.00	18.00	14.52
1918	17.75	17.50	17.25	16.88	15.50	16.00	16.50	16.25	16.25	16.00	16.00	16.25	16.61
1919	16.50	12.50	16.50	18.00	19.50	21.50	23.50	22.00	17.00	17.50	19.00	18.50	18.50
1920	19.00	16.50	16.50	15.75	16.00	16.00	15.25	9.00	10.50	10.50	9.50	7.00	13.46
Av. 1914–1920	11.90	11.11	11.94	12.35	12.41	12.59	12.36	11.37	11.23	12.19	12.27	11.86	11.97
1921	7.00	6.50	6.25	6.00	5.75	5.75	6.50	7.25	8.25	8.25	7.75	7.00	6.85
1922	7.00	9.00	10.25	10.00	10.00	10.00	9.12	8.50	8.25	7.75	8.50	9.50	8.99
1923	10.25	10.25	10.75	10.75	10.25	9.75	8.00	9.00	10.25	9.75	10.25	10.00	9.94
1924	10.12	9.62	9.25	9.12	9.12	9.25	11.50	12.25	11.50	10.12	10.25	10.75	10.24
1925	10.62	10.00	10.75	10.75	10.50	9.75	10.50	11.00	10.25	10.25	9.88	9.62	10.32
Av. 1921–1925	9.00	9.07	9.45	9.32	9.12	8.90	9.12	9.60	9.70	9.22	9.33	9.37	9.27

Division of Statistical and Historical Research. Compiled from annual reports of the Chicago Board of Trade.

TABLE 83.—*Corn futures: Volume of trading in six markets, by calendar years, 1921–1924*

[Thousand bushels—i. e., 000 omitted]

Market	1921		1922		1923		1924	
	Volume	Per cent of total	Volume	Per cent of total	Volume	Per cent of total	Volume	Per cent of total
Chicago Board of Trade	5,830,304	91.78	4,506,683	93.16	4,286,837	92.21	5,759,327	92.66
Chicago Open Board of Trade	212,181	3.34	84,742	1.75	111,838	2.41	152,028	2.44
Minneapolis Chamber of Commerce	(1)	-------	7,941	.17	473	.01	(1)	-------
Kansas City Board of Trade	168,538	2.65	168,447	3.48	176,105	3.79	232,430	3.74
St. Louis Merchants Exchange	122,301	1.93	46,592	.96	54,152	1.16	52,589	.85
Milwaukee Chamber of Commerce	19,060	.30	23,201	.48	19,650	.42	19,326	.31
Total	6,352,384	100.00	4,837,606	100.00	4,649,055	100.00	6,215,700	100.00

Grain Futures Administration.

[1] No trading.

TABLE 84.—*Corn futures: Volume of trading in the principal futures, by months, Chicago Board of Trade, July 1, 1924, to June 30, 1925*

[Thousand bushels—i. e., 000 omitted]

Month	December corn	May corn	July corn	September corn	Other corn futures	All futures
1924						
July	308,874	47,528	24,525	150,199	5	531,131
August	384,354	226,656	2,289	78,558	1,053	692,910
September	353,941	262,159	6,848	24,612	3,269	650,829
October	276,990	327,287	26,425	----------	1,823	632,525
November	125,355	337,030	53,603	----------	15	516,003
December	44,670	494,807	111,229	534	15	651,255
1925						
January	----------	489,344	133,640	37,993	70	661,047
February	5	415,112	146,820	61,780	----------	623,717
March	165	379,878	261,554	113,600	----------	755,197
April	907	152,790	320,674	147,742	----------	622,113
May	34,363	18,560	298,694	124,862	----------	477,479
June	151,466	26	115,075	262,265	110	528,942
Total	1,681,090	3,152,177	1,501,376	1,002,145	6,360	7,343,148

Grain Futures Administration.

OATS

TABLE 85.—*Oats: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage harvested	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Chicago, cash price per bushel, No. 2 white [2]				Domestic exports, including oatmeal, fiscal year beginning July 1	Imports, fiscal year beginning July 1 [3]
							December		Following May			
							Low	High	Low	High		
	1,000 acres	*Bush. of 32 lbs.*	*1,000 bushels*	*Cents*	*1,000 dollars*	*Dollars*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Bushels*	*Bushels*
1909	*35,159*	30.4	1,068,289	40.6	433,869	12.34	40	45	36½	43½	2,548,726	1,034,511
1910	37,548	31.6	1,186,341	34.4	408,388	10.88	31	32⅜	31⅞	36	3,845,850	107,318
1911	37,763	24.4	922,298	45.0	414,663	10.98	46¼	47⅜	50½	58	2,677,749	2,622,357
1912	37,917	37.4	1,418,337	31.9	452,469	11.93	31	31⅜	35⅛	43	36,455,474	723,899
1913	38,399	29.2	1,121,768	39.2	439,596	11.45	37⅛	40⅜	37	42½	2,748,743	22,273,624
Av. 1909–1913	37,357	30.6	1,143,407	37.6	429,797	11.51	37.2	39.4	38.2	44.6	9,655,308	5,352,342
1914	38,442	29.7	1,141,060	43.8	499,431	12.99	46⅛	49⅜	50⅛	56	100,609,272	630,722
1915	40,996	37.8	1,549,030	36.1	559,506	13.65	40⅛	44	39½	49½	98,960,481	665,314
1916	41,527	30.1	1,251,837	52.4	655,928	15.80	46½	54	59½	74	95,105,698	761,644
1917	43,553	36.6	1,592,740	66.6	1,061,474	24.37	70¼	80⅜	72	79½	125,090,611	2,591,077
1918	44,349	34.7	1,538,124	70.9	1,090,322	24.59	68	74½	67⅛	74½	109,004,734	551,355
1919	40,359	29.3	1,184,030	70.4	833,922	20.66	78⅜	89	100½	117½	43,435,994	6,043,834
1920	42,491	35.2	1,496,281	46.0	688,311	16.20	47	52	36½	43½	9,391,096	3,795,638
Av. 1914–1920	41,674	33.4	1,393,300	55.3	769,842	18.47	56.9	63.4	60.9	70.5	83,085,412	2,148,512
1921	45,495	23.7	1,078,341	30.2	325,954	7.16	34½	42¼	37⅛	45	21,236,742	1,733,282
1922	40,790	29.8	1,215,803	39.4	478,948	11.74	43½	50	43	47½	25,413,330	293,208
1923	40,981	31.9	1,305,883	41.4	541,137	13.20	43	49½	47	50½	8,785,771	4,244,047
1924	42,756	35.6	1,522,665	47.8	727,171	17.01	53⅜	69	45½	50½	16,777,107	3,040,882
1925 [4]	45,160	33.3	1,501,909	38.1	571,768	12.66	40¾	45	----	----	----------	----------

Division of Crop and Livestock Estimates. Figures in italics are census returns. Exports and imports from Commerce and Navigation of United States 1909–1918 and the June issue of Monthly Summaries of Foreign Commerce, 1919–1925.

[1] Based on Dec. 1 price.
[2] Chicago Daily Trade Bulletin. Quotations are for contract 1909–1915.
[3] Oatmeal not included in 1909.
[4] Preliminary.

TABLE 86.—*Oats: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze [1]	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	7.9	5.2	0.6	0.8	1.1	0.9	0.8	0.4	17.7	2.4	0.5	0.1	0.4	1.1	22.2
1910	17.0	.8	.2	.7	.4	1.7	.3	.3	21.4	.9	.6	.2	.2	.7	24.0
1911	27.6	1.0	[2]	.5	.3	5.1	.1	.8	35.4	.8	1.5	.1	.2	1.5	39.5
1912	7.2	3.1	.3	.5	1.0	1.1	.5	.4	14.1	1.6	.7	.2	.2	.9	17.7
1913	22.7	.7	.2	.2	.6	1.8	.2	.8	27.2	.5	1.1	.1	.2	1.2	30.3
1914	15.7	2.2	.2	.3	.8	2.6	.4	.5	22.7	2.0	1.6	.1	.1	1.0	27.5
1915	1.4	8.5	.9	.4	1.0	.1	.8	.1	13.2	2.1	.3	.1	.1	.5	16.3
1916	10.1	4.0	.4	.6	.8	2.8	.5	.5	19.7	5.2	1.3	[2]	.2	.8	27.2
1917	11.8	1.2	.2	2.7	.8	1.0	.3	.2	18.2	.8	.4	[2]	[2]	.4	19.8
1918	12.9	.5	.2	1.3	.9	1.8	.3	.2	18.1	1.1	.9	.1	[2]	.5	20.7
1919	11.5	5.7	.4	.4	.7	2.8	.4	.4	22.3	4.8	2.2	[2]	.1	.5	29.9
1920	6.4	2.7	.3	.5	.8	.9	.4	.1	12.1	2.3	1.4	.1	.1	.3	16.3
1921	18.3	2.3	.2	2.7	.8	5.9	.6	.2	31.0	5.2	2.1	------	.1	.5	38.9
1922	14.6	3.8	.3	.5	1.1	1.4	.3	------	22.0	3.2	1.8	.1	.1	.4	27.6
1923	10.1	2.7	.2	1.5	.9	1.5	.5	------	17.4	3.0	1.0	.1	.1	.3	21.9
1924	5.5	3.5	.5	1.2	1.2	.3	.6	.1	12.9	1.4	.6	.1	.1	.2	15.3

Division of Crop and Livestock Estimates.

[1] Includes winter kill of fall-sown oats in Southern States.
[2] Less than 0.05 per cent.

TABLE 87.—*Oats: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
Maine	121	137	4,598	6,165	2,989	3,391
New Hampshire	16	17	624	663	456	424
Vermont	76	81	2,888	3,240	1,993	1,912
Massachusetts	8	8	272	304	190	198
Rhode Island	2	2	60	66	45	43
Connecticut	13	14	377	462	264	282
New York	970	1,050	34,920	37,800	21,650	19,656
New Jersey	59	64	1,770	1,920	1,133	1,037
Pennsylvania	1,076	1,227	38,736	42,945	24,016	21,902
Ohio	1,665	2,081	68,265	86,362	35,498	33,681
Indiana	1,850	2,109	68,450	59,062	32,856	21,849
Illinois	4,374	4,724	170,586	151,168	80,175	52,909
Michigan	1,600	1,664	62,080	53,248	29,798	21,299
Wisconsin	2,590	2,603	103,600	126,246	49,728	47,973
Minnesota	4,629	4,814	199,047	202,188	85,590	62,678
Iowa	5,855	6,089	245,910	246,604	108,200	78,913
Missouri	1,630	1,891	40,750	49,166	20,782	21,633
North Dakota	2,841	2,415	93,753	65,205	33,751	17,605
South Dakota	2,889	2,947	106,893	100,198	42,757	28,055
Nebraska	2,456	2,699	68,768	73,953	29,570	26,623
Kansas	1,369	1,712	34,225	39,376	16,086	17,325
Delaware	4	4	120	100	79	65
Maryland	48	58	1,632	1,856	1,044	984
Virginia	226	271	5,311	5,826	3,824	4,078
West Virginia	165	196	3,960	5,292	2,891	3,281
North Carolina	258	258	4,644	4,902	3,901	3,726
South Carolina	360	378	7,020	7,182	6,809	6,464
Georgia	275	413	4,262	7,021	4,049	6,108
Florida	11	13	148	182	133	164
Kentucky	235	247	5,452	5,187	3,653	3,060
Tennessee	177	221	3,717	4,862	2,565	3,112
Alabama	125	131	1,875	2,227	1,631	1,737
Mississippi	75	85	1,200	1,615	1,020	1,260
Arkansas	275	261	4,950	4,176	3,168	2,422
Louisiana	25	30	500	630	415	504
Oklahoma	1,200	1,140	30,000	26,220	15,900	13,372
Texas	1,455	1,091	49,470	13,419	29,187	8,454
Montana	570	638	16,815	14,355	7,903	7,608
Idaho	155	170	5,580	8,330	3,236	3,582
Wyoming	125	134	3,750	4,690	2,175	2,157
Colorado	232	230	5,800	6,210	3,364	3,105
New Mexico	56	36	1,120	720	672	461
Arizona	10	12	280	360	227	270
Utah	62	68	2,052	3,196	1,436	1,982
Nevada	2	2	68	90	49	58
Washington	175	254	6,738	11,176	3,975	5,812
Oregon	280	320	7,840	10,560	4,782	5,386
California	86	151	1,789	5,194	1,556	3,168
United States	42,756	45,160	1,522,665	1,501,909	727,171	571,768

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 88.—*Oats: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
Me.	37.0	42.4	38.5	34.6	40.0	38.5	41.0	40.0	36.0	29.0	40.0	34.0	41.8	37.4	35.0	38.0	37.0	38.0	45.0	38.6
N. H.	31.5	42.8	33.8	39.0	35.0	36.4	38.0	38.0	37.0	38.0	38.0	33.0	39.0	37.3	35.0	38.0	37.5	39.0	39.0	37.7
Vt.	32.2	41.5	35.0	43.0	39.0	38.1	42.5	43.0	32.0	36.0	41.0	29.5	35.0	37.0	33.0	34.0	35.0	38.0	40.0	36.0
Mass.	31.0	35.5	35.0	34.0	35.0	34.1	37.0	36.0	32.0	37.0	40.0	33.0	34.0	35.6	31.0	34.0	35.0	34.0	38.0	34.4
R. I.	25.0	35.0	29.0	28.6	26.0	28.7	27.5	33.0	27.0	31.0	42.0	30.0	28.0	31.2	28.0	31.0	32.0	30.0	33.0	30.8
Conn.	27.5	36.8	35.1	30.7	28.0	31.6	29.0	32.5	30.0	33.0	38.0	29.5	30.0	31.7	30.0	28.0	29.0	29.0	33.0	29.8
N. Y.	28.2	34.5	29.5	30.8	33.5	31.3	31.5	40.5	26.0	35.0	41.0	25.5	38.5	34.0	24.0	30.0	32.2	36.0	36.0	31.6
N. J.	25.5	37.1	28.5	27.6	29.0	29.5	29.0	32.5	30.0	34.0	40.0	30.0	32.0	32.5	24.0	31.0	24.0	30.0	30.0	27.8
Pa.	26.0	35.2	28.3	33.1	31.0	30.7	30.0	38.0	31.0	35.0	39.0	31.0	39.0	34.7	28.5	34.0	29.0	36.0	35.0	32.5
Ohio	32.5	37.2	32.1	44.0	30.2	35.2	30.5	41.0	28.0	44.0	44.0	33.0	44.2	37.8	23.0	27.0	34.5	41.0	41.5	33.4
Ind.	30.5	35.4	28.7	40.1	21.4	31.2	28.5	40.0	30.0	42.0	42.0	32.0	41.0	36.5	24.0	21.0	28.0	37.0	28.0	27.6
Ill.	36.6	38.0	28.8	43.3	23.8	34.1	29.3	45.0	38.5	52.0	44.0	30.0	39.5	39.8	26.5	28.5	35.0	39.0	32.0	32.2
Mich.	30.5	34.0	28.6	34.9	30.0	31.6	33.5	42.0	30.0	36.0	40.0	25.0	39.6	35.2	18.2	34.0	32.0	38.8	32.0	31.0
Wis.	35.0	29.8	29.8	37.3	36.5	33.7	27.0	46.5	37.0	44.0	46.6	33.4	44.8	39.9	24.3	41.2	36.3	40.0	48.5	38.1
Minn.	33.0	28.7	22.8	41.7	37.8	32.8	28.0	43.0	26.5	37.0	41.0	28.0	37.5	34.4	24.0	35.5	37.0	43.0	42.0	36.3
Iowa.	27.0	37.8	25.5	44.2	34.5	33.8	33.0	40.0	37.0	47.0	42.0	34.6	39.0	38.9	26.0	37.1	36.2	42.0	40.5	36.4
Mo.	27.0	33.6	14.8	33.0	21.2	25.9	21.5	26.0	25.0	40.0	29.0	27.0	30.5	28.4	20.0	16.0	25.0	25.0	26.0	22.4
N. Dak.	32.0	7.0	23.5	41.4	25.7	25.9	28.0	40.0	21.5	15.0	23.5	15.5	24.0	23.9	19.0	33.0	23.0	33.0	27.0	27.0
S. Dak.	30.0	23.0	7.4	33.8	26.5	24.1	27.5	42.0	30.5	34.0	39.0	29.0	34.0	33.7	22.0	31.0	34.0	37.0	34.0	31.6
Nebr.	25.0	28.0	13.9	24.4	26.5	23.6	32.0	32.0	35.5	38.0	22.2	32.8	34.6	32.4	27.1	23.3	33.0	28.0	27.4	27.8
Kans.	28.2	33.3	15.0	32.0	19.5	25.6	33.5	26.5	23.5	31.0	22.0	28.1	30.7	27.9	20.5	18.5	26.1	25.0	23.0	22.6
Del.	25.5	33.8	30.0	30.5	30.5	30.1	27.0	33.5	30.0	32.0	35.0	23.0	33.0	30.5	28.0	23.0	26.0	30.0	25.0	26.4
Md.	25.4	30.0	27.0	30.0	28.0	28.1	27.0	34.0	29.5	31.0	33.0	28.0	32.5	30.7	27.0	30.0	29.8	34.0	32.0	30.6
Va.	19.0	22.0	20.0	22.2	21.5	20.9	15.5	25.0	23.5	24.5	23.0	22.0	21.9	22.2	20.5	20.0	22.0	23.5	21.5	21.5
W. Va.	22.0	25.2	22.0	28.0	24.0	24.2	20.0	29.0	23.0	27.0	27.0	21.0	27.0	24.9	22.0	23.0	24.0	24.0	27.0	24.0
N. C.	16.5	18.2	16.5	18.6	19.5	17.9	17.5	23.0	17.5	16.0	17.0	16.7	22.0	18.5	18.0	21.0	22.0	18.0	19.0	19.6
S. C.	21.0	21.0	20.4	21.5	23.5	21.5	20.0	19.0	18.0	15.0	22.0	23.0	24.0	20.1	24.0	24.0	24.0	19.5	19.0	22.1
Ga.	19.0	18.2	21.5	20.8	22.0	20.3	20.0	19.5	19.5	16.0	20.0	20.0	21.0	19.4	21.0	18.0	18.0	15.5	17.0	17.9
Fla.	17.0	16.2	13.5	17.2	18.0	16.4	18.0	20.0	15.0	14.0	18.0	15.0	17.0	16.7	13.0	13.0	12.0	13.5	14.0	13.1
Ky.	22.3	25.0	18.4	26.9	19.8	22.5	21.0	26.0	21.0	26.0	24.0	22.5	23.5	23.4	19.0	18.3	21.0	23.2	21.0	20.5
Tenn.	20.0	23.0	19.5	21.7	21.0	21.0	23.0	24.5	21.0	25.0	25.0	18.5	19.8	22.4	20.5	18.0	21.0	21.0	22.0	20.5
Ala.	16.5	18.5	19.2	20.0	20.5	18.9	22.0	19.0	17.5	18.0	19.0	18.0	18.0	18.8	22.0	20.0	17.0	15.0	17.0	18.2
Miss.	16.0	19.2	18.4	17.4	20.0	18.2	23.0	21.5	18.0	19.0	20.0	16.0	17.0	19.2	20.0	19.0	19.0	16.0	19.0	18.6
Ark.	22.8	27.5	20.0	19.9	26.5	23.3	24.0	27.0	21.0	28.0	25.5	22.0	25.0	24.6	22.0	25.0	23.0	18.0	16.0	20.8
La.	20.0	21.5	21.0	20.8	22.0	21.1	23.0	25.0	19.0	22.3	25.0	22.0	23.0	22.8	23.0	22.3	22.0	20.0	21.0	21.7
Okla.	29.0	36.5	9.0	25.1	18.0	23.5	27.5	27.0	12.5	23.0	24.0	32.0	33.0	25.6	20.0	20.0	20.0	25.0	23.0	21.6
Tex.	18.7	35.0	25.1	36.0	32.5	29.5	25.0	35.5	28.5	26.0	14.7	42.0	22.0	27.7	18.0	23.0	32.0	34.0	12.3	23.9
Mont.	51.3	38.0	49.8	48.0	43.5	46.1	35.0	52.0	38.0	20.0	30.0	6.0	22.0	29.0	24.0	32.0	33.0	29.5	22.5	28.2
Idaho.	44.5	38.5	44.0	48.9	46.5	44.5	44.0	47.0	43.0	38.0	40.0	30.0	38.0	40.0	43.0	38.0	46.0	36.0	49.0	42.4
Wyo.	35.0	32.0	34.5	41.8	38.0	36.3	35.0	42.0	35.0	36.0	41.0	12.0	38.0	34.1	30.0	31.0	34.0	30.0	35.0	32.0
Colo.	38.0	39.1	35.0	42.8	35.0	38.0	40.0	39.0	33.0	38.0	30.0	26.2	31.5	34.0	31.0	25.0	32.0	25.0	27.0	28.0
N. Mex.	40.0	27.4	38.8	34.7	30.0	34.2	38.0	36.0	29.0	30.0	28.0	27.4	27.4	30.8	27.7	15.6	20.0	20.0	20.0	20.7
Ariz.	37.0	40.1	42.0	44.7	43.0	41.4	42.0	37.0	37.5	40.0	40.0	35.0	27.0	36.9	35.0	31.0	30.0	28.0	30.0	30.8
Utah.	46.1	43.0	44.7	46.4	46.0	45.2	50.0	47.0	43.5	44.0	45.0	27.9	33.8	41.6	36.4	39.0	37.8	33.1	47.0	38.7
Nev.	40.0	44.7	45.0	40.0	43.0	42.5	52.0	45.0	43.0	40.0	38.0	25.3	37.2	40.1	37.7	37.2	35.4	34.0	45.0	37.9
Wash.	49.0	42.8	51.7	48.2	47.5	47.8	47.0	50.0	52.0	38.5	27.0	40.0	46.6	43.0	50.0	39.2	57.0	38.5	44.0	45.7
Oreg.	37.8	34.5	34.7	38.2	42.3	37.5	35.0	44.0	48.0	25.0	25.0	31.3	36.5	35.0	32.0	25.0	39.0	28.0	33.0	31.4
Calif.	31.4	37.0	34.0	39.0	31.6	34.6	35.0	33.0	32.5	35.0	32.0	29.0	30.0	32.4	27.0	35.0	32.5	20.8	34.4	29.9
U. S.	30.4	31.6	24.4	37.4	29.2	30.6	29.7	37.8	30.1	36.6	34.7	29.3	35.2	33.3	23.7	29.8	31.9	35.6	33.3	30.9

Division of Crop and Livestock Estimates.

TABLE 89.—*Oats: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Canada	9,597	14,541	14,388	14,491	14,672	36.6	33.8	39.2	28.0	35.0
United States	37,357	40,790	40,981	42,756	45,160	30.6	29.8	31.9	35.6	33.3
Total North America	46,954	55,331	55,369	57,247	59,832					
EUROPE										
United Kingdom:										
England and Wales	2,039	2,157	1,976	2,037	1,868	47.5	42.0	47.0	50.4	51.8
Scotland	952	988	968	956	926	46.8	47.5	46.5	49.5	50.7
Ireland	1,049	1,214	1,137	1,089		62.1	50.7	47.9	51.2	
Norway	264	301	255	230	241	38.9	44.5	31.4	46.3	48.3
Sweden	1,961	1,798	1,775	1,911	1,804	43.9	42.9	40.8	38.9	46.8
Denmark	1,161	1,118	1,122	1,141	1,098	52.2	52.2	56.2	55.3	61.5
Netherlands	346	394	381	377	365	52.2	45.2	48.9	49.6	56.4
Belgium	668	717	654	654	652	65.8	49.9	72.0	67.6	53.5
Luxemburg	77	71	73	73	73	43.9	21.5	43.5	29.6	42.0
France	10,084	8,491	8,457	8,636	8,652	36.5	33.9	39.8	35.4	38.2
Spain	1,276	1,514	1,595	1,635	1,798	22.8	20.6	25.4	18.5	24.2
Portugal		626	526	564			9.3	15.4	9.7	
Italy	1,276	1,214	1,223	1,106	1,202	29.4	25.1	32.6	30.1	39.5
Switzerland	81	51	51	50	49	59.1	48.4	60.0	53.9	54.9
Germany	9,529	7,912	8,265	8,709	8,531	55.3	35.0	50.9	44.7	45.1
Austria	883	704	802	763	783	32.9	26.0	32.2	29.9	42.7
Czechoslovakia	2,506	2,016	2,081	2,090	2,071	38.4	35.5	44.1	39.7	38.9
Hungary	849	811	809	708	728	33.5	27.8	33.9	22.2	32.3
Yugoslavia	1,358	966	928	871	856	24.7	18.9	23.1	23.9	29.6
Greece	[2] 140		180			[2] 29.1		33.1		
Bulgaria	408	352	370	373	354	21.2	26.0	24.8	19.9	28.9
Rumania	[3] 2,119	3,295	3,324	3,056	2,928	[3] 28.2	27.9	18.9	13.7	18.0
Poland	6,666	5,879	6,215	6,388	6,375	29.4	29.4	39.0	26.0	35.8
Lithuania	961	769	817	803	853	23.8	37.6	27.9	23.1	23.0
Latvia	765	676	764	826	815	25.1	26.9	21.5	22.6	25.7
Esthonia	394	399	378	410	359	24.9	25.2	21.0	23.6	26.4
Finland	999	1,061	1,066	1,049	1,063	20.4	35.0	24.7	32.3	34.0
Russia, European	35,514	15,810	22,285	25,294	24,573	23.0	19.7	20.1	16.7	24.1
Total European countries reporting all years shown:										
Excluding Russia	47,622	43,654	44,349	44,852	44,444	38.9	33.7	39.4	34.9	38.6
Including Russia	83,136	59,464	66,634	70,146	69,017	32.1	29.9	32.9	28.3	33.4
NORTH AFRICA										
Morocco	(25)	28	29	49	56	(20)	6.4	14.3	22.2	28.3
Algeria	449	563	617	622	651	30.0	13.9	32.0	14.7	24.7
Tunis	133	126	123	112	119	27.4	7.7	22.4	14.2	26.3
ASIA										
Cyprus		15	14	17			17.6	24.9	14.7	
Russia	5,742	[4] 2,044	[4] 3,314	3,314	[4] 4,162	18.8	17.7	20.4	26.4	26.3
Japanese Empire:										
Japan	110	277	266	274	265	44.8	33.1	41.2	36.3	40.5
Chosen	[5] 141	272		257		[5] 15.6	18.9		11.3	
Total Northern Hemisphere countries reporting all years shown:										
Excluding Russia	95,293	99,889	100,753	103,156	105,367					
Including Russia	136,549	117,743	126,352	132,089	134,102					

[1] Where changes in boundary have occurred the averages are estimates for territory within present boundaries.
[2] One year only.
[3] Four-year average.
[4] Excludes Turkestan and Transcaucasia.
[5] Three-year average.

TABLE 89.—*Oats: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 Preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
SOUTHERN HEMISPHERE	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Chile	78	81	79	81	92	42.7	34.8	50.1	41.8	58.4
Uruguay	[3] 66	87	120	138	209	[3] 19.5	11.5	18.0	23.0	------
Argentina	2,396	2,618	2,747	2,646	3,194	22.6	21.2	27.8	20.2	26.6
Union of South Africa [6]	[2] 809	697	------	------	------	[2] 11.9	8.2	------	------	------
Australia	745	1,014	1,077	------	------	23.8	18.5	20.1	------	------
New Zealand	366	143	64	147	------	49.1	49.7	38.4	48.5	------
Total Southern Hemisphere countries reporting all years shown	2,540	2,786	2,946	2,865	3,495	------	------	------	------	------
Total Northern and Southern Hemisphere countries reporting all years shown:										
Excluding Russia	97,833	102,675	103,699	106,021	108,862	------	------	------	------	------
Including Russia	139,089	120,529	129,298	134,954	137,597	------	------	------	------	------
Estimated world total: [7]										
Excluding Russia	101,700	106,800	107,700	110,100	112,900	------	------	------	------	------
Including Russia	143,000	124,700	133,300	139,000	141,700	------	------	------	------	------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Estimates given are for crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Where changes in boundary have occurred the averages are estimates for territory within present boundaries.
[2] One year only.
[3] Four-year average.
[6] Excludes native locations.
[7] Excludes a few minor producing countries which do not enter into world trade or for which no estimates are available.

TABLE 90.—*Oats: Production in specified countries, average 1909–1913, annual 1922–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Average, 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE					
NORTH AMERICA					
Canada	351,690	491,239	563,998	405,976	513,384
United States	1,143,407	1,215,803	1,305,883	1,522,665	1,501,909
Total North America	1,495,097	1,707,042	1,869,881	1,928,641	2,015,293
EUROPE					
United Kingdom:					
England and Wales	96,913	90,568	92,956	102,628	96,691
Scotland	44,507	46,917	44,977	47,365	46,917
Ireland	65,169	61,589	54,460	55,720	------
Norway	10,276	13,380	7,999	10,641	11,652
Sweden	86,050	77,154	72,493	74,392	84,396
Denmark	60,557	58,403	63,104	63,104	67,516
Netherlands	18,070	17,817	18,641	18,698	20,599
Belgium	43,964	35,783	47,056	44,206	34,909
Luxemburg	3,382	1,527	3,174	2,162	3,069
France	368,462	288,264	336,944	305,535	330,315
Spain	29,110	31,214	40,434	30,170	43,443
Portugal	------	5,818	8,098	5,460	------
Italy	37,537	30,465	39,827	33,296	47,475
Switzerland	4,784	2,466	3,059	2,694	2,692
Germany	527,178	276,619	420,731	389,525	384,740

[1] Where changes in boundary have occurred averages are estimates for area within present boundaries.

TABLE 90.—*Oats: Production in specified countries, average 1909–1913, annual 1922–1925*—Continued

[Thousand bushels—i. e., 000 omitted]

Country	Average, 1909–1913	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE—Continued					
EUROPE—continued					
Austria	29,030	18,317	25,861	22,843	33,400
Czechoslovakia	96,147	71,552	91,684	82,959	80,549
Hungary	28,464	22,553	27,458	15,713	23,520
Yugoslavia	33,516	18,272	21,476	20,795	25,362
Greece	[2] 4,075	5,500	5,964	4,062	5,500
Bulgaria	8,651	9,144	9,188	7,406	10,228
Rumania	[2] 59,776	92,073	62,665	42,013	52,635
Poland	195,825	172,621	242,671	166,171	228,350
Lithuania	22,910	28,942	22,776	18,584	19,635
Latvia	19,188	18,171	16,412	18,670	20,934
Esthonia	9,795	10,057	7,942	9,677	9,475
Finland	20,391	37,174	26,304	33,912	36,195
Russia, European	817,231	311,073	448,746	421,561	592,293
Total European countries reporting all years shown:					
Excluding Russia	[4] 1,858,558	1,474,953	1,751,796	1,567,325	1,720,197
Including Russia	2,675,789	1,786,026	2,200,542	1,988,886	2,312,490
NORTH AFRICA					
Morocco	(500)	180	415	1,088	1,585
Algeria	13,489	7,799	19,724	9,138	16,111
Tunis	3,642	965	2,756	1,585	3,135
ASIA					
Cyprus	515	264	349	250	296
Russia	107,687	[5] 36,094	[5] 67,571	87,495	[6] 109,438
Japanese Empire:					
Japan	4,928	9,158	10,967	9,933	10,743
Chosen	[7] 2,202	5,136	4,421	2,914	
Total Northern Hemisphere countries reporting all years shown—					
Excluding Russia	3,376,729	3,200,361	3,655,888	3,517,960	3,767,360
Including Russia	4,301,647	3,547,528	4,172,205	4,027,016	4,469,091
SOUTHERN HEMISPHERE					
Chile	3,333	2,822	3,961	3,383	5,374
Uruguay	[2] 1,285	999	2,156	3,168	
Argentina	54,246	55,597	76,338	53,456	84,808
Union of South Africa [8]	[2] 9,661	5,728			
Australia	17,768	18,728	21,629	20,000	
New Zealand	17,978	7,110	2,456	7,125	
Total Southern Hemisphere countries reporting all years shown	57,579	58,419	80,299	56,839	90,182
Total Northern and Southern Hemisphere countries reporting all years shown—					
Excluding Russia	3,434,308	3,258,780	3,736,187	3,574,799	3,857,542
Including Russia	4,359,226	3,605,947	4,252,504	4,083,855	4,559,273
Estimated world total [9]—					
Excluding Russia	[4] 3,555,000	3,364,000	3,835,000	3,675,000	3,959,000
Including Russia	4,480,000	3,711,000	4,352,000	4,184,000	4,661,000

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture, except as otherwise stated. Production as reported is for the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[2] One year only.
[3] Four-year average.
[4] The estimate for the five-year period 1909–1913 given in this table is somewhat larger than the figure obtained by averaging those five years in Table 91. This is because in the detailed table estimates for warring countries are for postwar boundaries, whereas in Table 91 they are for pre-war territory. As a result, in excluding Russia, which lost territory in the war, a smaller area is excluded in the detailed table than in Table 91.
[5] Excluding Turkestan and Transcaucasia.
[6] Excluding Transcaucasia.
[7] Three-year average.
[8] Excluding native locations which produced 299,644 bushels in 1917–18 and 67,270 bushels in 1920–21.
[9] Excludes a few minor producing countries which do not enter into world trade or for which no estimates are available.

TABLE 91.—*Oats: World production, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year	Production in countries reporting all years	Preliminary estimate of world production excluding Russia	Preliminary estimate of European totals excluding Russia	Three selected countries		
				Russia [1]	Germany	France
1909	2,570,179	3,390,000	1,863,000	1,163,076	628,712	383,139
1910	2,520,718	3,198,000	1,660,000	1,064,516	544,287	331,866
1911	2,257,513	3,110,000	1,683,000	876,013	530,764	349,247
1912	2,822,328	3,675,000	1,720,000	1,089,365	586,987	355,089
1913	2,647,659	3,555,000	1,909,000	1,250,590	669,231	357,049
1914	2,492,811	3,238,000	1,681,000	[2] 914,913	622,674	318,333
1915	2,604,450	3,564,000	1,401,000	[2] 1,022,107	412,400	238,551
1916	2,424,824	3,226,000	1,469,000	———	484,007	277,117
1917	2,382,705	3,182,000	1,047,000	———	[2] 249,964	[2] 220,336
1918	2,382,177	3,177,000	1,117,000	———	[2] 301,839	[2] 180,553
1919	2,006,599	3,030,000	1,318,000	———	[3] 309,587	[3] 179,823
1920	2,437,471	3,606,000	1,478,000	[3] 414,230	[3] 332,490	[3] 291,406
1921	2,006,843	3,093,000	1,563,000	[3] 306,691	[3] 344,812	[3] 244,455
1922	2,107,646	3,364,000	1,542,000	[3] 347,167	[3] 276,619	[3] 288,204
1923	2,404,948	3,836,000	1,814,000	516,317	[3] 420,731	[3] 336,944
1924	2,556,871	3,675,000	1,629,000	509,056	[3] 389,525	[3] 305,535
1925 preliminary	2,594,716	3,959,000	1,720,000	701,731	[3] 384,740	[3] 330,315

Division of Statistical and Historical Research. For each year is shown the production during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Includes all Russian territory reporting for the years named.
[2] Excluding Poland.
[3] New boundaries and therefore not comparable with earlier years.

TABLE 92.—*Oats: Farm stocks, supplies and shipments, United States, 1909–1925*

Year beginning August	Old stocks on farms Aug. 1 [1]	Crop.			Total supplies	Stocks on farms Mar. 1 following [1]	Shipped out of county where grown [1]
		Quantity	Weight per bushel [2]	Quality [3]			
	1,000 bush.	*1,000 bush.*	*Pounds*	*Per cent*	*1,000 bush.*	*1,000 bush.*	*1,000 bush.*
1909	27,478	1,068,289	32.7	91.4	1,095,767	385,705	343,968
1910	66,666	1,186,341	32.7	93.8	1,253,007	442,665	363,103
1911	67,801	922,298	31.1	84.6	990,099	289,989	265,944
1912	34,875	1,418,337	33.0	91.0	1,453,212	604,249	438,130
1913	103,916	1,121,768	32.1	89.1	1,225,684	419,481	297,365
1914	62,467	1,141,060	31.5	86.5	1,203,527	379,369	335,539
1915	55,607	1,549,030	33.0	87.5	1,604,637	598,148	465,823
1916	113,728	1,251,837	31.2	88.2	1,365,565	394,211	355,092
1917	47,834	1,592,740	33.4	95.1	1,640,574	599,208	514,117
1918	81,424	1,538,124	33.2	93.6	1,619,548	590,251	421,568
1919	93,045	1,184,030	31.1	84.7	1,277,075	409,730	312,384
1920	54,819	1,496,281	33.1	93.3	1,551,100	683,759	431,687
1921	161,108	1,078,341	28.3	74.7	1,239,449	411,934	258,259
1922	74,513	1,215,803	32.0	87.7	1,290,316	421,118	303,950
1923	70,965	1,305,883	32.1	87.9	1,376,848	447,366	322,971
1924	65,710	1,522,665	33.4	91.4	1,588,375	546,656	426,452
1925 [4]	91,603	1,501,909	32.9	91.7	1,593,512	577,064	369,964

Division of Crop and Livestock Estimates.

[1] Based on percentage of crop as reported by crop reporters.
[2] Average weight per measured bushel as reported by crop reporters.
[3] Per cent of a "high medium grade" as reported by crop reporters.
[4] Preliminary.

TABLE 93.—*Oats: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United Sates, 1917–1924*

Year beginning July	Percentage of year's receipts												
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Season
1917	4.7	16.4	13.5	11.1	7.7	7.8	8.3	8.0	7.1	6.5	4.0	4.9	100.0
1918	8.0	19.6	11.9	9.9	7.2	6.7	6.7	4.5	5.5	6.3	7.0	6.7	100.0
1919	14.4	18.4	10.1	9.2	5.8	3.3	3.2	6.6	4.9	4.3	5.2	4.6	100.0
1920	8.3	18.7	13.8	9.5	5.5	5.8	6.6	6.6	6.0	4.6	6.8	7.8	100.0
1921	15.1	16.5	11.8	7.9	5.3	6.1	7.3	6.9	5.6	4.3	7.2	6.0	100.0
1922	8.9	15.7	11.9	10.1	7.8	8.6	7.4	7.1	6.5	4.7	5.4	5.9	100.0
1923	7.6	17.7	14.1	11.5	6.8	7.6	7.7	7.9	5.2	4.8	4.8	4.9	100.0
1924	14.0	20.7	17.8	11.5	5.6	4.8	4.7	3.5	3.9	3.9	5.0	4.6	100.0

Division of Crop and Livestock Estimates.

TABLE 94.—*Oats: Receipts and shipments, 11 primary markets, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning August	Chicago		Milwaukee		Minneapolis		Duluth		St. Louis		Toledo	
	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments
1909	85,999	72,501	9,496	7,433	15,599	14,531	7,806	7,432	20,048	14,765	3,670	3,162
1910	107,902	89,705	14,844	14,873	18,419	13,845	2,434	2,824	20,517	15,323	3,700	3,435
1911	87,623	70,090	10,863	8,194	10,555	10,043	4,529	4,639	16,879	11,280	2,872	2,611
1912	117,103	116,275	16,252	20,180	19,031	16,397	9,350	8,351	23,785	16,592	3,637	4,365
1913	105,738	98,141	18,434	17,172	22,995	24,272	5,795	6,761	25,967	19,497	3,655	2,819
Av. 1909–1913	100,873	89,342	13,978	13,570	17,320	15,818	5,983	6,001	21,439	15,491	3,507	3,278
1914	143,813	130,935	29,962	31,179	23,042	23,147	9,005	8,325	21,419	16,240	6,066	5,089
1915	151,108	122,280	35,252	34,389	45,778	45,024	4,844	4,528	17,548	11,636	4,707	3,501
1916	145,075	108,152	32,707	28,649	31,322	23,075	3,184	3,493	24,616	18,940	4,926	2,642
1917	134,310	86,725	31,786	20,128	42,017	42,181	766	680	37,431	32,129	5,303	3,194
1918	115,714	83,719	34,727	30,548	37,031	35,019	2,663	2,378	30,812	23,836	9,010	8,820
1919	82,141	60,792	26,572	17,766	17,054	19,033	1,635	1,084	31,391	22,772	3,221	1,601
1920	79,430	54,598	19,065	13,297	26,003	14,600	6,241	455	30,103	21,387	5,848	2,339
Av. 1914–1920	121,664	92,458	30,007	25,137	31,750	28,583	3,963	2,992	27,618	20,991	5,583	3,884
1921	77,828	63,418	23,241	17,869	32,307	28,260	6,065	10,129	25,949	20,160	4,604	2,348
1922	84,451	65,055	21,057	17,162	24,870	38,320	1,372	2,130	32,220	26,664	3,786	2,230
1923	69,516	50,190	19,729	17,859	29,069	27,385	5,068	4,717	35,001	28,722	4,248	1,820
1924	74,690	50,706	20,232	11,691	53,533	40,028	23,165	19,920	34,211	28,331	8,848	5,354
1924												
August	9,981	2,967	1,961	479	3,788	1,197	1,369	347	3,576	2,507	1,193	292
September	16,084	4,512	4,208	2,037	14,062	1,163	9,693	2,949	3,030	2,397	1,529	663
October	11,904	4,952	3,302	1,423	10,385	3,020	3,035	2,751	2,942	2,461	515	337
November	4,714	3,739	1,305	1,071	4,871	4,118	989	1,025	1,944	1,644	952	183
December	6,031	3,011	1,543	687	3,970	4,141	3,057	637	1,828	1,638	386	256
1925												
January	5,737	3,213	1,305	824	3,718	3,315	1,800	18	4,568	3,338	410	117
February	3,680	3,031	1,051	917	2,428	3,192	386		2,254	2,211	547	464
March	2,953	3,437	733	856	2,712	3,523	32	6	3,154	3,025	233	741
April	2,721	5,679	857	657	4,490	5,857	51	1,752	2,878	2,505	532	226
May	2,838	5,482	1,077	726	1,500	4,554	136	4,123	2,784	2,149	1,131	636
June	3,785	4,222	1,721	1,306	2,779	2,871	1,618	3,159	2,591	2,504	716	822
July	4,212	6,521	1,170	708	1,832	3,077	949	2,853	2,662	1,952	704	627
August	14,251	5,685	3,082	1,527	10,595	1,971	3,369	2,485	2,602	2,055	2,223	1,397
September	3,073	4,230	1,360	998	6,400	4,284	8,600	4,623	1,986	1,643	1,163	1,283
October	3,355	2,727	1,168	640	3,162	3,597	2,708	3,240	2,648	1,958	360	481
November	3,285	2,351	1,093	1,468	2,173	2,932	2,025	1,960	1,736	1,502	243	326
December	3,684	2,427	1,130	696	3,415	4,269	2,084	924	2,298	1,935	369	421

TABLE 94.—*Oats: Receipts and shipments, 11 primary markets, 1909–1923*—Con.

[Thousand bushels—i. e., 000 omitted]

Year beginning August	Detroit		Kansas City		Peoria		Omaha		Indianapolis		Total	
	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments	Receipts	Shipments
1909	2,488	383	5,165	4,508	10,875	11,705	(1)	(1)	(1)	(1)	161,146	136,420
1910	3,073	265	6,280	4,066	10,130	10,895	(1)	(1)	(1)	(1)	187,299	155,231
1911	2,752	348	6,018	5,071	6,658	8,737	8,868	9,258	976	394	158,593	130,665
1912	3,535	514	7,704	7,523	11,447	13,188	14,958	14,802	8,136	2,876	234,938	221,063
1913	3,807	649	11,325	11,032	12,152	13,804	15,977	18,575	5,392	1,808	231,237	214,530
Av. 1909–1913	3,131	432	7,298	6,440	10,252	11,666					194,643	171,582
1914	4,028	1,123	7,338	6,107	11,189	11,726	13,648	13,916	5,828	4,349	275,338	252,139
1915	5,173	2,292	4,882	2,582	11,364	11,838	11,421	10,961	13,797	8,677	305,904	257,708
1916	3,911	934	10,059	10,130	13,562	11,049	18,216	17,392	14,895	10,891	302,473	235,347
1917	3,677	607	18,344	12,826	20,170	17,541	23,673	21,945	19,822	13,705	337,279	251,661
1918	8,179	1,756	16,688	11,343	8,535	8,212	20,661	20,559	14,820	4,516	298,840	228,706
1919	2,418	551	7,615	5,180	10,636	13,096	13,018	12,110	13,969	4,023	209,070	158,008
1920	3,345	750	7,137	5,132	9,176	7,906	10,223	8,423	16,509	6,099	213,080	134,986
Av. 1914–1920	4,390	1,145	10,295	7,614	12,090	11,624	15,837	15,044	14,234	7,466	277,426	216,936
1921	2,285	330	7,262	5,043	14,210	12,254	10,665	9,768	13,052	6,247	217,468	175,826
1922	3,444	326	10,568	6,147	15,555	15,147	14,772	16,174	10,585	3,471	222,680	192,826
1923	3,083	351	11,701	7,283	13,419	12,292	18,144	22,058	11,653	2,262	220,631	174,939
1924	1,942	276	8,198	5,294	11,131	8,942	15,918	16,795	10,632	3,007	262,501	190,404
1924												
August	229	2	823	111	958	475	1,604	808	2,318	260	27,800	9,445
September	576	32	1,058	335	1,430	691	2,360	1,267	1,628	740	55,658	16,786
October	168	26	939	322	1,231	958	1,786	2,126	820	407	37,077	18,783
November	126	46	569	341	872	717	982	1,020	602	403	17,926	14,307
December	110	30	474	263	914	671	1,008	978	516	231	19,887	12,543
1925												
January	145	40	683	399	1,262	1,213	1,668	1,794	904	231	22,198	14,502
February	142	18	673	432	772	780	990	1,672	608	169	13,531	12,886
March	91	36	354	964	933	1,199	900	2,006	584	242	12,679	15,989
April	106	26	596	808	639	703	908	1,372	553	64	11,311	13,649
May	86	8	403	540	522	418	932	1,328	712	66	12,121	20,020
June	79	12	737	306	690	646	1,208	1,270	634	108	16,558	17,526
July	84		859	473	908	471	1,572	1,160	773	116	15,755	17,958
August	169		4,694	671	1,765	956	3,814	1,540	2,058	306	48,622	18,593
September	161		1,794	575	636	545	1,856	1,450	816	72	27,845	19,658
October	99		1,344	470	922	823	1,462	1,164	748	118	17,976	15,218
November	57		616	480	695	634	778	880	428	130	13,739	12,963
December	73	6	700	577	734	678	876	985	510	182	15,673	13,100

Division of Statistical and Historical Research. Compiled from the Chicago Daily Trade Bulletin and the annual reports of the Chicago Board of Trade.

[1] No report.

TABLE 95.—*Oats: Visible supply in United States, 1st of month, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1909	3,800	5,183	12,799	13,264	13,586	11,180	8,759	8,639	9,916	9,223	6,905	4,245
1910	2,761	12,551	18,802	17,022	15,505	16,129	15,997	15,769	13,129	10,559	8,125	9,570
1911	11,203	20,742	21,044	22,600	20,315	18,754	15,431	14,366	13,429	11,991	8,052	3,690
1912	1,031	4,160	9,260	10,552	10,774	8,457	9,646	12,343	13,115	8,704	8,105	14,736
1913	17,131	24,662	30,718	31,684	29,664	26,909	24,450	21,489	19,755	13,262	8,144	7,210
Av. 1909–1913	7,185	13,460	18,525	19,024	17,969	16,286	14,857	14,521	13,869	10,748	7,866	7,894
1914	6,482	20,124	27,285	31,866	32,471	32,956	33,173	33,258	27,284	23,022	12,623	4,345
1915	1,309	2,924	14,381	15,730	20,928	21,081	20,175	20,265	17,892	12,096	16,192	12,452
1916	8,537	27,691	38,866	45,580	47,467	48,823	42,675	36,740	34,191	28,933	17,454	9,744
1917	6,679	7,277	14,165	17,453	18,595	17,657	13,879	13,947	18,098	21,911	20,822	13,227
1918	7,876	19,309	24,689	22,050	29,143	34,828	30,505	27,666	22,882	21,507	15,827	18,094
1919	20,481	19,411	19,552	19,196	16,922	13,080	11,550	10,401	9,576	6,813	8,642	3,623
1920	3,786	8,149	27,602	34,414	33,961	32,194	33,632	34,142	33,903	30,740	28,426	34,401
Av. 1914–1920	7,879	14,984	23,791	26,613	28,498	28,660	26,513	25,203	23,404	20,717	17,141	13,098
1921	37,562	60,455	65,843	69,998	69,198	67,728	68,010	68,529	64,644	55,837	47,950	42,743
1922	36,667	38,355	35,968	34,077	32,940	32,391	30,861	27,683	24,044	21,932	13,514	8,523
1923	5,477	10,111	16,514	20,488	18,686	19,940	17,539	17,741	16,715	10,656	6,720	5,264
1924	3,086	11,403	52,715	66,564	67,265	72,128	73,570	72,386	61,104	48,082	35,331	33,263
1925	26,298	50,706	65,818	64,926	64,251							

Division of Statistical and Historical Research. Compiled from the Chicago Daily Trade Bulletin. Reported on the Saturday nearest the first of each month.

TABLE 96.—*Oats: Classification of cars graded by licensed inspectors, all inspection points, 1919–1924*

Year beginning August	Total of all classes and subclasses under each grade, annual inspections, by cars, 1919–1924											
	Receipts						Shipments					
	1	2	3	4	Sample	Total	1	2	3	4	Sample	Total
	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars
1919	5,662	52,094	96,039	15,887	3,589	173,271	3,167	41,094	62,764	4,100	692	111,817
1920	8,803	60,169	73,072	14,766	6,831	163,641	3,600	45,099	31,811	2,821	2,220	85,551
1921	2,519	31,643	105,103	31,774	6,664	177,703	2,384	49,117	72,955	4,305	1,675	130,436
1922	2,548	47,347	95,984	17,094	4,640	167,523	1,738	45,563	62,601	6,112	1,235	117,249
1923	2,724	41,530	90,759	22,643	11,307	168,963	1,263	34,056	49,152	6,659	2,620	93,750
1924	1,489	33,631	110,377	24,580	14,853	184,930	601	31,348	70,439	8,874	5,978	117,240
	Total inspections by grade and class, Aug. 1, 1924, to July 31, 1925											
Class:												
White	814	29,260	108,500	23,585	13,537	175,696	421	29,689	69,971	8,747	5,739	114,567
Red	411	3,460	1,513	792	379	6,555	145	1,503	439	112	5	2,204
Gray	79	92	51	30	30	282	1	2	3	2	-------	8
Black	2	7	1	-------	-------	10	-------	9	1	1	-------	11
Mixed	183	812	312	173	907	2,387	34	145	25	12	234	450

Year beginning August	Total of all classes and subclasses under each grade, annual inspections, by percentage, 1919–1923											
	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.	Pr. ct.
1919	3.3	30.0	55.4	9.2	2.1	100	2.8	36.8	56.1	3.7	0.6	100
1920	5.4	36.8	44.6	9.0	4.2	100	4.2	52.7	37.2	3.3	2.6	100
1921	1.4	17.8	59.1	17.9	3.8	100	1.8	37.7	55.9	3.3	1.3	100
1922	1.5	28.3	57.3	10.1	2.8	100	1.5	38.9	53.4	5.2	1.0	100
1923	1.6	24.6	53.7	13.4	6.7	100	1.4	36.3	52.4	7.1	2.8	100
1924	0.8	18.2	59.7	13.3	8.0	100	.5	26.7	60.1	7.6	5.1	100
	Total inspections by grade and class, Aug. 1, 1924, to July 31, 1925											
Class:												
White	0.5	16.6	61.8	13.4	7.7	100	0.4	25.9	61.1	7.6	5.0	100
Red	6.3	52.8	23.0	12.1	5.8	100	6.6	68.2	19.9	5.1	.2	100
Gray	28.0	32.7	18.1	10.6	10.6	100	12.5	25.0	37.5	25.0	-------	100
Black	20.0	70.0	10.0	-------	-------	100	-------	81.8	9.1	9.1	-------	100
Mixed	7.7	34.0	13.1	7.2	38.0	100	7.5	32.2	5.6	2.7	52.0	100

Grain Division.

TABLE 97.—*Oats: Estimated price per bushel, received by producers, United States, 1909–1925*

Year beginning August	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Weighted av.
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
1909	46.2	41.6	41.0	40.6	41.5	43.9	45.5	45.8	44.4	43.2	42.6	41.9	43.0
1910	40.0	37.3	35.6	34.6	33.8	33.2	33.0	32.6	32.8	34.0	36.1	38.8	35.5
1911	40.3	41.4	43.2	44.4	45.0	46.3	48.6	50.9	54.0	55.6	53.9	48.4	46.2
1912	39.5	34.3	33.6	32.8	32.0	32.3	32.8	33.1	33.6	35.1	36.8	37.6	34.5
1913	38.4	39.4	38.8	38.6	39.2	39.2	39.1	39.2	39.5	39.8	39.4	37.8	39.0
Av. 1909–1913	40.9	38.8	38.4	38.2	38.3	39.0	39.8	40.3	40.9	41.5	41.8	40.9	39.6
1914	39.5	42.8	43.1	43.4	44.4	47.6	51.1	52.8	53.4	52.4	49.0	46.0	45.9
1915	42.0	36.5	34.7	35.5	37.6	41.8	43.6	42.4	42.3	42.4	41.2	40.2	39.4
1916	41.6	43.8	46.8	50.7	51.9	53.3	56.0	59.2	66.2	70.4	69.4	71.3	53.8
1917	67.7	62.0	62.0	64.2	70.2	76.3	82.4	87.6	87.4	82.0	77.2	74.6	72.1
1918	71.6	70.6	69.6	69.6	70.8	67.6	63.4	64.2	68.4	71.0	71.0	73.1	69.4
1919	73.5	70.0	68.6	69.6	74.3	80.4	83.6	87.6	94.5	100.6	103.7	93.2	79.9
1920	76.0	65.4	57.6	50.2	45.8	43.7	41.8	40.6	38.0	37.4	36.8	34.7	51.0
Av. 1914–1920	58.8	55.9	54.6	54.8	56.4	58.7	60.3	62.1	64.3	65.2	64.0	61.9	61.6
1921	32.0	30.6	30.1	29.7	30.6	31.9	34.7	36.6	37.2	38.2	37.8	36.2	33.0
1922	33.6	33.4	36.4	38.8	40.3	41.5	42.4	43.5	44.8	45.3	43.7	40.2	39.1
1923	37.6	38.0	39.4	40.8	42.6	43.4	45.4	46.2	46.5	46.3	46.8	49.4	42.4
1924	49.1	47.1	48.9	47.4	50.6	54.0	53.4	49.7	44.7	45.4	48.3	45.3	48.7
1925	40.7	38.1	37.2	37.6	39.1	-------	-------	-------	-------	-------	-------	-------	-------

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, August, 1909–December, 1923.

TABLE 98.—*Oats, including oatmeal: International trade, average 1910–1914, annual 1923–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Year ended June 30—							
	Average 1910–1914		1923		1924		1925 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria	[1] 79	[1] 4,102	560	561	277	7,163	795	642
Argentina	[2] 55	[2] 42,569	------	25,290	------	36,317	------	48,533
Australia	[2] 898	[2] 270	699	70	139	288	------	[3] 274
British India	[1] [4] 87	[1] [4] 43	------	67	------	62	------	50
Bulgaria [1]	------	178	([5])	487	------	4	------	[6] 10
Canada	84	15,245	964	26,115	186	35,914	1,069	42,339
Chile	[2] 2	[2] 2,469	------	721	------	1,914	------	3,810
Hungary	[1] 1,420	[1] 12,416	[1] 12	[1] 1,567	[1] 2	[3] 3,571	[7] 274	[3] 519
Rumania	[1] [4] 72	[1] [4] 10,493	([1] [5])	[3] 21,075	2	4,464	6	5,433
Russia [1]	1,206	70,466	------	------	------	------	------	------
Tunis	[1] 2	[1] 2,875	[1] 47	[3] 456	([1] [5])	[3] 2,606	[7] 116	[3] 742
United States	5,352	9,655	293	25,413	4,244	8,796	3,041	16,777
Yugoslavia	------	------	------	[1] 15	------	[1] 190	------	[3] 470
PRINCIPAL IMPORTING COUNTRIES								
Austria	[1] 2,295	[1] 114	[1] 4,476	[1] 211	6,048	------	6,683	------
Belgium	8,420	62	8,950	238	6,218	327	8,285	113
Ceylon	[2] [3] 90	------	------	------	[8] 52	------	[3] 52	------
Cuba	1,291	------	1,484	------	1,699	------	[9] 883	------
Czechoslovakia	------	------	815	70	2,692	3,286	2,747	1,432
Denmark	[1] 4,687	[1] 152	969	326	2,848	558	2,621	488
Egypt	------	------	([5])	([5])	1	------	2	------
Esthonia	------	------	------	------	[9] 1,769	------	242	------
Finland	[2] [3] 1,150	[2] [3] 356	590	421	5,095	1	1,297	15
France	29,846	122	17,541	1,031	5,341	3,584	4,068	960
Germany	37,202	33,575	7,126	117	1,356	5,733	20,076	7,223
Greece	------	------	[1] 847	------	[1] 212	------	[3] 621	------
Irish Free State	------	------	------	------	------	------	3,351	[10] 2,344
Italy	8,158	65	12,243	6	6,240	22	8,731	128
Japan	[1] 5	[1] 42	[1] 64	------	[1] [11] 1,172	------	[3] 258	------
Latvia	------	------	[1] 189	[1] 1,500	[1] 1,493	[1] 98	[3] 504	[7] 402
Netherlands	[1] 38,862	[1] 30,771	5,191	683	5,971	604	5,569	502
Norway	[1] [11] 497	[1] [11] 27	588	20	2,677	4	1,494	6
Poland [1]	------	------	44	8	11	413	[7] 3,592	[7] 9
Sweden	[1] 6,468	[1] 1,899	1,437	1,766	6,878	521	3,229	715
Switzerland	[1] 12,464	[1] 13	10,440	6	10,036	7	9,099	4
Union of South Africa	[2] 366	[2] 434	194	188	[12] 324	[10] 169	[12] 252	[10] 515
United Kingdom	68,371	[2] 1,591	36,137	624	43,137	1,883	33,760	[10] 1,104
Total 36 countries	229,429	240,004	111,870	109,052	116,120	118,449	122,717	135,559

Division of Statistical and Historical Research. Official sources except as otherwise noted.

[1] Year ended July 1 as compiled by the International Institute of Agriculture.
[2] Average of calendar years 1909–1913.
[3] International Institute of Agriculture.
[4] Average for the seasons 1911–12 to 1913–14.
[5] Less than 500 bushels.
[6] Eight months.
[7] Ten months ended May 31, International Institute of Agriculture.
[8] Eleven months, International Institute of Agriculture.
[9] Six months.
[10] Does not include oatmeal.
[11] Season 1913–14.
[12] Does not include oats.

TABLE 99.—*Oats: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Maine	53	57	45	67	85	90	92	85	74	55	47	56	65	55	56
New Hampshire	56	58	54	69	84	87	85	75	73	60	60	64	73	64	64
Vermont	52	55	53	65	85	90	90	75	73	59	56	63	69	59	61
Massachusetts	53	56	51	66	81	91	90	80	74	59	63	63	70	65	64
Rhode Island	51	58	50	68	75	90	95	80	74	60	60	60	75	65	64
Connecticut	51	55	55	69	79	90	88	75	73	60	65	62	70	61	64
New York	46	51	45	62	75	84	83	67	67	47	51	55	62	52	53
New Jersey	47	52	48	61	70	79	80	75	67	45	55	55	64	54	55
Pennsylvania	46	51	44	57	73	80	80	66	64	45	48	52	62	51	52
Ohio	39	45	36	53	64	70	72	50	56	33	45	45	52	39	43
Indiana	36	43	34	51	63	67	69	46	53	29	40	39	48	37	39
Illinois	36	44	35	51	65	67	70	43	54	29	39	39	47	35	38
Michigan	39	45	35	53	64	69	71	48	55	36	41	43	48	40	42
Wisconsin	37	43	36	51	66	67	70	49	55	33	39	43	48	38	40
Minnesota	33	40	32	47	63	63	64	36	49	23	32	34	43	31	33
Iowa	33	41	32	48	63	64	64	36	50	23	35	37	44	32	34
Missouri	40	44	38	53	61	70	71	49	55	30	44	45	51	44	43
North Dakota	33	37	27	44	62	61	67	35	48	21	26	28	36	27	28
South Dakota	33	38	28	46	61	59	63	33	47	20	32	31	40	28	30
Nebraska	35	40	31	47	61	65	65	37	49	21	34	34	43	36	34
Kansas	40	42	37	55	64	73	73	39	55	27	41	43	47	44	40
Delaware	47	50	51	62	78	87	90	70	70	46	57	60	66	65	59
Maryland	47	52	49	61	75	86	82	70	68	45	51	54	64	53	53
Virginia	52	58	55	63	84	100	100	81	77	56	59	63	72	70	64
West Virginia	52	55	51	64	79	91	91	79	73	52	58	63	73	62	62
North Carolina	62	65	62	74	93	108	106	96	86	70	67	74	84	76	74
South Carolina	69	71	67	80	100	118	110	103	93	73	76	82	97	90	84
Georgia	68	70	66	79	117	119	115	108	96	64	75	85	95	87	81
Florida	71	70	70	71	98	115	120	60	86	65	77	80	90	90	80
Kentucky	48	53	48	60	76	90	91	73	70	48	56	56	67	59	57
Tennessee	50	53	50	62	83	93	93	78	73	48	53	60	69	64	59
Alabama	65	69	63	75	102	107	105	88	87	65	75	80	87	78	77
Mississippi	62	65	60	74	94	107	105	87	85	64	66	76	85	78	74
Arkansas	52	53	52	58	75	88	88	78	72	45	57	62	64	58	57
Louisiana	57	63	55	68	94	99	100	82	80	70	69	68	83	80	74
Oklahoma	42	41	35	57	75	84	70	44	58	27	45	52	53	51	46
Texas	51	48	42	61	82	92	64	66	65	39	55	57	59	63	55
Montana	39	39	32	47	81	80	91	51	60	34	37	38	47	53	42
Idaho	40	38	34	54	77	94	98	68	66	32	46	44	58	43	45
Wyoming	45	48	43	60	80	80	112	62	69	38	40	47	58	46	46
Colorado	46	45	41	60	76	80	90	60	65	33	45	46	58	50	46
New Mexico	58	45	50	67	84	89	95	80	73	48	58	70	60	64	60
Arizona	70	70	64	80	96	120	100	96	89	65	68	80	81	75	74
Utah	47	43	45	61	85	97	98	80	73	37	47	58	70	62	55
Nevada	60	55	55	75	96	118	100	120	88	75	75	81	72	65	74
Washington	44	42	37	51	81	98	93	72	68	42	58	50	59	52	52
Oregon	44	45	37	49	75	96	92	65	66	38	57	45	61	51	50
California	58	53	50	72	85	94	96	80	76	51	64	60	87	61	65
United States	38.2	43.8	36.1	52.4	66.6	70.9	70.4	46.0	55.2	30.2	39.4	41.5	47.8	38.1	39.4

Division of Crop and Livestock Estimates.

TABLE 100.—*Oats, No. 3 white: Weighted average price per bushel of reported cash sales, 1909–1925*

CHICAGO [1]

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Weighted average [2]
1909	$0.38	$0.39	$0.40	$0.40	$0.44	$0.48	$0.47	$0.44	$0.42	$0.40	$0.38	$0.41	$0.42
1910	.35	.34	.32	.32	.32	.33	.31	.31	.32	.34	.39	.44	.33
1911	.41	.45	.47	.48	.47	.50	.52	.53	.57	.55	.53	.49	.50
1912	.33	.33	.33	.32	.33	.33	.33	.32	.35	.38	.40	.40	.35
1913	.42	.43	.40	.40	.40	.39	.39	.39	.39	.40	.40	.37	.40
Av. 1909–1913	.38	.39	.38	.38	.39	.41	.40	.40	.41	.41	.42	.42	.40
1914	.42	.48	.46	.48	.49	.53	.58	.57	.57	.54	.49	.53	.50
1915	.41	.34	.36	.36	.42	.48	.45	.42	.44	.43	.39	.41	.41
1916	.44	.46	.49	.55	.53	.57	.56	.61	.69	.70	.67	.78	.54
1917	.61	.60	.60	.65	.77	.82	.89	.93	.89	.77	.77	.77	.71
1918	.70	.72	.69	.72	.72	.65	.58	.63	.70	.69	.70	.78	.70
1919	.73	.68	.70	.73	.82	.86	.86	.93	1.01	1.09	1.13	.91	.80
1920	.70	.62	.54	.51	.48	.44	.42	.42	.36	.39	.37	.34	.51
Av. 1914–1920	.57	.56	.55	.57	.60	.62	.62	.64	.67	.66	.65	.65	.60
1921	.32	.35	.31	.33	.34	.34	.36	.36	.38	.38	.37	.36	.35
1922	.32	.38	.42	.43	.44	.43	.44	.45	.46	.45	.43	.40	.41
1923	.38	.40	.43	.43	.44	.46	.48	.47	.48	.48	.51	.54	.45
1924	.50	.48	.50	.50	.58	.58	.53	.48	.42	.45	.49	.44	.50
1925	.41	.39	.39	.40	.42								

KANSAS CITY [3]

1909	$0.41	$0.41	$0.40	$0.39	$0.44	$0.48	$0.46	$0.45	$0.42	$0.40	$0.35	$0.40	$0.42
1910	.34	.33	.32	.32	.32	.32	.31	.30	.32	.32	.39	.43	.34
1911	.41	.46	.49	.48	.48	.50	.53	.53	.57	.54	.52	.44	.50
1912	.34	.33	.32	.34	.33	.38	.39	.36	.48	.40	.40	.38	.37
1913	.40	.47	.45	.47	.47	.34	.33	.33	.35	.36	.39	.37	.40
Av. 1909–1913	.38	.40	.40	.40	.41	.40	.40	.39	.43	.40	.41	.40	.41
1914	.47	.47	.45	.47	.48	.53	.56	.57	.55	.54	.46	.51	.54
1915	.38	.35	.36	.39	.42	.44	.47	.43	.44	.43	.39	.45	.40
1916	.45	.46	.48	.55	.54	.56	.58	.63	.71	.71	.67	.75	.58
1917	.59	.60	.60	.67	.76	.83	.90	.91	.91	.77	.72	.74	.72
1918	.74	.72	.70	.69	.72	.67	.61	.66	.71	.71	.70	.69	.66
1919	.73	.66	.69	.74	.81	.87	.89	.92	1.06	1.12	1.11	.91	.83
1920	.72	.63	.55	.51	.49	.46	.43	.43	.37	.40	.37	.35	.50
Av. 1914–1920	.58	.56	.55	.57	.60	.62	.63	.65	.68	.67	.63	.63	.60
1921	.32	.35	.32	.32	.33	.36	.37	.37	.37	.39	.37	.36	.34
1922	.33	.38	.42	.44	.45	.44	.44	.46	.47	.45	.43	.40	.43
1923	.40	.40	.43	.42	.44	.47	.49	.48	.49	.49	.49	.56	.44
1924	.50	.48	.51	.50	.59	.59	.53	.49	.45	.47	.51	.46	.51
1925	.41	.41	.40	.40	.42								

Division of Statistical and Historical Research.

[1] Compiled from the Chicago Daily Trade Bulletin.
[2] Average of daily prices weighted by carlot sales.
[3] Compiled from Kansas City Daily Price Current.

TABLE 101.—*Oats, No. 3 white: Weighted average price per bushel of reported cash sales, Minneapolis, 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Weighted average[1]
1909	$0.36	$0.37	$0.36	$0.38	$0.41	$0.46	$0.45	$0.43	$0.40	$0.39	$0.36	$0.42	$0.39
1910	.35	.36	.30	.31	.30	.31	.29	.29	.32	.33	.37	.42	.33
1911	.41	.44	.46	.46	.46	.48	.50	.52	.54	.54	.50	.47	.47
1912	.34	.31	.31	.29	.30	.31	.31	.30	.32	.35	.38	.38	.33
1913	.40	.40	.37	.37	.37	.36	.36	.37	.36	.38	.38	.35	.38
Av. 1909–1913	.37	.38	.36	.36	.37	.38	.38	.38	.39	.40	.40	.41	.38
1914	.42	.46	.44	.46	.46	.52	.56	.56	.55	.52	.46	.50	.48
1915	.37	.33	.34	.35	.40	.46	.45	.41	.42	.42	.38	.38	.38
1916	.44	.44	.47	.53	.49	.55	.56	.60	.67	.69	.66	.75	.52
1917	.55	.58	.58	.62	.76	.81	.88	.92	.88	.74	.75	.74	.71
1918	.68	.69	.65	.69	.69	.64	.56	.60	.68	.66	.66	.74	.66
1919	.70	.65	.67	.69	.80	.83	.82	.89	1.08	1.05	1.15	.94	.80
1920	.66	.58	.51	.47	.44	.41	.39	.39	.33	.36	.34	.34	.48
Av. 1914–1920	.55	.53	.52	.54	.58	.60	.60	.62	.66	.63	.63	.63	.58
1921	.31	.33	.28	.29	.30	.32	.35	.34	.35	.36	.33	.32	.32
1922	.29	.33	.38	.39	.41	.40	.40	.41	.42	.41	.39	.36	.36
1923	.35	.37	.40	.39	.40	.43	.45	.44	.45	.45	.47	.51	.40
1924	.48	.45	.47	.46	.54	.55	.50	.44	.39	.42	.46	.41	.47
1925	.38	.36	.35	.36	.38								

Division of Statistical and Historical Research. Compiled from Minneapolis Daily Market Record.

[1] Average of daily prices weighted by car-lot sales.

TABLE 102.—*Oats, No. 3 white: Price per pound expressed as percentage of price per pound for No. 3 yellow corn, Chicago, 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	95	99	119	119	130	131	131	126	129	117	113	116	119
1910	96	103	112	114	124	128	121	121	112	110	124	122	116
1911	110	118	113	124	135	141	142	136	128	122	124	126	127
1912	73	78	89	108	126	126	120	114	111	117	117	113	108
1913	99	100	100	97	106	110	110	107	102	100	97	91	102
Av. 1909–1913	95	100	107	112	124	127	125	121	116	113	115	114	114
1914	90	106	110	125	134	131	137	138	133	123	116	119	122
1915	89	80	97	100	106	114	106	101	101	100	92	89	98
1916	91	94	89	98	101	102	98	98	86	77	69	69	89
1917	52	50	52	51	76	81	86	96	94	84	83	79	74
1918	71	80	86	95	87	86	80	72	76	69	69	71	78
1919	66	77	87	87	98	100	103	103	105	94	105	101	94
1920	78	83	104	116	114	118	117	119	111	114	103	99	106
Av. 1914–1920	77	81	89	96	102	104	104	104	101	94	91	90	94
1921	100	116	121	123	127	124	115	111	115	107	106	98	114
1922	90	104	106	106	105	108	107	108	102	96	90	80	100
1923	76	79	72	92	108	106	108	107	109	109	109	87	97
1924	75	74	80	79	85	82	76	72	70	68	76	71	76
1925	70	75	83	84	97								

Division of Statistical and Historical Research. Compiled from the Chicago Daily Trade Bulletin.

TABLE 103.—*Oats futures: Volume of trading, six markets, by calendar years, 1921 to 1924*

[Thousand bushels—i. e., 000 omitted]

Market	1921		1922		1923		1924	
	Volume	Per cent of total	Volume	Per cent of total	Volume	Per cent of total	Volume	Per cent of total
Chicago Board of Trade	2,653,688	89.29	1,559,923	88.10	788,303	87.82	1,766,940	91.16
Chicago Open Board of Trade	55,997	1.88	12,659	.72	4,744	.53	14,077	.73
Minneapolis Chamber of Commerce	237,679	8.00	173,962	9.83	92,289	10.28	143,670	7.41
Kansas City Board of Trade	7,382	.25	8,586	.48	2,375	.27	1,727	.09
St. Louis Merchants Exchange	1,710	.06	3,080	.17	625	.07	(1)	-------
Milwaukee Chamber of Commerce	15,353	.52	12,339	.70	9,270	1.03	11,907	.61
Total	2,971,809	100.00	1,770,549	100.00	897,606	100.00	1,938,321	100.00

Grain Futures Administration.

[1] No trading.

TABLE 104.—*Oats futures: Volume of trading in principal futures, by months, Chicago Board of Trade, July 1, 1924, to June 30, 1925*

[Thousand bushels—i. e., 000 omitted]

Month	July oats	September oats	December oats	May oats	Other oats futures	All futures
1924						
July	7,687	89,946	50,120	8,364	----------	156,117
August	----------	76,924	139,548	33,827	----------	249,299
September	----------	12,235	90,873	68,789	----------	171,897
October	3,104	----------	106,521	188,406	130	298,161
November	5,423	----------	41,648	128,275	----------	175,346
December	18,226	5	11,898	342,260	15	372,404
1925						
January	38,201	24,357	----------	263,591	20	326,169
February	59,208	33,721	----------	217,515	----------	310,444
March	74,130	41,544	----------	189,374	45	305,093
April	86,307	28,972	----------	104,052	340	219,671
May	68,946	41,030	2,342	26,010	5	138,333
June	52,391	150,206	59,025	----------	35	261,657
Total	413,623	492,940	501,975	1,575,463	590	2,984,591

Grain Futures Administration.

BARLEY

TABLE 105.—*Barley: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage harvested	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Chicago, cash price per bushel, low malting to fancy [2]				Domestic exports, fiscal year beginning July 1 [3]
							December		Following May		
							Low	High	Low	High	
	1,000 acres	*Bushels of 48 lbs.*	*1,000 bushels*	*Cents*	*1,000 dollars*	*Dollars*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Bushels*
1909	7,699	24.4	187,973	54.8	102,947	13.37	55	72	59	68	4,311,566
1910	7,743	22.5	173,832	57.8	100,426	12.97	72	90	75	115	9,399,346
1911	7,627	21.0	160,240	86.9	139,182	18.25	102	130	68	132	1,585,242
1912	7,330	29.7	223,824	50.5	112,957	15.09	43	77	45	68	17,536,703
1913	7,499	23.8	178,189	53.7	95,731	12.77	50	79	51	66	6,644,747
Av. 1909–1913	7,620	24.3	184,812	59.7	110,249	14.47	64.4	89.6	57.8	89.8	7,895,521
1914	7,565	25.8	194,953	54.3	105,903	14.00	60	75	74½	82	26,754,522
1915	7,118	32.0	228,851	51.6	118,172	16.53	62	77	70	83	27,473,160
1916	7,757	23.5	182,309	88.1	160,646	20.71	95	125	128	165	16,381,077
1917	8,933	23.7	211,759	113.7	240,758	26.95	125	163	105	176	26,285,378
1918	9,740	26.3	256,225	91.7	234,942	24.12	88	105	110	130	23,367,001
1919	6,720	22.0	147,608	120.6	178,080	26.50	125	168	140	190	26,741,704
1920	7,600	24.9	189,332	71.3	135,083	17.77	50	98	56	75	20,457,248
Av. 1914–1920	7,923	25.4	201,577	83.2	167,655	21.16	86.4	115.9	97.6	128.7	23,922,870
1921	7,414	20.9	154,946	41.9	64,934	8.76	48	64	62	75	22,400,393
1922	7,317	24.9	182,068	52.5	95,560	13.06	66	75	63	72	18,192,809
1923	7,835	25.2	197,691	54.1	107,038	13.66	80	100	69	90	11,208,733
1924	6,858	26.0	178,322	73.9	131,704	19.20	54	81	80	95	23,653,118
1925 [4]	8,243	26.4	218,002	58.6	127,653	15.49	58	80	------	------	------

Division of Crop and Livestock Estimates.

[1] Based on farm price Dec. 1.
[2] Chicago Daily Trade Bulletin.
[3] From reports of Bureau of Foreign and Domestic Commerce, 1909–1918 and June issues of Monthly Summaries of Foreign Commerce of the United States 1919–1925. Barley included. Barley flour since 1918.
[4] Preliminary.

TABLE 106.—*Barley: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	8.9	3.6	0.3	1.0	2.1	2.3	0.8	------	19.0	1.4	0.4	0.5	0.2	1.3	22.8
1910	34.0	.2	.1	.9	.9	4.3	.1	0.2	40.7	.4	.8	.6	.1	.5	43.1
1911	29.6	1.2	------	.8	.4	5.7	.1	.3	38.1	.9	.9	.3	.2	.9	41.3
1912	8.4	1.8	.1	.9	1.9	1.7	.5	.6	15.9	.9	.5	.5	.4	1.4	19.6
1913	24.9	.7	.1	.4	1.0	3.2	.3	.5	31.1	.2	1.2	.2	.2	1.4	34.3
1914	8.2	2.6	.2	.6	1.5	4.6	.4	.3	18.4	2.3	.6	.2	.1	1.1	22.7
1915	1.3	3.2	.3	.7	1.7	.3	.5	------	8.0	.9	.2	.2	.1	.6	10.0
1916	8.0	3.4	.3	.7	1.5	5.0	.5	.8	20.2	8.5	.7	.1	.1	1.0	30.6
1917	26.6	.8	(1)	1.0	1.1	2.3	.2	.1	32.1	.5	.4	.2	.1	.3	33.6
1918	20.7	.4	.1	.7	1.1	2.3	.3	.3	25.9	.6	1.6	.2	(1)	.5	28.8
1919	18.0	3.4	.5	.2	1.8	3.8	.3	.2	28.2	5.3	4.3	.1	.2	.4	38.5
1920	10.4	2.2	.2	.5	1.1	2.0	.2	.2	16.8	3.0	1.3	.1	.1	.4	21.7
1921	20.2	1.4	.1	1.3	1.2	6.6	.5	.1	31.4	2.9	1.3	.1	------	.3	36.0
1922	13.5	1.3	.1	.5	1.6	1.6	.2	.2	19.0	1.3	1.4	.1	.1	.3	22.2
1923	10.7	1.2	.1	.7	1.5	2.1	.3	------	16.6	2.8	.9	.1	.1	.3	20.8
1924	14.2	1.3	.2	.8	1.7	.6	.5	.1	19.4	.9	.9	.1	.1	.2	21.6

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 107.—*Barley: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
Maine	4	5	104	175	112	140
New Hampshire	1	1	26	28	27	24
Vermont	9	10	279	320	287	266
New York	140	163	4,284	4,727	3,898	3,640
New Jersey	1	1	29	27	27	24
Pennsylvania	14	19	371	484	334	416
Ohio	55	110	1,540	3,410	1,309	2,387
Indiana	19	25	456	575	351	408
Illinois	225	270	7,200	8,910	5,400	5,613
Michigan	115	126	3,370	3,087	2,696	2,223
Wisconsin	391	461	12,512	16,965	9,759	11,197
Minnesota	924	1,121	29,568	33,630	20,402	17,488
Iowa	136	184	4,216	5,704	2,951	3,251
Missouri	4	5	100	155	82	147
North Dakota	1,446	1,908	36,150	42,930	22,413	18,460
South Dakota	790	908	21,330	23,608	13,651	11,096
Nebraska	251	233	6,275	5,662	3,953	3,057
Kansas	447	380	7,376	4,294	4,794	2,491
Maryland	11	15	363	495	338	431
Virginia	15	16	405	416	425	404
North Carolina	7	10	161	230	177	276
Kentucky	5	6	120	156	121	148
Tennessee	20	22	400	506	440	557
Oklahoma	209	126	4,807	1,764	3,365	1,323
Texas	166	116	4,150	835	3,154	752
Montana	104	156	2,600	3,276	1,794	2,359
Idaho	118	124	3,658	5,456	3,000	3,055
Wyoming	25	34	725	1,122	522	684
Colorado	327	410	6,540	8,610	4,709	4,994
New Mexico	6	5	90	85	54	72
Arizona	20	20	600	700	528	700
Utah	14	18	399	774	347	658
Nevada	6	8	239	384	263	315
Washington	70	91	1,582	3,094	1,345	2,104
Oregon	65	96	1,430	3,168	1,430	2,313
California	698	1,040	14,867	32,240	17,246	24,180
United States	6,858	8,243	178,322	218,002	131,704	127,653

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 108.—*Barley: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
Me	28.5	31.0	28.0	26.2	28.0	28.3	30.0	26.5	26.0	21.0	25.0	28.0	26.0	26.1	26.0	28.0	30.0	26.0	35.0	29.0
N. H	25.0	26.0	24.0	28.0	28.0	26.2	32.0	30.0	28.0	25.0	32.0	24.8	26.0	28.3	23.0	28.0	26.5	26.0	28.0	26.3
Vt	30.0	31.0	30.5	35.0	32.0	31.7	34.5	35.0	27.5	29.0	31.0	25.0	28.0	30.0	25.0	29.0	29.0	31.0	32.0	29.2
N. Y	24.8	28.3	25.0	26.0	26.7	26.2	28.0	32.0	23.3	28.0	31.5	22.0	29.0	27.7	21.0	26.0	26.8	30.6	29.0	26.7
Pa	21.8	26.5	25.0	27.5	26.0	25.4	28.0	29.5	25.0	28.0	28.0	24.5	24.0	26.7	21.5	25.5	22.4	26.5	25.5	24.3
Ohio	25.9	28.5	27.2	31.0	24.0	27.3	25.0	31.0	27.8	33.0	31.5	23.0	27.7	28.4	26.0	19.5	27.0	28.0	31.0	26.3
Ind	23.5	27.0	26.5	29.5	25.0	26.3	25.0	28.0	27.0	30.5	37.0	25.0	27.0	28.5	19.0	17.0	23.0	24.0	23.0	21.2
Ill	28.0	30.2	28.0	31.5	26.0	28.7	29.5	34.0	32.0	37.5	36.0	27.0	30.4	32.3	26.3	29.5	29.0	32.0	33.0	30.0
Mich	24.7	26.0	24.0	26.0	24.8	25.1	26.0	29.5	24.5	24.4	30.0	17.0	26.0	25.3	17.5	25.7	24.0	29.3	24.5	24.2
Wis	28.0	25.9	25.5	29.4	25.0	26.8	27.3	35.5	30.0	32.0	35.7	26.5	31.7	31.2	22.5	32.1	28.5	32.0	36.8	30.4
Minn	23.6	21.0	19.0	28.2	24.0	23.2	23.0	30.5	19.0	27.0	31.0	20.0	25.0	25.1	20.0	26.5	25.0	32.0	30.0	26.7
Iowa	22.0	29.5	21.9	31.0	25.0	25.9	26.0	31.0	29.5	35.0	31.5	25.5	27.5	29.4	23.5	28.6	28.5	31.0	31.0	28.5
Mo	25.0	27.0	20.0	24.8	22.0	23.8	24.0	25.0	20.0	25.0	25.0	30.0	28.0	25.3	22.0	23.0	27.0	25.0	31.0	25.6
N. Dak	21.0	5.5	19.5	29.9	20.0	19.2	19.5	32.0	15.5	12.5	21.5	11.5	18.0	18.6	15.5	25.5	17.5	25.0	22.5	21.2
S. Dak	19.5	18.2	5.4	26.0	17.5	17.3	23.0	32.0	22.7	27.0	29.5	22.0	25.0	25.9	17.0	23.0	22.5	27.0	26.0	23.1
Nebr	22.0	18.5	11.0	22.0	16.0	17.9	23.5	31.0	28.0	26.5	16.5	25.7	29.0	25.7	24.7	18.0	28.0	25.0	24.3	24.0
Kans	18.0	18.0	6.5	23.5	8.1	14.8	24.5	31.0	16.0	8.0	10.0	27.0	25.4	20.3	20.0	17.3	22.2	16.5	11.3	17.5
Md	32.0	31.0	23.0	27.0	29.0	28.4	33.0	34.0	32.0	25.0	31.0	33.0	27.5	30.8	30.0	32.0	33.0	33.0	33.0	32.2
Va	28.5	29.3	23.0	25.0	28.0	26.4	28.0	24.0	27.5	30.0	27.0	25.0	27.0	27.4	23.0	27.5	27.0	27.0	26.0	26.1
Ky	24.0	24.0	28.7	26.0	26.6	25.9	28.5	30.0	26.0	23.0	28.0	25.0	28.0	27.6	24.0	28.0	27.0	24.0	26.0	25.8
Tenn	24.0	23.0	28.0	26.0	25.2	25.2	27.0	24.6	23.7	15.0	23.0	20.0	23.0	22.2	21.0	22.5	23.0	20.0	23.0	21.9
Okla	23.0	30.0	10.0	26.0	9.0	18.4	25.0	26.5	12.5	18.0	17.0	30.0	24.0	21.9	22.0	17.0	22.0	23.0	14.0	19.6
Tex	19.4	30.0	18.0	29.3	24.0	24.1	25.0	28.0	17.0	20.0	17.0	35.0	23.0	23.6	24.0	19.0	24.0	25.0	7.2	19.8
Mont	38.0	28.5	34.5	36.5	31.0	33.6	30.5	34.0	28.0	15.0	22.0	5.6	18.0	21.9	20.5	25.0	25.5	25.0	21.0	23.4
Idaho	40.0	33.0	42.0	43.5	42.0	40.1	38.0	40.5	39.0	29.0	28.0	26.0	35.0	33.6	32.0	34.0	43.0	31.0	44.0	36.8
Wyo	31.0	30.0	34.0	34.0	30.5	31.9	33.0	36.0	33.0	36.0	37.0	15.0	36.0	32.3	29.0	28.0	30.0	29.0	33.0	29.8
Colo	36.0	32.0	29.0	39.0	32.5	33.7	38.5	36.0	32.0	33.0	18.0	19.0	24.5	28.7	22.0	19.0	29.0	20.0	21.0	22.2
N. Mex	40.0	25.0	33.0	37.0	24.0	31.4	34.0	33.0	28.0	28.0	28.0	23.8	23.6	28.3	24.0	15.0	19.0	15.0	17.0	18.0
Ariz	40.0	36.0	36.5	40.0	39.0	38.3	36.0	37.0	35.0	35.0	34.0	35.0	34.0	35.1	32.0	33.0	35.0	30.0	35.0	33.0
Utah	40.0	36.0	43.0	45.0	38.5	40.5	45.0	42.5	36.0	37.0	35.0	22.9	31.2	35.7	32.0	35.0	40.6	28.5	43.0	35.8
Nev	38.6	40.0	40.0	41.0	41.0	40.0	47.0	48.0	41.0	35.0	34.0	26.5	30.0	37.4	31.1	29.4	25.4	39.8	48.0	34.7
Wash	39.5	29.0	37.0	43.0	40.5	37.8	39.0	41.5	41.3	29.0	15.2	30.0	35.3	33.0	36.8	24.0	45.7	22.6	34.0	32.6
Oreg	31.5	31.5	34.0	36.0	35.0	33.6	30.0	36.0	38.5	29.0	25.0	23.1	32.2	30.5	32.0	27.0	35.0	22.0	33.0	29.8
Calif	26.5	31.0	28.0	30.0	26.0	28.3	30.0	29.0	28.0	29.0	26.0	27.0	23.0	27.4	25.0	30.5	30.2	21.3	31.0	27.6
U. S	24.4	22.5	21.0	29.7	23.8	24.3	25.8	32.0	23.5	23.7	26.3	22.0	24.9	25.5	20.9	24.9	25.2	26.0	26.4	24.7

Division of Crop and Livestock Estimates.

TABLE 109.—*Barley: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1917–1924*

Year beginning July	Percentage of year's receipts												
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Season
1917	2.2	15.0	23.4	16.5	8.5	8.6	6.5	7.5	6.1	2.9	1.8	1.0	100.0
1918	2.4	9.7	8.4	4.4	7.8	3.3	1.3	.7	2.9	27.5	30.7	.9	100.0
1919	18.5	19.2	14.3	9.9	6.4	7.5	5.4	3.1	3.7	3.4	3.0	5.6	100.0
1920	7.0	16.5	15.0	9.9	9.9	7.2	6.7	5.5	6.5	4.2	5.7	5.9	100.0
1921	35.0	14.0	10.5	7.8	4.4	4.2	3.9	4.3	4.2	3.0	4.4	4.3	100.0
1922	17.4	22.9	14.6	10.8	5.2	6.0	4.8	3.2	3.5	1.9	2.7	7.0	100.0
1923	10.3	23.7	15.1	9.9	7.8	6.5	4.1	3.5	3.1	2.6	2.3	11.1	100.0
1924	10.0	25.7	20.3	14.0	6.2	4.7	4.3	5.2	2.6	2.5	1.6	2.9	100.0

Division of Crop and Livestock Estimates.

TABLE 110.—*Barley: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Canada	1,574	2,669	2,785	3,407	4,076	28.8	27.7	27.6	26.1	27.6
United States	7,620	7,317	7,835	6,858	8,243	24.3	24.9	25.2	26.9	26.4
Mexico	[2] 1,436	697	697	711	779	4.9	5.6	5.6	5.6	5.3
Total North America	10,630	10,614	11,317	10,976	13,098					
EUROPE										
United Kingdom:										
England and Wales	1,488	1,364	1,327	1,314	1,317	34.0	31.0	31.4	33.6	35.2
Scotland	191	157	159	152	153	37.6	39.1	36.5	37.4	39.8
Ireland	166	170	154	166		45.2	42.2	36.7	37.1	
Norway	89	132	124	136	136	32.2	34.0	26.7	34.5	37.4
Sweden	448	427	382	428	411	33.6	31.6	29.9	31.1	35.6
Denmark	639	667	690	745	742	42.0	45.6	47.0	45.9	47.0
Netherlands	68	61	59	63	72	48.1	51.5	50.0	55.3	43.0
Belgium	88	80	85	78	98	50.5	43.0	49.2	47.9	46.3
Luxemburg	3	9	9	9	9	27.3	19.7	22.3	19.3	23.2
France	1,987	1,712	1,684	1,765	1,772	26.6	23.9	26.7	27.2	27.6
Spain	3,510	4,082	4,559	4,344	4,414	21.3	19.0	24.6	19.3	22.4
Portugal		188	170	156			9.7	14.4	10.7	
Italy	647	576	569	572	576	16.4	14.3	18.5	15.2	22.3
Switzerland	13	16	16	16	15	33.9	30.7	35.6	32.4	35.5
Germany	3,464	2,846	3,216	3,573	3,545	38.6	25.9	33.7	30.8	33.7
Austria	421	313	334	341	349	23.9	17.9	23.5	21.1	36.1
Czechoslovakia	2,275	1,667	1,687	1,676	1,718	31.3	27.8	32.4	26.6	30.2
Hungary	1,322	1,145	1,137	1,008	1,033	24.5	19.4	24.0	14.6	21.9
Yugoslavia	1,058	927	891	899	883	19.1	11.9	15.8	15.0	20.8
Greece	[3] 369		400			[3] 18.8		17.6		
Bulgaria	516	534	544	525	544	20.1	22.4	20.3	15.1	26.9
Rumania	[4] 3,378	4,269	4,642	4,573	4,211	[4] 18.3	22.0	13.1	6.7	11.3
Poland	3,048	2,825	2,964	3,011	3,029	22.7	21.1	25.7	18.4	25.5
Lithuania	536	417	432	484	507	16.5	25.7	18.4	19.3	23.2
Latvia	463	387	441	443	436	17.1	17.5	13.7	16.8	18.7
Estonia	329	331	312	307	290	18.8	20.2	13.1	18.0	18.0
Finland	278	277	273	272	272	17.8	23.3	14.3	21.9	20.9
Russia, European	23,281	7,452	14,818	14,970	12,589	16.4	14.9	13.8	9.9	19.3
Total European countries reporting all years shown:										
Excluding Russia	26,259	25,221	26,526	26,734	26,532	26.1	23.2	24.6	21.1	25.2
Including Russia	49,540	32,673	41,344	41,704	39,121	21.5	21.3	20.7	17.0	23.3
NORTH AFRICA										
Morocco	(3,000)	2,547	2,803	3,120	3,361	12.7	10.7	12.6	17.1	11.7
Algeria	3,395	2,913	2,876	3,158	3,317	13.5	7.2	15.5	5.9	14.5
Tunis	1,228	734	1,212	692	1,248	6.4	2.5	9.5	3.7	5.6
Egypt	398	375	400	372	366	29.8	30.1	30.0	28.9	30.4
ASIA										
Cyprus		118	113	112			14.3	22.5		
India	8,877	7,303	7,350	7,126		16.4	20.0	19.8	19.2	
Russia	2,912	[5] 452	[5] 514	1,996	[5] 676	12.6	9.9	14.5	13.6	46.2
Japanese Empire:										
Japan	3,642	2,746	2,549	2,483	2,462	29.4	29.6	27.0	30.2	32.5
Chosen	[4] 1,623	2,130	2,128	2,124	2,162	[4] 19.9	16.5	14.7	19.0	18.7
Formosa	4	3	3			13.3	9.3	9.3		
Kwantung	1	1	1			8.0	18.0			
Total Northern Hemisphere countries reporting all years shown:										
Excluding Russia	49,575	47,280	49,811	49,659	52,546					
Including Russia	75,768	55,184	65,143	66,625	65,811					

[1] Where changes in boundary have occurred averages are estimates for territory within present boundaries.
[2] Three-year average.
[3] One year only.
[4] Four-year average.
[5] Exclusive of Turkestan and Transcaucasia.

TABLE 110.—*Barley: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Acreage					Yield per acre				
	Average 1909–1913[1]	1922	1923	1924	1925 preliminary	Average 1909–1913	1922	1923	1924	1925 preliminary
SOUTHERN HEMISPHERE	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Chile	111	153	145	124	126	36.8	49.5	36.3	35.2	------
Uruguay	[4] 7	3	5	8	17	[4] 11.1	9.3	15.8	12.9	------
Argentina	230	599	685	781	900	[3] 19.1	12.9	17.3	8.9	15.1
Union of South Africa [5]	[3] 109	107	------	------	------	[3] 9.4	11.3	------	------	------
Australia	154	------	------	------	------	19.6	------	------	------	------
New Zealand	35	17	21	25	------	36.1	36.6	29.6	33.2	------
Total Southern Hemisphere countries reporting all years shown	348	755	835	913	1,043	------	------	------	------	------
Total Northern and Southern Hemisphere countries reporting all years shown:										
Excluding Russia	49,923	48,035	50,646	50,572	53,589	------	------	------	------	------
Including Russia	76,116	55,939	65,978	67,538	66,854	------	------	------	------	------
Estimated world total: [7]										
Excluding Russia	59,900	56,700	59,200	58,900	62,000	------	------	------	------	------
Including Russia	86,100	64,600	74,500	75,900	75,300	------	------	------	------	------

Division of Statistical and Historical Research. Official sources and International Institute except as otherwise stated. Estimates given are for crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Where changes in boundary have occurred averages are estimates for territory within present boundaries.
[2] Three-year average.
[3] One year only.
[4] Excluding native locations.
[7] Excludes a few minor producing countries which do not enter into world trade or for which no estimates are available.

TABLE 111.—*Barley: Production in specified countries, average 1909–1913, annual 1922–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE					
NORTH AMERICA					
Canada	45,275	71,865	76,998	88,807	112,668
United States	184,812	182,068	197,691	178,322	218,002
Mexico	7,021	3,887	3,910	3,988	4,164
Total, North America	237,108	257,820	278,599	271,117	334,834
EUROPE					
United Kingdom:					
England and Wales	50,658	42,233	41,717	44,142	46,388
Scotland	7,173	6,133	5,800	5,692	6,082
Ireland	7,510	7,170	5,647	6,160	------
Norway	2,867	4,483	3,282	4,692	5,093
Sweden	15,035	13,503	11,429	13,303	14,702
Denmark	26,860	30,433	32,457	34,219	34,907
Netherlands	3,270	3,143	2,950	3,485	3,093
Belgium	4,446	3,438	4,182	3,735	4,536
Luxemburg	82	177	201	174	209
France	52,826	40,908	45,024	48,051	48,940
Spain	74,689	77,583	111,861	93,700	98,925
Portugal	------	1,823	2,453	1,663	------
Italy	10,638	8,253	10,499	8,685	12,869
Switzerland	441	491	570	519	532
Germany	133,787	73,824	108,446	110,226	119,373

[1] Where changes in boundaries have occurred averages are estimates for territory in present boundaries.

TABLE 111.—*Barley: Production in specified countries, average 1909–1913, annual 1922–1925*—Continued

[Thousand bushels—i. e., 000 omitted]

Country	Average 1909–1913	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE—Continued					
EUROPE—continued					
Austria	10,065	5,599	7,855	7,208	10,195
Czechoslovakia	71,108	46,352	54,981	44,583	51,932
Hungary	32,369	22,169	27,271	14,712	22,609
Yugoslavia	20,229	11,069	14,065	13,478	18,371
Greece	[2] 6,953	7,000	7,101	6,169	8,123
Bulgaria	10,380	11,941	11,063	7,945	14,632
Rumania	[3] 61,677	93,778	60,870	30,759	47,568
Poland	69,055	59,559	76,036	55,489	77,146
Lithuania	8,820	10,725	7,957	9,317	11,770
Latvia	7,922	6,770	6,921	7,437	8,169
Esthonia	6,201	6,670	4,098	5,539	5,167
Finland	4,947	6,466	3,893	5,969	5,676
Russia	381,235	110,955	204,302	147,570	243,471
Total European countries reporting all years shown:					
Excluding Russia	[4] 692,498	592,650	659,629	569,228	677,619
Including Russia	1,073,733	703,605	863,931	716,798	921,090
NORTH AFRICA					
Morocco	(38,000)	27,230	35,371	53,279	39,315
Algeria	45,974	20,912	44,527	18,706	47,983
Tunis	7,826	1,837	11,382	2,526	6,981
Egypt	11,867	11,306	11,988	10,754	11,144
ASIA					
Cyprus	2,183	1,693	2,543		
India	145,496	145,973	145,400	137,060	
Russia	36,795	[5] 4,458	[5] 7,431	27,195	31,246
Japanese Empire:					
Japan	89,531	81,411	68,858	74,982	80,081
Chosen	[3] 32,243	35,133	31,284	40,354	40,354
Formosa	53	28	28		
Kwangtung	8	18			
Total Northern Hemisphere countries reporting all years shown:					
Excluding Russia	1,155,047	1,028,299	1,141,718	1,040,946	1,238,311
Including Russia	1,573,077	1,143,712	1,353,451	1,215,711	1,513,028
SOUTHERN HEMISPHERE					
Chile	4,090	7,577	5,203	4,370	
Uruguay	[3] 78	28	79	103	
Argentina	[3] 4,395	7,741	11,871	6,974	13,595
Union of South Africa [6]	[7] 1,146	1,213			
Australia	3,021	6,822	5,183		
New Zealand	1,264	623	622	831	
Total Southern Hemisphere countries reporting all years shown	4,395	7,741	11,871	6,974	13,595
Total Northern and Southern Hemisphere countries reporting all years shown:					
Excluding Russia	1,159,442	1,036,040	1,153,589	1,047,920	1,251,906
Including Russia	1,577,472	1,151,453	1,365,322	1,222,685	1,526,623
Estimated world total: [8]					
Excluding Russia	[4] 1,326,000	1,209,000	1,322,000	1,207,000	1,414,000
Including Russia	1,744,000	1,324,000	1,534,000	1,382,000	1,689,000

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Production as reported is for the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Where changes in boundaries have occurred averages are estimates for territory in present boundaries.
[2] One year only.
[3] Four-year average.
[4] The estimate for the five-year period 1909–1913 given in this table is somewhat larger than the figure obtained by averaging those five years in Table 112. This is because in the detailed table estimates for warring countries are for postwar boundaries, whereas in Table 112 they are for pre-war territory. As a result in excluding Russia, which lost territory during the war, a smaller area is excluded in the detailed table than in Table 112.
[5] Excluding Turkestan and Transcaucasia.
[6] Excludes native locations which produced 38,550 bushels in 1917–18 and 29,057 bushels in 1920–21.
[7] Two-year average.
[8] Excludes a few minor producing countries which do not enter into world trade or for which no statistics are available.

TABLE 112.—*Barley: World production, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year	Production in countries reporting all years	Preliminary estimate of world production, excluding Russia	Preliminary estimate of European totals, excluding Russia	Three selected countries—		
				Russia [1]	Germany	Japan
1909	778,074	1,247,000	621,000	501,869	160,568	87,185
1910	707,237	1,151,000	560,000	487,919	133,330	81,953
1911	728,017	1,235,000	606,000	436,569	145,133	86,480
1912	772,145	1,254,000	589,000	496,352	159,924	90,559
1913	783,690	1,309,000	637,000	600,232	168,709	101,477
1914	718,089	1,124,000	546,000	[2] 432,615	144,125	85,774
1915	691,862	1,156,000	477,000	[2] 429,161	114,077	94,959
1916	669,754	1,115,000	507,000	----------	128,450	89,335
1917	612,658	1,085,000	426,000	----------	[3] 89,886	88,896
1918	694,950	1,189,000	420,000	----------	[3] 93,504	87,769
1919	536,432	1,033,000	479,000	----------	[3] 87,741	89,356
1920	580,268	1,061,000	551,000	[4] [3] 183,583	[3] 82,344	84,909
1921	574,819	1,123,000	565,000	[3] [4] 100,826	[3] 89,056	82,323
1922	553,733	1,209,000	602,000	[3] [4] 115,413	[3] 73,824	81,411
1923	650,051	1,322,000	668,000	[3] [4] 211,733	[3] 108,446	68,858
1924	593,786	1,207,000	577,000	[3] 174,765	[3] 110,226	74,982
1925 preliminary	699,741	1,414,000	678,000	[3] 274,716	[3] 119,373	80,081

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. For each year is shown the production during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Includes all Russian territory reporting for years named.
[2] Excludes Poland.
[3] New boundaries and therefore not comparable with earlier years.
[4] Excluding Turkestan and Transcaucasia.

TABLE 113.—*Barley: Farm stocks, supplies and shipments, United States, 1910–1925*

Year beginning August	Old stocks on farms Aug. 1 [1]	Crop			Total supplies	Stocks on farms Mar. 1 following [1]	Shipped out of county where grown [1]
		Quantity	Weight per bushel [2]	Quality [3]			
	1,000 bushels	*1,000 bushels*	*Pounds*	*Per cent*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1910	8,075	173,832	46.9	88.1	181,907	33,498	86,955
1911	5,763	160,240	46.0	84.9	166,003	24,754	91,620
1912	2,591	223,824	46.8	86.2	226,415	62,301	120,143
1913	11,252	178,189	46.5	86.4	189,441	44,126	86,262
1914	7,609	194,953	46.2	87.5	202,562	42,889	87,834
1915	6,336	228,851	47.4	90.5	235,187	58,301	98,965
1916	10,982	182,309	45.2	84.4	193,291	33,244	79,257
1917	3,775	211,759	46.6	90.9	215,534	44,419	84,056
1918	4,510	256,225	46.9	89.8	260,735	81,746	99,987
1919	11,897	147,608	45.2	84.8	159,505	33,820	50,471
1920	4,122	189,332	46.0	88.2	193,454	65,229	68,663
1921	13,487	154,946	44.4	82.5	168,433	42,294	55,738
1922	7,497	182,068	46.2	88.5	189,565	42,469	66,560
1923	6,805	197,691	45.3	86.6	204,496	44,930	68,190
1924	6,359	178,322	47.0	88.7	184,681	40,064	66,040
1925 [4]	5,627	218,002	45.9	88.1	223,629	53,466	77,330

Division of Crop and Livestock Estimates.

[1] Based on percentage of entire crop as reported by crop reporters.
[2] Average weight per measured bushel as reported by crop reporters.
[3] Per cent of a "high medium grade" as reported by crop reporters.
[4] Preliminary.

91044°—26——53

TABLE 114.—*Barley: Receipts at markets named, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning August	Minneapolis	Duluth	Chicago	Milwaukee	Omaha	Fort William and Port Arthur [1]
1909	22,828	12,177	26,658	15,143	.....	3,301
1910	1,518	7,157	20,740	12,915	.....	1,537
1911	19,134	6,019	20,929	12,797	.....	3,483
1912	35,682	14,504	30,083	19,824	.....	9,859
1913	29,796	10,895	26,201	17,499	.....	10,667
Average, 1909–1913	21,792	10,150	24,922	15,636	.....	5,769
1914	29,465	11,122	25,073	7,096	.....	2,884
1915	45,143	15,396	32,085	19,850	.....	10,356
1916	26,301	8,633	28,075	19,619	1,236	7,688
1917	35,423	7,470	21,473	14,675	2,089	7,470
1918	43,172	8,427	26,871	18,458	3,991	7,741
1919	13,194	2,322	13,694	10,208	831	8,194
1920	17,774	4,043	10,192	9,813	1,325	12,326
Average, 1914–1920	30,067	8,202	22,495	14,246	[2] 1,894	8,094
1921	11,945	5,154	7,597	9,341	1,075	11,597
1922	14,259	3,835	10,073	9,446	801	15,756
1923	13,641	3,926	9,755	9,077	785	15,910
1924	23,158	15,287	11,336	13,127	600	28,045
1924						
August	1,484	602	775	616	.....	.....
September	3,913	5,498	1,748	2,336	139	3,015
October	4,155	3,772	2,070	1,840	155	8,049
November	2,756	1,937	1,127	1,137	61	6,998
December	2,218	229	1,238	1,397	42	2,875
1925						
January	2,349	47	915	1,267	43	736
February	1,612	129	1,036	1,096	29	1,086
March	1,493	144	660	823	26	1,050
April	724	142	416	669	19	1,212
May	889	520	382	744	19	724
June	790	1,254	491	648	13	444
July	775	1,013	478	554	54	1,502
August	3,784	3,200	1,860	2,444	.....	354
September	5,231	7,196	1,166	1,051	98	9,973
October	3,229	1,639	1,255	1,050	69	5,774
November	2,229	996	492	823	50	6,240
December	2,214	445	682	680	51	4,466

Division of Statistical and Historical Research. Compiled from Minneapolis Daily Market Record, Chicago Daily Trade Bulletin, Grain Dealers Journal, and Canadian Statistics.

[1] Caop yeas begins in September.

[2] Five-year average.

TABLE 115.—*Barley: International trade, average 1910–1914, annual 1923–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Year ended June 30							
	Average 1910–1914		1923		1924		1925 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria	[1] 213	[1] 5,482	4,282	105	202	9,452	1,964	957
Argentina	[2] 3	[2] 764	[3] 120	1,381	[3] 1	9,313	[3] 5	4,229
Australia	[2] 159	[2] 51		2,305		1,905		[4] 1,552
British India	[1] [5] 23	[1] 10,640	[1] 8	1,399	([1] [6])	[7] 11,367	[8] 4	[7] 18,075
Bulgaria		[1] 1,876	([4] [6])	[1] 1,270	([4] [6])	[1] 484	([4] [6])	[4] [9] 517
Canada	66	5,210	([6])	12,474	2	16,577	([6])	27,796
Chile	[2] 88	[2] 1,062		1,776		3,737		2,362
Czechoslovakia			11	7,103	[1] 106	[4] 8,182	2,292	3,153
Hungary	[1] 229	[1] 11,836	[1] 12	[4] 15	[1] 9	[4] 328	[8] 164	[4] 384
Poland			[1] 19	[1] 967	[1] 3	[1] 2,194	[8] 102	[10] 4,529
Rumania	[1] [11] 63	[1] [11] 16,804	([6], [12])	[4] 39,065	([6])	24,714	([6])	7,743
Russia	[1] 124	[1] 173,240				[13] 19,883		[13] 2,433
Spain	640	117	142	1	83	662		[4] 212
Sweden	[1] 28	[1] 102	28	782	204	19	31	540
Tunis	[1] 328	[1] 3,055	[1] 969	[4] 358	[1] 128	[4] 6,622	[8] 518	[4] 313
United States		7,896		18,193		11,209		23,053
Yugoslavia				[1] 3		[1] 218		[4] 1,197
PRINCIPAL IMPORTING COUNTRIES								
Austria	[1] 716	[1] 8,123	[4] 3,367	[1] 106	3,910	[1] 45	3,890	[4] [9] 32
Belgium	18,351	3,079	11,367	63	12,491	81	12,068	103
Ceylon			[10] 19		[10] 11		[4] 12	
Cuba	255		384		438		[12] 251	
Denmark	[1] 3,024	[1] 2,906	6,149	1,190	10,640	622	5,128	3,071
Egypt	[1] 732	[1] [14] 42	607	12	182	35	126	107
Esthonia [4]					372		140	
Finland			67		273		42	
France	6,711	787	1,411	748	6,728	831	2,113	917
Germany	148,297	136	13,128	122	23,085	13	31,018	2,849
Greece			627		1,368		[4] 1,498	
Irish Free State							784	100
Italy	824	20	528	47	386	61	212	610
Japan	[1] 15		[1] 10		[1] 108		[4] 48	
Latvia			[1] 51	[1] 312	[1] 415	[1] 26	[4] 196	[10] 175
Netherlands	[1] 38,039	[1] 26,975	9,067	404	15,267	556	9,293	782
Norway	[1] 4,550		1,627	([6])	2,988	([6])	1,501	([6])
Portugal	[1] 24	[1] 5						
Switzerland	[1] 1,140	[1] 1	2,907	([6])	3,101	1	2,956	1
Syria and Lebanon					[10] 64		[10] 487	
United Kingdom	48,550	[9] 101	38,958	[8] 137	43,676	[8] 131	41,140	
Total 38 countries	273,192	280,310	95,865	90,338	126,241	129,268	117,983	108,392

Division of Statistical and Historical Research. Official sources except as otherwise noted.

[1] Year ended July 31 as compiled by the International Institute of Agriculture.
[2] Average of calendar years 1909–1913.
[3] Year ended December 31.
[4] International Institute of Agriculture.
[5] Average for seasons 1909–10 to 1911–12.
[6] Less than 500 bushels.
[7] Sea-trade only.
[8] Ten months ended May 31, from the International Institute of Agriculture.
[9] Eight months.
[10] Eleven months, from the International Institute of Agriculture.
[11] Average for seasons 1911–12 to 1913–14.
[12] Six months.
[13] Commercial source.
[14] Average for seasons 1912–13 to 1913–14.

TABLE 116.—*Barley: Estimated price per bushel, received by producers, United States, 1909–1925*

Year beginning August	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Weighted average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	57.9	54.0	53.4	53.6	55.8	58.4	59.8	60.0	58.1	56.1	54.8	54.3	55.8
1910	56.0	56.6	55.7	56.6	58.8	62.0	63.6	66.0	71.6	73.9	72.0	69.7	61.3
1911	73.2	79.4	83.3	85.9	86.6	88.8	91.1	91.6	94.2	93.6	86.5	74.4	83.2
1912	60.2	54.2	54.3	52.2	50.2	50.6	50.2	48.8	48.4	50.5	53.2	52.2	53.2
1913	53.0	56.0	55.8	54.2	53.0	52.3	51.8	51.4	50.5	49.2	48.3	46.3	52.6
Av. 1909–1913	60.1	60.0	60.5	60.5	60.9	62.4	63.3	63.6	64.6	64.7	63.0	59.4	61.2
1914	48.8	52.2	51.8	53.0	54.3	58.6	65.3	66.2	64.2	62.9	58.9	56.2	55.4
1915	54.3	49.4	48.4	50.8	53.2	58.3	60.6	58.4	58.4	59.6	59.4	59.3	54.3
1916	66.1	74.7	79.8	85.6	87.6	89.9	94.8	99.6	111.2	119.7	113.0	110.6	88.7
1917	112.2	112.0	112.6	112.5	120.1	129.2	146.5	165.6	164.4	147.0	126.9	114.2	137.8
1918	105.4	98.2	95.2	93.3	91.5	89.0	86.1	89.0	98.3	106.6	108.8	113.6	98.6
1919	117.2	115.4	116.2	118.8	125.4	133.6	133.2	134.6	143.2	147.4	145.2	131.5	125.7
1920	113.0	98.1	86.4	76.5	67.8	60.8	57.0	55.6	51.8	50.4	51.1	50.0	76.1
Av. 1914–1920	88.1	85.7	84.3	84.4	85.7	88.5	91.9	95.6	98.8	99.1	94.8	90.8	90.9
1921	48.2	46.2	43.6	41.8	42.8	44.0	47.0	51.2	54.6	57.0	55.0	51.0	47.4
1922	47.7	46.2	49.2	52.0	55.6	56.8	56.2	58.0	59.6	60.8	58.3	54.7	52.6
1923	52.2	51.9	54.7	55.2	57.6	56.5	58.0	60.0	61.0	60.0	61.9	68.8	57.1
1924	75.7	75.6	81.4	79.7	76.2	82.4	84.8	81.5	76.1	75.9	76.4	73.5	77.9
1925	67.1	60.8	57.6	58.0	58.4								

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, August, 1909–December, 1923.

TABLE 117.—*Barley: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Maine	80	81	75	104	130	149	170	138	121	86	100	100	108	80	95
New Hampshire	81	82	79	90	175	150	188	146	130	110	98	85	105	85	97
Vermont	77	75	75	100	140	153	150	120	116	80	97	95	103	83	92
New York	75	71	75	101	130	126	136	99	105	62	74	75	91	77	76
Pennsylvania	67	70	75	75	140	120	128	90	100	62	65	72	90	86	75
Ohio	64	59	54	80	118	93	125	82	87	51	65	63	85	70	67
Indiana	61	67	65	75	104	104	118	87	89	48	58	65	77	71	64
Illinois	62	61	57	103	121	90	121	82	91	46	58	58	75	63	60
Michigan	66	65	62	91	119	100	118	87	92	57	66	64	80	72	68
Wisconsin	67	62	56	105	124	92	121	84	92	51	57	61	78	66	63
Minnesota	58	53	49	87	111	80	116	62	80	34	47	44	69	52	49
Iowa	60	55	49	91	117	85	112	63	82	42	49	52	70	57	54
Missouri	66	65	63	93	94	115	130	98	94	65	72	78	82	95	78
North Dakota	52	45	44	80	100	73	108	56	72	29	39	38	62	43	42
South Dakota	56	50	46	83	110	78	115	52	76	29	42	40	64	47	44
Nebraska	48	47	42	75	98	85	100	50	71	28	47	44	63	54	47
Kansas	51	47	42	77	115	95	100	45	74	29	45	49	65	58	49
Maryland	63	66	70	73	130	120	123	110	99	67	75	80	93	87	80
Virginia	71	80	75	85	139	160	130	100	110	72	80	80	105	97	87
Kentucky	75	77	77	90	115	140	157	115	110	61	85	84	101	95	85
Tennessee	80	82	75	100	144	152	180	110	120	100	80	100	110	110	100
Oklahoma	62	53	50	100	148	124	122	72	96	45	55	70	70	75	63
Texas	88	70	68	80	137	130	112	75	96	45	65	68	76	90	69
Montana	59	53	48	76	103	100	140	65	84	60	50	48	69	72	60
Idaho	56	50	52	82	105	130	140	75	91	47	65	58	82	56	62
Wyoming	68	64	55	87	130	130	175	110	107	65	60	65	72	61	65
Colorado	60	55	48	82	104	113	120	75	85	37	59	54	72	58	56
New Mexico	79	75	70	100	139	110	110	75	97	61	95	80	60	85	76
Arizona	85	60	56	108	150	130	140	140	112	80	85	95	88	100	90
Utah	61	50	52	76	120	140	141	100	97	48	55	70	87	85	69
Nevada	81	65	70	95	119	154	150	165	117	80	100	83	110	82	91
Washington	59	52	56	84	116	115	135	100	94	52	74	60	85	68	68
Oregon	61	61	62	80	115	136	150	100	101	50	74	67	100	73	73
California	70	59	62	95	120	115	141	100	99	56	63	70	116	75	76
United States	60.7	54.3	51.6	88.1	113.7	91.7	120.6	71.3	84.5	41.9	52.5	54.1	73.9	58.6	56.2

Division of Crop and Livestock Estimates.

TABLE 118.—*Barley, No. 2: Weighted average price per bushel, Minneapolis, 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Weighted average [1]
1909	$0.45	$0.48	$0.49	$0.52	$0.57	$0.61	$0.60	$0.58	$0.54	$0.54	$0.53	$0.60	$0.54
1910	.61	.63	.63	.66	.70	.77	.74	.81	.88	.75	.77	.87	.74
1911	.85	.94	.95	.98	.91	1.05	1.00	.95	1.01	.99	.76	.60	.92
1912	.46	.49	.50	.47	.45	.49	.48	.46	.46	.50	.52	.48	.48
1913	.58	.61	.56	.53	.50	.52	.50	.48	.47	.48	.47	.45	.51
Av. 1909–1913	.59	.63	.63	.63	.63	.69	.66	.66	.67	.65	.61	.60	.64
1914	.59	.58	.55	.59	.57	.68	.75	.70	.70	.70	.66	.68	.65
1915	.59	.48	.51	.56	.61	.70	.66	.65	.68	.70	.68	.69	.63
1916	.81	.81	1.03	1.11	1.07	1.17	1.17	1.21	1.36	1.48	1.38	1.49	1.17
1917	1.31	1.33	1.28	1.27	1.49	1.56	1.88	2.12	1.82	1.46	1.23	1.18	1.49
1918	1.02	.95	.91	.94	.92	.90	.87	.93	1.09	1.13	1.12	1.21	1.00
1919	1.33	1.27	1.29	1.33	1.52	1.52	1.37	1.51	1.60	1.74	1.49	1.16	1.43
1920	1.02	.99	.92	.82	.74	.69	.65	.67	.61	.59	.57	.62	.74
Av. 1914–1920	.95	.92	.93	.95	.99	1.03	1.05	1.11	1.12	1.11	1.02	1.00	1.02
1921	.58	.55	.50	.54	.47	.51	.56	.58	.61	.62	.56	.56	.55
1922	.49	.54	.57	.60	.61	.57	.60	.59	.64	.61	.58	.59	.58
1923	.56	.58	.60	.61	.62	.62	.68	.70	.75	.70	.73	.76	.63
1924	.80	.81	.85	.81	.87	.93	.94	.88	.81	.84	.84	.84	.84
1925	.72	.66	.65	.63	.65								

Division of Statistical and Historical Research. Compiled from Minneapolis Market Record.

[1] Average of daily prices weighted by carlot sales.

FLAX AND FLAXSEED

TABLE 119.—*Flaxseed: Acreage, production, value, exports, etc., United States, 1909-1925*

Year	Acreage	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Domestic exports, fiscal year beginning July 1 [2]	Imports, fiscal year beginning July 1 [2]
	Acres	*Bush. of 56 lbs.*	*Bushels*	*Cents*	*Dollars*	*Dollars*	*Bushels*	*Bushels*
1909	*2,083,000*	9.5	19,699,000	152.8	30,093,000	14.45	65,193	5,002,496
1910	2,467,000	5.2	12,718,000	231.7	29,472,000	11.95	976	10,499,227
1911	2,757,000	7.0	19,370,000	182.1	35,272,000	12.79	4,323	6,841,806
1912	2,851,000	9.8	28,073,000	114.7	32,202,000	11.29	16,894	5,294,296
1913	2,291,000	7.8	17,853,000	119.9	21,399,000	9.34	305,546	8,653,235
Av. 1909–1913	2,490,000	7.9	19,543,000	151.9	29,688,000	11.92	78,586	7,258,212
1914	1,645,000	8.4	13,749,000	126.0	17,318,000	10.53	4,145	10,666,215
1915	1,387,000	10.1	14,030,000	174.0	24,410,000	17.60	2,614	14,679,233
1916	1,474,000	9.7	14,296,000	248.6	35,541,000	24.11	1,017	12,393,988
1917	1,984,000	4.6	9,164,000	296.6	27,182,000	13.70	21,481	13,366,529
1918	1,910,000	7.0	13,369,000	340.1	45,470,000	23.81	15,574	8,426,886
1919	1,503,000	4.8	7,178,000	438.5	31,475,000	20.94	24,044	23,391,934
1920	1,757,000	6.1	10,752,000	176.7	18,999,000	10.81	1,481	16,170,415
Av. 1914–1920	1,666,000	7.1	11,805,000	242.9	28,680,000	17.22	10,051	14,156,457
1921	1,108,000	7.2	8,029,000	145.1	11,648,000	10.51	2,267	13,632,073
1922	1,113,000	9.3	10,375,000	211.5	21,941,000	19.71	[3] 216	25,005,936
1923	2,014,000	8.5	17,060,000	210.7	35,951,000	17.91	----------	19,576,750
1924	3,469,000	9.2	31,711,000	227.3	72,094,000	20.78	----------	13,419,087
1925 [4]	3,012,000	7.3	22,007,000	226.5	49,842,000	16.55	----------	----------

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Based on farm price Dec. 1.
[2] Compiled from Commerce and Navigation of United States, 1909–1918, and June issues of Monthly Summaries of Foreign Commerce, 1919–1925.
[3] Six months, beginning July 1, not separately reported in 1923.
[4] Preliminary.

TABLE 120.—*Flaxseed: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
Wisconsin	8	11	104	152	234	344
Minnesota	712	760	8,117	7,600	18,913	17,480
Iowa	8	9	94	94	212	207
Missouri	1	1	9	8	20	15
North Dakota	1,873	1,349	15,920	8,768	36,138	19,816
South Dakota	548	559	4,877	3,801	10,876	8,552
Nebraska	8	6	56	54	126	124
Kansas	57	45	370	306	796	612
Montana	246	271	2,140	1,220	4,729	2,684
Colorado	8	1	24	4	50	8
	3,469	3,012	31,711	22,007	72,094	49,842

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 121.—*Flaxseed: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
Wis	14.5	10.0	12.0	12.5	14.0	12.6	13.5	13.5	12.0	----	11.0	10.5	11.0	----	10.5	13.0	12.1	13.0	13.8	12.5
Minn	10.0	7.5	8.0	10.2	9.0	8.9	9.3	10.5	8.5	9.5	10.4	8.0	9.5	9.4	9.5	10.0	10.0	11.4	10.0	10.2
Iowa	9.8	12.2	8.0	11.5	9.4	10.2	9.5	9.0	10.0	11.0	11.0	9.5	10.0	10.0	8.7	10.4	9.4	11.7	10.5	10.1
Mo	8.1	8.4	3.0	6.0	5.0	6.1	8.0	8.0	7.0	8.5	8.0	9.5	7.5	8.1	7.0	8.0	7.3	9.0	7.5	7.8
N. Dak	9.3	3.6	7.6	9.7	7.2	7.5	8.3	9.9	10.3	3.9	7.8	4.6	5.3	7.2	6.5	9.3	7.7	8.5	6.5	7.7
S. Dak	9.4	5.0	5.3	8.6	7.2	7.1	7.5	11.0	9.3	7.0	9.5	7.0	10.0	8.8	6.5	9.5	8.5	8.9	6.8	8.0
Nebr	8.5	8.0	5.0	9.5	6.0	7.4	7.0	11.0	8.0	5.5	9.5	5.0	9.0	7.9	8.0	8.0	11.0	7.0	9.0	8.6
Kans	7.0	8.2	3.0	6.0	6.0	6.0	6.0	5.7	5.8	7.0	5.0	6.3	6.9	6.1	6.7	6.0	7.6	6.5	6.8	6.7
Mont	12.0	7.0	7.7	12.0	9.0	9.5	8.0	10.5	9.5	3.0	3.0	1.3	2.6	5.4	5.0	7.2	8.2	8.7	4.5	6.7
Wyo	----	----	----	----	----	----	----	13.0	7.0	6.5	9.0	4.0	8.2	----	5.7	7.0	10.0	9.0	----	----
Colo	----	7.0	7.0	8.0	5.0	----	8.0	9.4	6.0	7.0	----	----	7.0	----	----	----	6.6	3.0	4.5	----
U. S	9.5	5.2	7.0	9.8	7.8	7.9	8.4	10.1	9.7	4.6	7.0	4.8	6.1	7.2	7.2	9.3	8.5	9.2	7.3	8.3

Division of Crop and Livestock Estimates.

TABLE 122.—*Flaxseed: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1910–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1910	49.4	[1]	-------	2.5	0.9	6.2	0.1	0.2	59.3	1.4	1.8	[1]	0.1	0.5	63.1
1911	16.4	1.1	-------	8.4	.9	2.8	.1	.8	30.5	2.2	1.7	[1]	.2	1.7	36.3
1912	5.1	2.9	0.2	5.9	2.8	1.1	.8	.2	19.0	3.7	.4	0.4	1.4	1.7	26.6
1913	24.3	.7	.1	1.0	1.7	2.2	.2	.4	30.6	1.6	.3	-------	.4	1.6	34.5
1914	11.4	1.7	.2	2.0	1.9	6.6	.3	------	24.1	2.2	.5	.2	.3	1.8	29.1
1915	2.1	2.0	.3	8.5	2.1	.4	.2	.5	16.1	2.6	.1	[1]	[1]	.8	19.6
1916	3.3	2.3	.3	1.4	1.7	2.8	.3	.3	12.4	3.9	.1	[1]	.1	.7	17.2
1917	51.3	.3	[1]	2.9	1.1	2.9	[1]	.8	59.3	1.2	1.2	[1]	.1	.5	62.3
1918	26.2	.2	.1	3.3	2.3	2.5	.2	------	34.8	.9	2.6	[1]	.1	.9	39.3
1919	38.0	.7	.1	.5	2.0	4.1	[1]	.1	45.5	3.7	10.6	.1	[1]	.3	60.2
1920	23.2	1.2	.3	.6	1.7	4.2	.2	.3	31.7	4.4	3.7	[1]	.1	1.5	41.4
1921	25.2	.9	.2	.5	1.9	6.5	.1	------	35.3	4.3	3.1	[1]	.1	.7	43.5
1922	9.6	.4	.1	.3	2.4	1.7	.2	------	14.7	2.6	3.9	[1]	.1	.3	21.6
1923	10.2	1.0	.2	1.1	2.5	2.8	.3	------	18.1	3.8	1.4	.1	.1	1.0	24.5
1924	7.6	1.0	.2	3.6	1.8	.8	.3	------	15.3	4.0	.2	------	.1	.8	20.4

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 123.—*Flax: Acreage in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE					
NORTH AMERICA	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Canada	1,034,874	565,479	629,938	1,276,667	1,128,100
United States	2,489,800	1,113,000	2,014,000	3,469,000	3,012,000
Total North America	3,524,674	1,678,479	2,643,938	4,745,667	4,140,100
EUROPE					
United Kingdom:					
England and Wales	480	9,352	9,446	5,743	
Northern Ireland	53,014	29,117	42,712	42,838	37,812
Irish Free State		4,915	8,066	10,499	
Sweden	[2] 4,016	5,567	5,446		
Netherlands	33,055	23,954	24,915	31,315	35,200
Belgium	48,930	40,700	46,287	54,461	57,878
France	61,666	38,221	36,813	48,510	49,141
Spain	[3] 7,349	4,594	4,201	(3,000)	2,500
Italy	[2] 50,758	71,906	70,127	51,400	49,400
Austria	12,787	9,212	9,039	9,254	
Czechoslovakia	61,404	56,151	52,440	54,080	61,170
Hungary	7,967	6,627	4,171	5,533	
Yugoslavia	32,274	32,568	33,163	32,333	32,700
Bulgaria	756	722	1,285	572	700
Rumania	[4] 71,253	26,847	33,200	50,638	62,200
Poland	191,710	251,493	255,632	261,958	265,900
Lithuania	143,257	126,517	128,741	151,966	187,800
Latvia	161,906	93,169	140,392	149,486	193,000
Esthonia	135,193	59,178	75,704	75,912	112,200
Finland	[5] 12,236	15,938	14,512	13,100	13,600
Russia, including Asiatic territory	3,165,082	2,160,400	2,318,000	2,864,000	3,413,900
Total European countries reporting all years shown, including Asiatic Russia	4,229,843	3,031,475	3,278,124	3,885,569	4,575,101
NORTH AFRICA					
Kenya		11,781	5,438	5,168	
Morocco		31,720	33,961	45,308	55,200
Algeria	1,366	667	766	793	
Tunis	(8,000)	4,791	4,317	5,246	4,400
Egypt	4,628	1,384	1,698	2,449	3,300
Total North African countries reporting all years shown	12,628	6,175	6,015	7,695	7,700
ASIA					
India [6]	3,824,880	3,382,000	3,730,000	3,695,000	
Japanese Empire:					
Japan	[4] 12,139	39,248	44,532	37,208	
Chosen (Korea)	3,000	3,175	3,428	3,450	
Total Northern Hemisphere countries reporting all years shown	7,767,145	4,716,129	5,928,077	8,638,931	8,722,901
SOUTHERN HEMISPHERE					
Chile	748	526	798		
Uruguay	[4] 126,528	84,459	104,941	146,000	125,100
Argentina	4,113,434	4,270,000	5,360,679	5,379,345	6,200,850
Australia	[3] 1,056	714	5		
New Zealand	[6] 2,565	10,645	12,119	6,700	
Total Southern Hemisphere countries reporting all years shown	4,239,962	4,354,459	5,465,620	5,525,345	6,325,950
Total Northern and Southern Hemisphere countries reporting all years shown	12,007,107	9,070,588	11,393,697	14,164,276	15,048,851
Estimated world total [7]	15,910,000	12,587,000	15,261,000	17,995,000	

Division of Statistical and Historical Research. Official sources and International Intsitute of Agriculture except as otherwise stated. Estimates given are for crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere with the exception of India. See note on India.

[1] Where changes in boundary have occurred averages are estimates for territory within present boundaries.
[2] Three-year average.
[3] Two-year average.
[4] Four-year average.
[5] One year only.
[6] Acreage of crop sown in autumn of year given and harvested in the spring of the succeeding year.
[7] Excludes a few minor producing countries which do not enter into world trade and for which no acreage or production estimates are available.

TABLE 124.—*Flax: Production in specified countries, average 1909–1913, annual 1922–1925*

Country	Seed					Fiber				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
Canada	12,040	5,009	7,140	9,695	9,297					
United States	19,543	10,375	17,060	31,711	22,007					
Total North America	31,583	15,384	24,200	41,406	31,304					
EUROPE										
United Kingdom:										
Northern Ireland						23,700	10,526	14,490	13,035	
Irish Free State							1,902	2,912	3,060	
Sweden	[2] 14	6	4			[2] 1,128	692	626		
Netherlands	376	250	258	346	315	17,276	9,690	15,872	20,490	19,140
Belgium	[3] 472	356	413	464	461	[3] 51,887	33,481	59,779	35,379	51,638
France	534	289	288	417	310	40,732	20,769	23,172	33,870	39,205
Spain	[3] 26	51	51	(50)	45	[3] 1,995	1,417	1,168	(1,300)	1,370
Italy	340	413	402	422	394	6,675	4,982	5,291	4,541	5,290
Austria	112	48	52	65		7,480	7,130	7,311	7,706	
Czechoslovakia	435	312	362	356	492	39,143	27,731	28,377	27,046	33,570
Hungary	63	41	30	42		6,671	5,188	3,258	3,829	
Yugoslavia	161					22,277	15,269	19,177	18,683	
Bulgaria	6	3	11	4	5	382	205	551	201	230
Rumania	[2] 707	194	248	223	315	[2] 11,044	3,114	(6,000)	14,040	
Poland	1,703	1,995	2,338	2,240	2,441	47,336	113,771	90,004	96,222	134,481
Lithuania	1,126	1,108	1,056	1,332	1,653	49,703	45,194	66,623	71,859	90,389
Latvia	953	563	647	980	1,102	62,318	37,563	42,683	57,708	66,138
Esthonia	733	328	347	460	518	49,518	20,759	21,643	23,665	32,628
Finland						4,244	3,447	2,923	2,800	
Russia (including Asiatic territory)	18,984	11,044	13,389	16,523	24,605	739,990	703,819	513,926	625,225	578,000
Total Europe reporting all years shown, including Asiatic Russia	26,395	16,906	19,810	23,847	32,656	1,106,955	1,019,381	869,089	997,506	1,052,079
NORTH AFRICA										
Kenya		34	15	10			1,351	391	442	
Morocco		267	258	445	481					
Algeria	13	7	11	4		188		441		
Tunis	37	8	27	15	37					
Egypt		14	18	25			992	1,212	1,742	
Total African countries reporting all years shown	37	8	27	15	37					
ASIA										
India [4]	20,578	21,320	18,480	21,640						
Japanese Empire:										
Japan	[2] 98	271	284	213		[2] 5,142	10,896	11,040	8,309	
Chosen (Korea)							1,106	1,142	1,258	
Total Northern Hemisphere countries reporting all years shown	58,015	32,298	44,037	65,238	63,997	1,106,955	1,019,381	869,089	997,506	1,052,079

[1] Where changes in boundary have occurred averages are estimates for territory within present boundaries.
[2] Four-year average.
[3] Three-year average.
[4] Figures are for crop sown in autumn of year given and harvested in the spring of the succeeding year.

TABLE 124.—*Flax: Production in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Seed					Fiber				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
SOUTHERN HEMISPHERE	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
Chile	19	5	9	------	------	[2] 127	582	1,367	------	------
Uruguay	[2] 951	719	1,178	1,542	------	------	------	------	------	------
Argentina	31,117	47,577	58,005	45,084	75,000	------	------	------	------	------
Australia	[2] 9	3	------	------	------	[3] 128	49	------	------	------
New Zealand	------	205	157	116	------	------	------	------	------	------
Total Southern Hemisphere countries reporting all years shown	31,117	47,577	58,005	45,084	75,000	------	------	------	------	------
Total Northern and Southern Hemisphere countries reporting all years shown	89,132	79,875	102,042	10,322	138,997	1,106,955	1,019,381	869,089	997,506	1,052,079
Estimated world total [4]	111,500	102,800	122,500	134,400	------	1,194,000	1,082,000	941,000	1,075,000	------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Estimates given are for crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere with the exception of India. See note on India.

[1] Where changes in boundary have occurred averages are estimates for territory within present boundaries.
[2] Four-year average.
[3] Two-year average.
[4] Excludes a few minor producing countries which do not enter into world trade and for which no acreage or production statistics are available.

TABLE 125.—*Flaxseed: Monthly marketings by farmers, as reported by about 3,500 mills and elevators, United States, 1917–1924*

Year beginning July	Percentage of year's receipts												
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Season
1917	1.8	3.6	21.5	28.1	17.6	7.6	4.7	4.0	4.8	1.8	1.6	2.9	100.0
1918	1.8	2.9	14.8	21.5	15.0	10.9	5.2	4.4	5.8	4.3	5.0	8.4	100.0
1919	3.6	8.0	20.6	22.2	11.1	7.4	5.0	6.3	3.1	3.1	2.6	7.0	100.0
1920	2.1	4.7	23.6	28.6	13.0	6.2	5.0	3.3	3.1	2.1	3.4	4.9	100.0
1921	6.4	10.9	20.7	25.7	12.0	6.9	4.3	2.8	3.0	2.4	2.1	2.8	100.0
1922	2.5	13.4	27.6	23.3	11.4	5.9	4.7	3.0	2.7	2.3	1.6	1.6	100.0
1923	1.1	10.0	30.7	27.3	12.1	6.0	2.6	2.3	2.0	1.5	2.1	2.3	100.0
1924	.5	5.3	23.0	34.5	17.8	6.7	3.8	2.7	1.8	1.4	1.2	1.3	100.0

Division of Crop and Livestock Estimates.

TABLE 126.—*Flaxseed: Receipts at Minneapolis, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
1909	999	2,219	1,892	601	966	670	826	437	222	159	123	137	9,251
1910	854	1,530	1,292	535	338	300	232	112	118	122	133	191	5,757
1911	563	1,212	1,570	1,716	531	459	397	468	571	440	487	160	8,574
1912	700	1,657	1,520	2,245	1,450	1,246	1,057	742	518	514	432	281	12,362
1913	756	1,686	1,505	1,131	711	478	592	270	139	165	233	117	7,783
Av. 1909–1913	774	1,661	1,556	1,246	799	631	621	406	314	280	282	177	8,745
1914	901	1,890	1,247	1,016	599	443	384	142	77	146	239	115	7,199
1915	347	1,038	1,506	1,113	319	399	810	486	440	363	441	199	7,461
1916	316	2,380	1,694	1,045	544	442	441	384	263	565	325	92	8,491
1917	265	980	1,112	614	533	553	527	283	349	648	208	94	6,166
1918	536	915	857	788	558	473	829	439	436	942	642	196	7,611
1919	753	570	568	492	344	368	409	159	295	522	554	297	5,331
1920	580	1,444	861	699	298	269	364	434	578	572	338	289	6,726
Av. 1914–1920	528	1,317	1,121	824	456	421	538	332	348	537	392	183	6,998
1921	500	1,144	375	354	308	200	254	196	300	220	157	288	4,296
1922	909	1,121	580	577	447	249	319	476	401	481	359	1,019	6,938
1923	2,654	1,953	1,308	877	358	250	229	210	296	296	264	269	8,964
1924	2,265	3,475	2,781	1,375	1,244	750	671	374	402	442	286	1,094	15,159
1925	3,331	2,745	1,107	722									

Division of Statistical and Historical Research. Compiled from annual reports of the Minneapolis Chamber of Commerce.

TABLE 127.—*Flaxseed: Receipts at Duluth, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
1909	673	3,185	4,489	651	172	42	59	122	148	57	179	51	9,828
1910	379	823	1,442	368	64	56	37	18	18	13	38	14	3,270
1911	281	1,105	3,015	1,259	689	313	137	167	109	247	354	47	7,723
1912	229	2,084	6,408	3,433	1,113	190	359	188	494	780	1,743	582	17,603
1913	467	2,603	2,763	1,153	365	62	48	139	58	185	323	81	8,247
Av. 1909–1913	406	1,960	3,623	1,373	481	133	128	127	165	256	527	155	9,334
1914	89	1,362	2,212	562	154	92	221	224	126	87	187	29	5,345
1915	15	228	2,765	1,670	462	223	39	32	39	74	121	169	5,837
1916	33	909	3,610	1,445	249	114	223	156	364	106	129	72	7,410
1917	184	272	838	539	87	8	45	101	129	310	150	24	2,687
1918	154	1,097	1,385	630	216	80	111	245	138	121	322	135	4,634
1919	194	314	81	227	88	102	90	111	59	621	792	365	3,044
1920	524	997	589	611	171	107	47	144	421	467	572	280	4,930
Av. 1914–1920	170	740	1,640	812	204	104	111	145	182	255	325	153	4,841
1921	409	567	801	356	107	72	126	43	85	167	81	16	2,830
1922	515	1,143	912	391	169	57	74	57	86	542	112	225	4,283
1923	1,272	2,454	1,518	365	120	111	105	63	253	94	119	26	6,500
1924	1,728	6,178	6,197	642	156	110	96	170	249	394	459	241	16,620
1925	2,409	2,693	2,391	693									

Division of Statistical and Historical Research. Compiled from annual reports of the Duluth Board of Trade.

TABLE 128.—*Flaxseed: Shipments from Minneapolis, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
1909	121	584	578	86	69	93	112	153	149	89	33	25	2,092
1910	175	207	295	48	26	30	35	37	73	20	4	9	959
1911	106	223	315	212	142	142	110	111	139	110	61	26	1,697
1912	134	366	616	253	297	199	271	155	91	112	122	54	2,670
1913	106	200	169	102	54	32	34	43	31	17	10	6	804
Av. 1909–1913	128	316	395	140	118	99	112	100	97	70	46	24	1,644
1914	32	98	150	61	46	56	137	61	21	14	76	3	755
1915	6	80	313	169	109	38	27	12	26	7	16	34	837
1916	10	299	468	118	57	78	103	50	122	17	76	22	1,420
1917	27	77	424	118	47	46	68	86	29	27	19	14	982
1918	57	165	272	172	166	98	68	146	42	84	114	1	1,385
1919	106	143	46	35	19	20	35	38	19	67	31	27	586
1920	82	211	59	16	22	37	62	103	71	83	114	203	1,063
Av. 1914–1920	46	153	247	98	67	53	71	71	47	43	64	43	1,004
1921	197	163	225	82	158	114	95	52	46	24	51	70	1,277
1922	183	196	186	108	127	54	82	57	30	53	36	71	1,183
1923	265	409	234	166	121	132	188	127	105	78	54	33	1,912
1924	675	1,455	478	283	170	142	126	102	44	30	64	232	3,801
1925	1,007	621	347	128									

Division of Statistical and Historical Research. Compiled from annual reports of the Minneapolis Chamber of Commerce.

TABLE 129.—*Flaxseed: Shipments from Duluth, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
1909	380	2,172	2,996	3,179	262	34	64	184	166	163	151	98	9,849
1910	253	614	1,482	480	55	91	26	40	85	4	1	148	3,279
1911	120	980	2,318	1,477	651	645	208	184	592	381	269	168	7,993
1912	258	1,135	5,573	3,676	333	46	33	281	1,307	832	1,689	1,269	16,432
1913	1,237	1,736	1,752	2,672	54	30	31	4	378	85	153	81	8,213
Av. 1909–1913	450	1,327	2,824	2,297	271	169	72	139	506	293	453	353	9,153
1914	745	466	3,550	877	99	8	0	13	385	26	0	460	6,629
1915	919	115	2,118	830	28	18	22	12	428	20	25	755	5,290
1916	423	305	2,622	2,697	89	15	13	47	1,246	878	354	241	8,930
1917	150	307	376	784	128	0	48	58	225	337	219	97	2,729
1918	91	619	1,201	949	348	93	50	36	297	223	286	199	4,392
1919	50	250	155	112	63	51	65	11	124	153	535	399	1,968
1920	199	424	960	347	57	23	51	154	866	371	932	246	4,630
Av. 1914–1920	368	355	1,569	942	116	30	36	47	510	287	336	342	4,938
1921	314	894	761	741	144	79	125	49	214	41	165	82	3,609
1922	190	597	1,007	784	366	87	30	26	155	386	114	186	3,928
1923	607	1,555	1,727	1,351	171	229	141	119	183	130	84	119	6,416
1924	1,019	4,554	6,620	1,233	295	284	248	84	285	235	231	371	15,459
1925	942	1,994	3,499	343									

Division of Statistical and Historical Research. Compiled from annual reports of the Duluth Board of Trade.

TABLE 130.—*Flaxseed: Stocks held in public storage houses in Minneapolis on Saturday nearest the 1st of the month, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1909	791	620	480	191	19	3	10	24	1	14	199	449
1910	528	560	572	597	518	231	55	4	9	28	106	189
1911	158	61	29	15	10	4	4	4	1	11	55	151
1912	321	290	236	177	134	87	64	68	58	90	102	178
1913	321	415	461	497	361	202	146	102	37	69	116	239
Av. 1909–1913	424	389	356	295	208	105	56	40	21	42	116	241
1914	210	196	182	214	258	259	241	148	23	37	241	293
1915	385	300	142	74	77	38	55	52	11	5	32	86
1916	238	265	215	148	118	82	51	22	5	7	95	261
1917	328	513	512	458	239	123	166	101	5	19	102	47
1918	93	100	82	79	31	32	46	50	23	13	52	84
1919	63	61	19	115	50	24	55	173	53	29	37	54
1920	49	21	24	24	29	22	16	49	120	150	447	724
Av. 1914–1920	195	208	168	159	115	83	90	85	34	37	144	221
1921	950	1,091	1,097	1,047	974	995	1,093	1,135	1,074	925	834	674
1922	380	147	86	41	41	57	48	10	7	19	75	41
1923	21	8	2	4	2	27	13	5	26	342	448	757
1924	458	382	260	149	72	67	20	3	7	88	265	276
1925	447	412	386	361	339	281	240	187	60	304	927	994
Av. 1921–1925	451	408	366	320	286	285	283	268	235	336	498	548

Division of Statistical and Historical Research. Compiled from annual reports of the Minneapolis Chamber of Commerce, 1899–1924, and from Minneapolis Daily Market Record 1925.

[1] Not over 500 bushels.

TABLE 131.—*Flaxseed: Stocks held in Duluth on Saturday nearest the 1st of the month, 1909–1925*

[Thousand bushels—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1909	865	930	984	1,117	1,174	691	290	334	50	336	1,388	391
1910	316	228	239	226	169	35	54	74	29	132	374	259
1911	225	215	208	211	189	122	130	163	31	193	411	848
1912	843	828	573	618	636	408	318	360	229	107	1,345	2,018
1913	2,490	3,308	4,388	5,786	4,337	3,793	3,181	2,330	1,540	826	1,727	2,699
Av. 1909–1913	948	1,102	1,278	1,592	1,301	1,010	795	652	376	319	1,049	1,243
1914	1,385	1,692	1,715	1,846	2,041	1,934	2,113	2,642	2,255	1,307	1,873	738
1915	241	396	605	882	1,098	1,223	1,292	1,471	852	149	266	688
1916	1,003	1,434	1,647	1,713	1,755	1,369	1,540	1,641	1,059	647	1,722	884
1917	1,171	1,398	1,562	1,851	1,990	1,081	503	389	201	241	203	447
1918	129	74	45	59	265	347	193	103	34	72	440	608
1919	245	60	23	25	324	253	113	129	45	126	163	40
1920	108	67	71	34	130	32	458	693	840	1,172	1,659	1,094
Av. 1914–1920	612	732	810	916	1,086	891	887	1,010	755	531	904	643
1921	1,460	1,558	1,640	1,636	1,630	1,138	1,319	962	921	994	654	448
1922	227	144	122	84	161	64	134	36	9	334	656	595
1923	340	71	40	18	9	15	121	17	85	715	1,753	668
1924	474	364	229	165	187	160	114	90	8	474	2,243	1,801
1925	1,092	888	636	372	274	211	379	393	227	2,082	2,300	1,433

Division of Statistical and Historical Research. Compiled from annual reports of the Duluth Board of Trade.

TABLE 132.—*Flaxseed, including linseed oil: Acreage, production, imports, exports, and net supply in the United States, 1911–1925*

Year beginning July 1	Acreage	Production	Imports			Exports (domestic and foreign)			Net supply
			Seed	Oil (in terms of seed)[1]	Total	Seed	Oil (in terms of seed)[1]	Total	
	1,000 acres	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1911	2,757	19,370	6,842	295	7,137	26	99	125	26,381
1912	2,851	28,073	5,294	69	5,364	17	694	711	32,726
1913	2,291	17,853	8,653	77	8,730	306	96	402	26,182
1914	1,645	13,749	10,666	214	10,880	67	485	552	24,077
1915	1,387	14,030	14,679	20	14,699	3	286	288	28,441
1916	1,474	14,296	12,394	44	12,438	1	481	482	26,253
1917	1,984	9,164	13,367	20	13,387	22	476	499	22,052
1918	1,910	13,369	8,427	396	8,823	16	439	455	21,737
1919	1,503	7,256	23,392	1,820	25,212	49	457	506	31,962
1920	1,757	10,774	16,170	799	16,969	1	225	226	27,517
1921	1,108	8,029	13,632	8,998	22,630	2	149	151	30,508
1922	1,113	10,375	25,006	3,027	28,033	(3)	[5] 166	166	38,242
1923	2,014	17,060	19,577	951	20,528	(4)	[5] 140	140	37,448
1924	3,469	31,711	13,419	1,258	14,677	(4)	[5] 128	128	46,260
1925	[2] 3,012	[2] 22,007							

Division of Statistical and Historical Research. Compiled from reports of the Bureau of Foreign and Domestic Commerce and Division of Crop and Livestock Estimates.

[1] Oil converted to seed on basis of 7½ pounds to a gallon and 2½ gallons of oil to the bushel.
[2] Preliminary.
[3] Less than 500 bushels for the 6 months ended Dec. 31, 1922; not separately reported since that date.
[4] Not separately reported.
[5] Represents domestic oil only. Exports of "foreign" linseed oil not separately reported since December, 1922, but included with exports of "other vegetable oils" (foreign) n. e. s. Exports of "foreign" linseed oil for the 6 months ended Dec. 31, 1922, were the equivalent of 260 bushels of flaxseed.

TABLE 133.—*Flaxseed used in the production of oil, United States, 1919–1925*

[Thousand bushels—i. e., 000 omitted]

Year beginning July 1—	July–Sept.	Oct.–Dec.	Jan.–Mar.	Apr.–June	Total
1918			1,041	4,785	
1919	6,899	7,684	6,336	6,407	27,326
1920	6,542	6,341	6,343	6,332	25,558
1921	5,812	7,539	6,713	3,441	23,505
1922	5,583	8,602	8,292	8,689	31,166
1923	8,223	8,970	9,575	9,434	36,202
1924	7,550	11,530	12,303	9,128	40,511
1925	7,822	11,798			

Division of Statistical and Historical Research. Compiled from reports of the Bureau of the Census.

TABLE 134.—*Flaxseed: International trade, average 1911–1913, annual 1922–1924*

[Thousand bushels—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1911–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	1	25,562	3	36,909	3	40,777	1	53,453
British India	[1] 323	[1] 14,409	260	12,404	226	15,357	[2] 44	13,010
Canada	89	10,645	45	2,073	797	2,871	395	3,101
China		648		1,331		314		209
Esthonia [3]			3	124		20	101	111
Latvia [3]			39	417	270	421	413	693
Lithuania [3]						744		734
Morocco		338		225		289		283
Rumania	19	120	[3] 4		(4)	1	(4)	2
Russia	80	5,739				[3] 193		[3] 1,176
Tunis	(4)	39	(4)	22	[3 4]	[3] 41	(4)	21
Uruguay		994		500		750		[3] 1,118
PRINCIPAL IMPORTING COUNTRIES								
Australia	103	(4)	691	[3 4]	747	[3 4]	[3] 718	
Austria [3]			1	(4)	2	(4)	17	(4)
Austria-Hungary	1,913	41						
Belgium	9,313	5,965	2,934	102	2,453	176	3,691	246
Czechoslovakia			402	(4)	505	(4)	837	[3] 2
Denmark	1		596	(4)	633		865	(4)
Eritrea [3]			117	114	111	172	250	210
Finland	110	(4)	142	[3] 1	115		177	[3 4]
France	6,304	60	5,285	47	6,167	33	6,474	30
Germany	15,312	210	4,061	2	2,206	1	5,109	24
Hungary [3]			1		2	5	13	11
Italy	1,698	1	1,217	2	1,470	3	2,288	1
Japan	[5] 27	[5] 27	140	14	337	1	406	1
Netherlands	8,741	2,488	9,862	201	7,743	155	11,479	165
Norway	445		353		494		605	
Spain [3]					544		602	
Sweden	911	7	1,043	(4)	1,204	(4)	1,212	(4)
United Kingdom	15,908		14,092		15,153		17,765	
United States	7,298	101	14,913	2	24,332		16,589	
Other countries	575	139	40	102	134	133	260	313
Total	69,171	67,533	56,240	54,592	65,648	62,457	70,311	74,914

Division of Statistical and Historical Research. Official sources except where otherwise noted.

[1] Two-year average.
[2] Three months only.
[3] International Institute of Agriculture.
[4] Less than 500 bushels.
[5] One year only.

TABLE 135.—*Flaxseed: Estimated price per bushel, received by producers, United States, 1909–1925*

Year beginning September—	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Weighted average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	123.0	131.3	146.4	162.0	182.0	193.0	193.5	201.7	202.5	189.5	196.6	214.8	159.0
1910	227.2	231.8	230.6	226.4	227.5	237.3	237.6	238.2	233.4	215.3	202.4	201.4	228.5
1911	204.3	207.8	196.4	184.6	189.0	187.4	187.6	186.2	193.0	201.7	186.8	168.9	194.3
1912	155.2	140.6	124.0	110.4	107.8	114.2	116.3	114.0	115.0	114.6	116.0	123.2	123.5
1913	125.2	120.6	119.3	122.0	126.0	130.2	132.6	133.8	135.8	136.4	143.4	145.0	124.5
Average 1909–1913	167.0	166.4	163.3	161.1	166.5	172.4	173.5	154.8	175.9	171.5	169.0	170.7	165.9
1914	133.4	123.0	122.4	130.4	149.2	160.8	162.8	168.6	169.6	161.0	148.6	144.0	134.5
1915	145.8	155.5	168.4	180.0	198.4	206.7	202.3	197.0	184.2	169.8	170.6	184.2	174.0
1916	194.7	217.0	241.6	249.6	252.2	253.4	259.6	283.4	290.7	288.4	274.8	287.2	243.5
1917	305.6	302.2	296.2	303.7	318.8	338.2	364.8	376.5	368.4	356.4	379.9	395.8	315.9
1918	381.0	357.4	337.0	333.9	318.9	318.8	338.0	355.0	375.4	416.7	492.4	529.0	353.6
1919	477.8	410.2	410.3	436.0	445.0	464.6	464.2	452.0	434.6	390.4	331.6	297.0	421.1
1920	285.0	259.9	208.4	170.2	160.0	153.4	146.5	134.2	135.7	145.8	154.0	163.4	199.2
Average 1914–1920	274.8	260.7	254.9	257.7	263.2	270.8	276.9	281.0	281.1	275.5	278.8	285.8	263.1
1921	163.8	154.0	145.0	148.1	162.1	194.6	217.4	224.6	233.8	230.0	217.2	200.8	164.2
1922	189.1	199.4	211.0	217.8	229.9	245.4	261.6	279.5	273.1	248.4	228.8	210.4	218.2
1923	208.4	212.1	211.4	218.8	218.8	224.9	223.7	217.7	222.6	213.1	218.1	210.2	215.0
1924	201.2	210.8	222.7	235.8	271.8	275.3	267.8	244.7	251.8	246.8	227.6	229.5	231.9
1925	227.9	228.9	228.1	232.1									

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, September, 1909–December, 1923.

TABLE 136.—*Flaxseed: Estimated price per bushel, received by producers December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Wisconsin	158	125	180	240	-----	330	430	212	-----	150	180	210	225	226	198
Minnesota	161	128	176	240	295	341	445	183	258	151	218	213	233	230	209
Iowa	156	120	150	215	275	320	420	180	240	153	185	210	225	220	199
North Dakota	162	128	178	252	300	345	441	178	260	143	214	212	227	226	204
South Dakota	158	123	167	247	299	325	425	165	250	139	201	208	223	225	199
Nebraska	154	119	147	230	250	330	400	155	233	150	190	210	225	230	201
Kansas	151	125	145	234	290	330	380	180	241	135	186	215	215	200	190
Montana	161	120	170	248	295	338	440	175	255	140	197	193	221	220	194
United States	160. 2	126. 0	174. 0	248. 6	296. 6	340. 1	438. 5	176. 7	257. 2	145. 1	211. 5	210. 7	227. 3	226. 5	204. 2

Division of Crop and Livestock Estimates.

TABLE 137.—*Flaxseed No. 1: Average price per bushel at Minneapolis, 1909–1925*

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
	Dolls.	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
1909	1. 41	1. 57	1. 75	1. 93	2. 18	2. 18	2. 25	2. 38	2. 22	2. 04	2. 34	2. 47	2. 06
1910	2. 66	2. 62	2. 61	2. 42	2. 60	2. 68	2. 60	2. 56	2. 47	2. 24	2. 10	2. 34	2. 49
1911	2. 47	2. 35	2. 04	2. 06	2. 15	2. 06	2. 06	2. 15	2. 23	2. 25	1. 97	1. 86	2. 14
1912	1. 76	1. 60	1. 35	1. 25	1. 29	1. 34	1. 26	1. 29	1. 30	1. 31	1. 38	1. 47	1. 38
1913	1. 45	1. 38	1. 35	1. 44	1. 49	1. 53	1. 58	1. 54	1. 56	1. 59	1. 68	1. 64	1. 52
Av. 1909–1913	1. 95	1. 90	1. 82	1. 82	1. 94	1. 96	1. 95	1. 98	1. 96	1. 89	1. 89	1. 96	1. 92
1914	1. 51	1. 33	1. 45	1. 54	1. 83	1. 86	1. 91	1. 93	1. 95	1. 76	1. 67	1. 67	1. 70
1915	1. 70	1. 86	1. 99	2. 07	2. 31	2. 32	2. 27	2. 13	1. 96	1. 80	1. 96	2. 15	2. 04
1916	2. 11	2. 54	2. 78	2. 84	2. 89	2. 81	2. 90	3. 18	3. 33	3. 11	3. 01	3. 46	2. 91
1917	3. 38	3. 16	3. 29	3. 40	3. 60	3. 74	4. 08	4. 09	3. 93	3. 86	4. 40	4. 39	3. 78
1918	4. 09	3. 59	3. 77	3. 54	3. 41	3. 45	3. 75	3. 88	4. 12	4. 86	5. 94	5. 87	4. 19
1919	4. 92	4. 32	4. 83	4. 99	5. 12	5. 09	5. 02	4. 68	4. 63	3. 92	3. 48	3. 28	4. 52
1920	3. 23	2. 83	2. 27	2. 06	1. 96	1. 82	1. 78	1. 58	1. 84	1. 86	1. 89	2. 01	2. 09
Av. 1914–1920	2. 99	2. 80	2. 91	2. 92	3. 02	3. 01	3. 10	3. 07	3. 09	3. 02	3. 19	3. 26	3. 03
1921	2. 03	1. 81	1. 81	1. 89	2. 13	2. 46	2. 57	2. 70	2. 80	2. 50	2. 59	2. 29	2. 19
1922	2. 28	2. 38	2. 48	2. 62	2. 80	3. 04	3. 07	3. 40	2. 94	2. 80	2. 70	2. 34	2. 58
1923	2. 38	2. 48	2. 42	2. 46	2. 50	2. 58	2. 49	2. 47	2. 46	2. 44	2. 47	2. 44	2. 44
1924	2. 26	2. 40	2. 58	2. 84	3. 15	3. 12	2. 97	2. 79	2. 80	2. 68	2. 49	2. 54	2. 63
1925	2. 59	2. 58	2. 56	2. 61	-----	-----	-----	-----	-----	-----	-----	-----	-----

Division of Statistical and Historical Research. The figures shown for 1909–1920 are averages of daily closing prices compiled from Annual Reports of the Minneapolis Chamber of Commerce; 1921–1925 are average of daily prices weighted by car-lot sales, compiled from Minneapolis Daily Market Record.

TABLE 138.—*Flaxseed, 4 per cent extraneous matter: Average price per bushel of 56 pounds at Buenos Aires, 1913, 1920–25*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1913	$1. 14	$1. 14	$1. 12	$1. 17	$1. 20	$1. 20	$1. 28	$1. 34	$1. 28	$1. 23	$1. 20	$1. 26	$1. 21
1920	2. 30	2. 64	3. 05	3. 09	3. 01	2. 92	2. 52	2. 48	2. 46	1. 93	1. 77	1. 54	2. 48
1921	1. 40	1. 33	1. 33	1. 15	1. 30	1. 40	1. 56	1. 65	1. 55	1. 33	1. 36	1. 44	1. 40
1922	1. 62	1. 91	1. 86	1. 89	1. 96	1. 84	1. 91	1. 58	1. 69	1. 84	1. 77	1. 82	1. 81
1923	1. 72	1. 83	1. 87	2. 02	1. 72	1. 94	1. 86	1. 62	1. 70	1. 94	1. 93	1. 78	1. 83
1924	1. 62	1. 66	1. 58	1. 58	1. 60	1. 68	1. 88	1. 98	1. 99	2. 12	2. 21	2. 26	1. 84
1925	2. 44	2. 41	2. 25	2. 09	2. 14	2. 11	2. 02	2. 12	2. 06	1. 94	1. 94	1. 83	2. 11
Av. 1921–1925	1. 76	1. 83	1. 78	1. 75	1. 74	1. 79	1. 85	1. 79	1. 80	1. 83	1. 84	1. 83	1. 80

Division of Statistical and Historical Research.
International Yearbook of Agricultural Statistics and Review of the River Plate.
Conversions to United States currency during 1913 at par of exchange; 1920–1925 at monthly average rates of exchange at New York as quoted in Federal Reserve Bulletins.

TABLE 139.—*Flaxseed: Monthly average cash prices per bushel of 56 pounds at Winnipeg, 1914–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Average
	Dolls.	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
1914	1.26	1.31	1.36	1.36	1.36	1.40	1.44	1.42	1.30	1.12	1.24	1.29	1.32
1915	1.57	1.61	1.70	1.78	1.78	1.56	1.48	1.42	1.44	1.63	1.80	1.84	1.63
1916	2.06	2.07	2.02	1.88	1.70	1.60	1.69	1.92	1.92	2.35	2.58	2.57	2.03
1917	2.60	2.60	2.60	2.90	3.10	2.86	2.76	2.34	3.12	3.05	3.13	3.05	2.84
1918	3.18	3.40	3.81	3.79	3.70	3.67	4.23	4.19	3.94	3.43	3.57	3.25	3.68
1919	3.05	3.07	3.46	3.65	3.94	4.59	5.83	5.64	4.74	4.04	4.52	4.64	4.35
1920	4.50	4.48	4.82	4.94	4.43	3.81	3.28	3.10	2.20	2.68	2.04	1.75	3.50
Av. 1914–1920	2.60	2.65	2.82	2.90	2.86	2.78	2.96	2.86	2.67	2.61	2.70	2.63	2.76
1921	1.65	1.60	1.54	1.33	1.51	1.61	1.67	1.80	1.80	1.63	1.63	1.60	1.61
1922	1.71	2.17	2.28	2.29	2.42	2.32	2.37	2.03	2.02	2.13	2.09	2.06	2.16
1923	2.15	2.31	2.39	2.80	2.43	2.30	2.18	2.05	2.04	2.08	2.04	1.95	2.23
1924	2.08	2.22	2.07	2.02	2.12	2.11	2.26	2.34	2.20	2.33	2.35	2.48	2.22
1925	2.68	2.63	2.50	2.35	2.44	2.37	2.22	2.40	2.37	2.33	2.29	2.26	2.40
Av. 1921–1925	2.05	2.19	2.16	2.16	2.18	2.14	2.14	2.12	2.09	2.10	2.08	2.07	2.12

Canada Year Book, except for periods September, 1917, to August, 1919, inclusive, and January, 1924, to date, which are from reports of the Grain Trade of Canada. Monthly averages of weekly range except for period September, 1917, to August, 1919, when daily quotations were averaged.

Conversion to United States currency beginning January, 1917, at rates of exchange as quoted by the Commercial and Financial Chronicle, and beginning January, 1920, at rates quoted by Federal Reserve Board.

TABLE 140.—*Linseed oil: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average, 1909–1913 [1]		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	866	[2] 2	374	2,036	555	1,144	739	1,108
Belgium	10,233	26,790	1,429	19,860	1,196	18,477	1,176	19,471
Netherlands	457	73,634	62	157,920	498	116,317	600	142,549
United Kingdom	58,018	58,013	9,052	133,029	9,184	84,379	5,902	68,477
PRINCIPAL IMPORTING COUNTRIES								
Australia	12,252		[3] 8,137	[3] 51	[3] 7,574	[3] 30		
Austria			5,131	112	6,982		8,355	
Austria-Hungary	16,367	6,542						
Brazil	8,726		9,399		8,058			
British India	3,430	1,967	2,792	290	2,001	748	2,161	545
Canada	2,279		1,058	94	1,968	59	964	98
Chile	2,854	15	1,260		2,249			
Czechoslovakia			1,629	9	483	[4]	1,015	
Denmark	[5]	[5]	819	391	359	1,081	578	67
Dutch East Indies	[6] 3,199		2,849		3,580		[7] 2,687	
Egypt	3,647		3,126	7	3,579	11	4,122	3
Finland	812		2,695		4,438		4,358	
France	3,382	10,931	8,362	3,090	11,225	5,728	14,927	5,503
Germany	5,231	4,377	64,458	3,394	47,691	673	68,508	865
Greece	246		915		746		877	
Italy	1,042	165	6,617	196	2,357	239	4,378	266
New Zealand	4,188		2,699		3,406	1	3,623	9
Norway	1,609	[8] 53	5,672	2	4,347	8	3,065	
Philippine Islands	809		852		874		839	
Sweden	933	5	119	467	57	287	368	81
Switzerland	7,825	16	8,584	29	9,574	2	12,471	11
Union of South Africa	3,449		2,930	1	4,459		4,349	
United States	2,605	4,105	144,137	2,703	43,097	3,013	13,247	2,387
Other countries	7,562	1,460	6,035	581	8,220	653	11,992	476
Total	162,041	188,075	301,192	324,271	188,757	232,850	171,301	241,916

Division of Statistical and Historical Research. Official sources except as otherwise noted. Conversions made on the basis of 7.5 pounds to the gallon.

[1] International Institute of Agriculture, Oleaginous Products and Vegetable Oils.
[2] Four-year average.
[3] Year beginning July 1.
[4] Less than 500 pounds.
[5] Not separately stated.
[6] Two-year average.
[7] Java and Madura only.
[8] Includes reexports.

TABLE 141.—*Linseed oil: Average price per gallon at New York, 1910–1925*

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
1910	$0.90	$0.90	$0.95	$0.95	$0.95	$0.96	$0.96	$0.91	$0.91	$0.89	$0.87	$0.80	$0.91
1911	.87	.88	.84	.71	.74	.71	.70	.73	.73	.76	.77	.66	.76
1912	.66	.62	.56	.43	.42	.46	.45	.44	.46	.45	.47	.49	.49
1913	.50	.47	.46	.48	.48	.48	.50	.51	.50	.50	.52	.59	.50
1914	.57	.49	.44	.45	.48	.56	.55	.58	.62	.63	.54	.50	.53
1915	.52	.55	.60	.61	.66	.72	.77	.76	.75	.67	.63	.71	.66
1916	.70	.82	.90	.92	.94	.95	.94	1.07	1.21	1.21	1.12	1.18	1.00
1917	1.25	1.18	1.15	1.21	1.29	1.29	1.41	1.57	1.57	1.57	1.64	1.88	1.42
1918	1.90	1.83	1.55	1.58	1.50	1.45	1.48	1.54	1.61	1.81	2.10	2.22	1.71
1919	2.04	1.79	1.75	1.82	1.77	1.77	1.80	1.83	1.69	1.65	1.52	1.41	1.74
1920	1.22	1.20	.98	.82	.78	.66	.66	.61	.70	.75	.75	.74	.82
Av. 1914–1920	1.17	1.12	1.05	1.06	1.06	1.06	1.09	1.14	1.16	1.18	1.19	1.23	1.13
1921	.74	.68	.67	.67	.72	.82	.82	.84	.90	.84	.89	.87	.79
1922	.88	.89	.88	.89	.89	.95	1.02	1.16	1.15	1.12	1.04	.97	.99
1923	.90	.94	.92	.92	.92	.91	.93	.90	.94	.94	.98	1.02	.94
1924	1.02	1.02	1.08	1.10	1.17	1.16	1.11	1.04	1.05	1.06	.98	1.02	1.07
1925	1.03	[1] 99	.96	.95									

Division of Statistical and Historical Research. Figures for 1910–1915 from Monthly Labor Review; 1916–1918 from War Industries Board Price Bulletin; 1919–1925 from Oil, Paint, and Drug Reporter, average of weekly range.

[1] Beginning October, 1925, prices were quoted on pound basis and have been converted to price per gallon by multiplying by 7.5.

TABLE 142.—*Linseed oil meal: Average price per ton at New York, 1910–1925*

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
	Dolls.	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
1910	37.46	36.90	35.50	35.50	35.50	35.50	35.50	34.12	33.75	33.50	34.33	35.71	35.27
1911	40.00	40.75	40.12	39.00	39.65	40.17	39.75	38.80	38.10	37.30	36.57	35.50	38.81
1912	35.38	35.30	34.38	32.75	32.34	31.90	29.20	27.86	28.12	28.25	29.40	30.12	31.25
1913	32.50	32.00	31.40	31.25	31.25	31.35	31.25	31.50	31.50	32.27	32.80	34.60	31.97
1914	33.62	32.83	32.75	35.10	38.75	41.00	37.13	35.50	32.50	32.50	35.31	37.71	35.39
1915	39.70	38.75	38.50	40.50	40.60	39.50	36.63	32.86	31.50	32.12	33.00	37.00	36.72
1916	39.50	42.28	45.45	47.50	48.50	48.50	48.33	47.00	49.44	49.25	51.08	53.50	47.53
1917	53.00	54.00	54.42	57.00	58.15	58.50	58.50	57.00	52.50	50.00	52.80	54.00	54.99
1918	55.00	56.00	55.75	56.50	62.15	63.35	65.50	65.50	70.50	75.50	82.30	90.25	66.52
1919	81.58	73.80	78.75	80.75	81.50	71.75	70.40	62.50	60.00	60.00	60.00	60.00	70.09
1920	60.00	60.00	56.80	52.00	48.38	43.12	43.75	46.00	36.25	37.00	41.60	46.38	47.65
Av. 1914–1920	51.77	51.09	51.77	52.76	54.00	52.25	51.46	49.48	47.53	48.05	50.87	54.19	51.27
1921	46.30	40.00	40.75	48.00	51.00	51.62	55.00	49.50	47.62	49.20	46.88	45.50	47.61
1922	43.50	43.50	(1)	(1)	53.50	54.12	46.30	43.25	42.50	38.00	38.00	38.00	
1923	45.00	45.62	43.88	45.00	43.75	42.00	42.00	40.50	40.00	39.90	43.75	45.00	43.03
1924	47.80	49.38	50.62	51.30	50.00	47.12	42.38	42.75	42.88	44.81	45.50	48.38	46.91
1925	48.38	46.60	50.00	51.00									

Division of Statistical and Historical Research. From Annual Statistical Review of New York Produce Exchange and the Oil, Paint, and Drug Reporter.

[1] Nominal.

TABLE 143.—*Linseed meal, bagged: Average price per ton at 11 markets, 1925*

Market	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dolls.	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
Boston	50.35	46.81	44.00	44.31	48.30	50.56	51.56	53.40	50.50	49.00	51.06	53.25
Buffalo	45.62	42.62	39.38	39.50	43.10	46.25	47.12	48.88		44.38	46.12	48.62
Chicago	47.60	44.38	40.50	40.75	44.30	45.88	46.62	47.50	45.50	44.05	46.00	47.12
Cincinnati	49.90	42.12	42.62	42.00	44.70	47.00	47.75	48.70	47.50	46.50	47.75	48.67
Kansas City	51.55	48.25	45.50	43.75	45.60	47.25	47.50	47.08	47.47	46.78	47.80	49.12
Minneapolis	47.00	44.50	39.88	38.75	41.30	43.00	43.31	43.80	42.88	42.30	42.88	44.70
Omaha	51.42	49.25	45.12	43.50	47.00	48.33	47.50	49.40	47.98	47.22	48.58	49.32
Philadelphia	49.74	46.44	43.38	43.80	47.55	50.06	51.19	53.00	49.29	48.24	50.34	52.34
Pittsburgh	49.80	46.56	42.94	42.24	46.12	48.75	49.56	51.62	48.92	47.03	48.62	50.62
St. Louis	49.50	46.38	42.25	42.12	44.50	46.62	46.50	48.00				
San Francisco	49.00	48.00	45.50	42.75	45.00	47.00	46.50	45.60		47.75	46.83	

Division of Statistical and Historical Research. Compiled from reports of the Hay, Feed, and Seed Division.

RICE

TABLE 144.—*Rice, rough: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Domestic exports, fiscal year beginning July 1 [2]	Net imports, fiscal year beginning July 1 [2]
	Acres	*Bush. of 45 lbs.*	*Bushels*	*Cents*	*Dollars*	*Dolls.*	*Bushels*	*Bushels*
1909	*610,000*	33.8	20,607,000	79.5	16,392,000	26.87	4,487,287	7,820,643
1910	723,000	33.9	24,510,000	67.8	16,624,000	22.99	5,134,355	7,292,960
1911	696,000	32.9	22,934,000	79.7	18,274,000	26.26	5,824,598	6,467,505
1912	723,000	34.7	25,054,000	93.5	23,423,000	32.40	5,672,996	7,539,206
1913	827,000	31.1	25,744,000	85.8	22,090,000	26.71	5,871,289	9,806,684
Av. 1909–1913	716,000	33.2	23,770,000	81.5	19,361,000	27.05	5,398,105	7,785,400
1914	694,000	34.1	23,649,000	92.4	21,849,000	31.48	7,334,389	7,848,181
1915	803,000	36.1	28,947,000	90.6	26,212,000	32.64	9,506,099	6,931,061
1916	869,000	47.0	40,861,000	88.9	36,311,000	41.78	12,315,486	6,180,934
1917	981,000	35.4	34,739,000	189.6	65,879,000	67.16	11,885,265	13,095,243
1918	1,119,000	34.5	38,606,000	191.8	74,042,000	66.17	12,892,196	5,309,014
1919	1,063,000	39.5	41,985,000	266.6	111,913,000	105.28	22,899,774	3,001,362
1920	1,336,000	39.0	52,066,000	119.1	62,036,000	46.43	22,449,930	1,267,391
Av. 1914–1920	981,000	38.0	37,265,000	152.7	56,892,000	58.01	14,183,306	6,233,312
1921	921,000	40.8	37,612,000	95.2	35,802,000	38.87	33,834,616	721,411
1922	1,055,000	39.2	41,405,000	93.1	38,562,000	36.55	21,583,817	1,168,077
1923	895,000	37.7	33,717,000	110.2	37,150,000	41.51	17,245,060	809,252
1924	849,000	39.2	33,249,000	138.2	45,956,000	54.07	12,141,853	1,332,315
1925 [3]	904,000	37.6	33,959,000	153.9	52,246,000	57.79		

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Based upon farm price Dec. 1.

[2] Commerce and Navigation of United States, 1909–1918, and the June issue of Monthly Summaries of Foreign Commerce, 1919–1925. Domestic exports here include also shipments from the United States to Porto Rico and Hawaii; net imports are total imports minus reexports. Bushels are computed from pounds as reported in original by assuming 1 bushel of rough rice to yield 27⅞ pounds of cleaned rice.

[3] Preliminary.

TABLE 145.—*Rice, rough: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
South Carolina	5	5	70	80	98	100
Georgia	3	3	51	51	71	74
Mississippi	1	1	10	18	14	20
Arkansas	164	174	7,003	8,039	9,664	12,058
Louisiana	440	450	15,224	14,985	20,705	22,927
Texas	146	168	6,526	6,048	8,158	9,012
California	90	103	4,365	4,738	7,246	8,055
United States	849	904	33,249	33,959	45,956	52,246

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 146.—*Rice, rough: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
S. C.	25.6	21.0	11.7	25.0	30.0	22.7	26.0	24.3	14.0	25.0	23.0	24.0	25.0	23.0	25.0	26.0	25.0	14.0	16.0	21.2
Ga.	23.9	22.0	26.8	30.0	32.0	26.9	28.0	29.3	20.0	30.0	26.0	24.0	26.0	26.2	26.0	24.1	22.7	17.0	17.0	21.4
Fla.	25.0	21.0	25.0	25.0	25.0	24.2	25.0	25.0	25.0	26.0	24.0	26.0	24.0	25.0	22.0	25.0	23.0	24.0	----	----
Miss.	30.0	30.0	36.0	35.0	28.0	31.8	30.0	25.0	28.0	30.0	23.0	29.1	31.0	28.0	20.0	19.0	18.0	10.0	18.0	17.0
Ark.	40.0	40.0	39.0	37.5	36.0	38.5	39.8	48.4	50.5	41.0	37.2	46.0	49.0	44.7	53.5	48.0	39.5	42.7	46.2	46.0
La.	33.8	34.4	31.5	33.5	29.0	32.4	32.1	34.2	46.0	31.0	28.8	35.2	36.0	34.8	36.0	36.0	33.5	34.6	33.3	34.7
Tex.	34.0	33.0	34.3	35.5	32.0	33.8	33.8	30.5	45.0	30.0	32.0	32.0	34.0	33.9	36.1	31.2	40.0	44.7	36.0	37.6
Calif.	----	33.0	40.0	50.0	48.0	----	53.3	66.7	59.0	68.0	65.5	60.0	51.0	60.5	54.0	55.0	53.5	48.5	46.0	51.4
U. S.	33.8	33.9	32.9	34.7	31.1	33.3	34.1	36.1	47.0	35.4	34.5	39.5	39.6	37.9	40.8	39.2	37.7	39.2	37.6	38.9

Division of Crop and Livestock Estimates.

TABLE 147.—*Rice, rough: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost and freeze	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	4.6	0.1	----	----	----	1.1	6.6	----	12.4	2.7	0.9	0.2	0.1	0.7	17.0
1910	7.2	1.7	----	0.1	----	.1	1.0	----	10.1	3.4	.4	1.2	(1)	2.2	17.3
1911	6.5	3.2	----	.2	----	.7	----	----	10.6	.7	.6	.5	.1	2.0	14.5
1912	3.1	1.1	6.2	----	----	.6	.5	0.1	11.6	2.5	2.0	.5	.6	2.4	19.6
1913	3.9	14.3	5.8	----	----	(1)	----	----	24.0	.1	.7	----	----	3.7	28.5
1914	5.2	2.2	.1	----	(1)	.6	.6	1.4	10.1	.1	1.3	(1)	.3	5.7	17.5
1915	7.0	.6	.1	.3	----	.4	8.1	.2	16.7	.4	.2	----	(1)	2.1	19.4
1916	4.8	.2	----	.3	----	.3	.2	.4	6.2	1.1	.3	----	.2	1.7	9.5
1917	17.3	.7	.1	1.5	.2	.1	.1	----	20.0	.5	.2	.5	.1	4.1	25.4
1918	7.2	7.1	2.4	.2	----	.4	1.5	----	18.8	.3	1.1	(1)	----	1.5	21.7
1919	1.0	12.8	1.1	.3	----	.1	2.6	.5	18.4	.3	.5	.7	.1	(1)	20.0
1920	.5	8.0	.4	----	----	1.2	.2	----	10.3	3.1	1.6	----	----	1.7	16.7
1921	4.5	.2	(1)	.3	----	.2	.1	----	5.3	1.7	2.7	----	.1	2.0	11.8
1922	3.8	4.2	----	.1	----	.1	----	----	8.2	3.4	1.0	.1	----	1.4	14.1
1923	2.8	13.9	.5	1.5	----	.1	.3	.5	19.6	.7	1.0	.1	----	.6	22.0
1924	19.1	----	----	2.1	----	.5	.3	----	22.0	1.0	.4	.1	----	.4	23.9

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 148.—*Rice: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
United States	716	1,055	895	892	995	922	1,105	1,046	1,057	1,000
Mexico	[2] 162	54	53	54		605	824	821	830	
Hawaii	[3] 9									
CENTRAL AND SOUTH AMERICA AND WEST INDIES										
Guatemala		8	8	8			485	510		
Salvador			14	13				972	1,047	
Costa Rica	[3] 7	15	18	19						
British Guiana	36	49	35	29		1,496	917	1,216	1,904	
Porto Rico	[3] 16					269				
Trinidad and Tobago	[4] 12	10	8	8						
EUROPE										
France	1	[5]								
Spain	94	114	114	116		3,188	3,275	2,896	3,467	
Portugal		15	12	20			1,856		1,165	
Italy	358	294	303	340	346	1,806	2,150	2,340	2,365	2,439
Yugoslavia	[6] 5	5	5	4	4					
Bulgaria	7	7	9	10	13					
Turkey	2									
Russia (Northern Caucasia)	[7] 2									
NORTH AFRICA										
French West Africa:										
French Guinea										
French Senegal		124	124	124			1,262	1,240		
Sudan			79					775		
Sierra Leone		400	351	400			588	632	622	
Egypt	257	50	186	255	[8] 101	2,132	1,100	1,626	1,611	
ASIA										
Turkey	151									
India	67,004	82,401	78,932	80,575	81,461	957	917	800	862	835
Andaman and Nicobar		4	3							
British North Borneo		55	62	64			754	745		
Brunei			2	2						
French Establishments in India	40	46	46	43		657	704	625	658	
Russia	572					584				
Japanese Empire:										
Japan	7,300	7,698	7,714	7,701	7,739	2,163	2,477	2,258	2,332	2,416
Chosen (Korea)	2,905	3,817	3,801	3,862	3,663	1,133	1,226	1,243	1,064	1,275
Taiwan (Formosa)	1,193	1,263	1,253	1,310	1,357	1,184	1,355	1,220	1,457	1,434
Kwantung	1	1								
French Indo-China	[7] 8,550	12,367	11,401	11,787	[9] 11,960	858	638	633	667	[9] 590
Siam	4,660	5,936	5,843	6,416	7,006	1,168	1,003	1,033	1,049	
Federated Malay States	[7] 115	197	176	178		894	650	684	702	
Unfederated Malay States		364	374	401			745	829	715	
Straits Settlements	93	63	77	72			1,145	1,066	1,187	
Philippine Islands	2,753	4,105	4,141	4,294		423	653	653	599	
Ceylon	695	850	745	800	800	587	526	581	617	617

[1] Averages for European countries are estimates for the territory within present boundaries.
[2] Three years only.
[3] One year only.
[4] Four years only.
[5] Less than 500 acres.
[6] Pre-war average.
[7] Two years only.
[8] Total acreage estimated from area under summer or main crop which was 91,000 acres this year compared with 231,000 in 1924. The acreage under this crop in 1924 was 90 per cent of the total acreage under rice in Egypt.
[9] Total acreage estimated from that under rice in Annam, Cambodia, Laos, Tonking, and Cochin-China which was estimated at 9,197,400 acres in 1925 compared with 9,064,000 in 1924. In 1924 the acreage in these provinces comprised 76.9 per cent of the acreage under rice in Indo-China.

TABLE 148.—*Rice: Acreage and yield per acre in specified countries average 1909–1913, annual 1922–1925*—Continued

Country	Acreage					Yield per acre				
	Average 1909–1913	1922	1923	1924	1925 preliminary	Average 1909–1913	1922	1923	1924	1925 preliminary
SOUTHERN HEMISPHERE	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Peru	[2] 131	86				639	1,078			
Brazil		599	849	1,344	1,325		1,952	1,168	822	
Paraguay		2								
Argentina	[4] 11	16	9	13			1,293			
Belgian Congo		18	30				196	204		
Madagascar	[4] 979		1,284	1,285		916		1,102	1,165	
Java and Madura:										
Irrigated	5,953	7,319	7,287	7,403		1,005	938	938	956	
Nonirrigated		859	879	955			484	484	523	
Total Java and Madura		8,178	8,166	8,358	8,234		890	889	906	
Australia	[5]	[5]								
Fiji Islands	11	13	10	10						
Total countries reporting all periods listed	93,656	115,743	111,087	113,952	115,445					

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture. Yield has not been calculated when total acreage is below 15,000 acres. Acreage figures in most cases are for crops harvested during the calendar year in the Northern Hemishpere and the succeeding harvest in the Southern Hemisphere.

[2] Three years only. [4] Four years only. [5] Less than 500 acres.

TABLE 149.—*Rice, in terms of cleaned rice: Production in specified countries, average 1909–1913 annual 1922–1925*

[Thousand pounds—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE					
NORTH AMERICA					
United States	660,272	1,165,694	936,583	943,222	994,722
Mexico	[2] 98,016	44,489	43,498	44,827	31,272
Hawaii	[3] 25,820				
CENTRAL AND SOUTH AMERICA AND WEST INDIES					
Guatemala	[2] 2,208	3,882	4,083		
Salvador			13,609	13,611	
British Guiana	53,865	44,957	42,560	55,226	
Dutch Guiana	2,254	13,203	11,040	17,334	
Porto Rico	[3] 4,298				
Trinidad and Tobago			3,460	3,457	
EUROPE					
France	2,017	75			
Spain	299,703	373,339	330,097	402,207	416,389
Portugal		27,810	21,205	23,302	21,438
Italy	646,465	631,985	708,874	804,135	843,747
Yugoslavia	[4] 2,586	2,941	3,376	2,716	
Bulgaria	8,612	7,946	11,317	13,238	14,550
Russia (Northern Caucasia)	[2] 1,218				

[1] Averages for European countries are estimates for territory within present boundaries.
[2] Two-years only.
[3] One year only.
[4] Pre-war average.

TABLE 149.—*Rice, in terms of cleaned rice: Production in specified countries, average 1909–1913, annual 1922–1925*—Continued

[Thousand pounds—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1925	1925 preliminary
NORTH AFRICA					
French West Africa:					
French Senegal		156,499	153,778		
Upper Volta			6,800	5,400	
Sudan			61,200		
Sierre Leone		235,062	221,821	248,900	
Egypt	547,972	54,997	302,466	410,792	
Kenya Colony		464			
ASIA					
India	64,144,192	75,523,840	63,163,520	69,440,000	67,999,935
Andaman and Nicobar		2,780	2,478		
French Establishments in India	26,268	32,378	28,745	28,305	
British North Borneo		41,496	46,191		
Brunei		1,728	1,521	755	
Russia	334,061				
China			50,056,000		
Japanese Empire:					
Japan	15,787,276	19,067,307	17,417,935	17,960,713	18,759,000
Chosen (Korea)	3,292,776	4,679,313	4,724,513	4,110,476	4,669,412
Taiwan (Formosa)	1,412,504	1,710,832	1,528,476	1,909,040	1,945,777
Kwantung	1,074	3,094			
French Indo-China	[2] 7,332,350	7,893,012	7,212,580	7,859,099	[5] 7,199,000
Siam	[6] 4,257,663	5,953,997	6,034,465	6,733,006	6,732,654
Federated Malay States	79,015	127,971	120,405	125,026	
Unfederated Malay States		271,003	310,008	286,901	
Straits Settlements		72,143	82,118	85,454	
Philippine Islands	1,165,293	2,681,305	2,703,137	2,570,580	1,836,000
Ceylon	407,784	447,299	433,016	493,400	493,400
SOUTHERN HEMISPHERE					
Ecuador			[7] 41,000	[7] 14,000	
Peru	[2] 83,700	92,681	66,000	61,000	
Brazil	[3] 89,798	1,169,050	991,273	1,105,021	
Argentina	[2] 8,302	20,691	6,250	16,006	
Belgian Congo		3,525	6,124		
Southern Rhodesia		34	11		
Nyasaland	1,191	548	319		
Madagascar	[8] 896,300		1,415,299	1,496,951	
Java and Madura:					
Irrigated	5,982,693	6,864,235	6,831,953	7,076,171	7,322,393
Nonirrigated	[9] 450,000	415,616	425,080	499,000	
Australia	[2] 19	8			
Fiji Islands	23,377	8,520	10,175	4,567	
Total all countries reporting for all periods listed	105,945,599	127,460,209	112,505,044	120,859,114	119,258,825
Estimated world total, exclusive of China [10]	109,000,000	132,000,000	118,000,000	127,000,000	

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture. Production figures in most cases are for crops harvested in the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Averages for European countries are estimated for territory within present boundaries.
[2] Two years only.
[3] One year only.
[5] Total production estimated from production reported in Annam, Laos, Cochin-China and the first crop in Cambodia and Tonking, aggregating 5,355,734,000 pounds in 1925 compared with 5,846,079,000 in 1924. In 1924 the production in these provinces amounted to 74.4 per cent of the total crop produced in Indo-China.
[6] Production estimated by multiplying acreage by an average yield for years 1920–21 to 1923–24 for which years the Ministry of Lands and Agriculture gives official estimates of both area and production.
[7] Unofficial.
[8] Three-years only.
[9] Rough estimate for nonirrigated crop also included in total.
[10] Unofficial estimates of the Chinese crop are as follows: 70,219,000,000 pounds in 1917; 52,788,000,000 in 1920 and 50,056,000,000 in 1923.

TABLE 150.—*Rice, in terms of cleaned rice: World production, 1909–1925*

[Million pounds—i. e., 000,000 omitted]

Year	Production for countries reporting, all years [1]	Estimated world production, exclusive of China [2]	Production in chief producing countries [3]						
			India	Japan	Indo-China	Java and Madura [4]	Siam [5]	Chosen	Philippines
1909	88,498	107,000	63,869	16,474	-------	5,723	3,734	2,343	-------
1910	87,201	106,000	64,552	14,650	-------	5,738	3,466	3,269	1,164
1911	88,767	110,000	63,943	16,246	-------	6,170	4,533	3,634	1,267
1912	87,683	109,000	63,802	15,778	6,614	5,842	4,561	3,413	717
1913	89,486	113,000	64,555	15,789	8,051	6,440	4,994	3,804	1,512
1914	87,970	113,000	61,109	17,909	9,521	6,339	4,708	4,439	1,404
1915	99,926	124,000	73,315	17,569	7,921	6,451	4,786	4,036	1,100
1916	105,798	129,000	78,521	18,363	6,733	6,409	5,011	4,377	1,289
1917	107,084	131,000	80,638	17,142	6,313	6,742	5,133	4,261	1,745
1918	80,574	105,000	54,526	17,185	6,302	6,409	4,642	4,765	2,213
1919	100,916	123,000	71,743	19,106	6,532	7,435	3,114	3,974	2,089
1920	90,610	117,000	61,963	19,858	6,284	6,250	5,868	4,639	2,247
1921	99,811	127,000	74,278	17,336	7,931	5,624	5,806	4,463	2,565
1922	104,185	132,000	75,524	19,067	7,893	6,864	5,954	4,679	2,681
1923	89,992	118,000	63,164	17,418	7,213	6,832	6,034	4,725	2,703
1924	97,610	127,000	69,440	17,961	7,859	7,076	6,733	4,110	2,571
1925, preliminary	----------	----------	68,000	18,759	[6] 7,199	---------	6,733	4,669	1,836

Division of Statistical and Historical Research. The figures for each year include the crop harvested in the Northern Hemisphere within the calendar year and the following harvest in the Southern Hemisphere.

[1] Includes India, Japan, Java and Madura, Formosa, Italy, Spain, and Dutch Guiana.

[2] Revised figures based on additional information since the publication of the 1924 Yearbook of the United States Department of Agriculture due principally to changes in the figures for Java and Madura and Siam.

[3] China would rank among the chief producing countries, but owing to lack of official statistics has been omitted.

[4] Irrigated rice. The changes in the figures for Java and Madura from those previously reported are based on official information recently received as to the percentage of cleaned rice obtained from paddy and rough rice.

[5] Estimated figures obtained by multiplying acreage under rice as classified for revenue purposes up to 1912 and acreage as reported by the Department of Land and Agriculture from 1912 on by an average yield for the years 1920–1923 for which years official estimates have been published of areas, yield, and total production.

[6] Estimated.

TABLE 151.—*Rice, rough: Receipts at New Orleans, 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
	Sacks	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*
1909	283,974	322,339	217,189	117,975	77,507	151,750	85,257	62,776	34,947	81,723	65,093	8,817	1,509,347
1910	178,691	320,845	169,886	110,298	116,610	109,123	57,123	51,196	57,742	64,059	23,499	30,689	1,289,761
1911	114,011	233,663	233,217	191,919	81,499	135,770	107,650	28,718	5,885	3,868	510	19,968	1,156,678
1912	112,153	185,820	189,805	235,008	190,303	79,293	16,056	11,309	2,587	6,703	24,947	20,507	1,074,491
1913	207,267	156,916	116,727	196,066	146,384	149,057	105,964	45,068	49,118	26,253	10,664	7,546	1,217,030
1914	195,206	224,773	152,665	214,241	194,462	62,061	86,702	38,750	4,684	3,575	10,122	8,496	1,195,737
1915	167,961	297,334	199,521	252,763	87,759	125,526	73,025	84,838	47,153	11,422	1,446	973	1,349,721
1916	221,968	288,260	253,145	233,276	113,264	30,991	93,454	146,502	64,833	11,966	10,602	9,987	1,478,248
1917	160,843	255,102	249,538	178,079	59,645	34,144	58,814	132,926	56,054	30,350	1,882	4,524	1,221,901
1918	127,893	345,669	164,037	99,732	76,789	92,246	89,522	51,048	54,581	47,964	23,373	16,724	1,189,578
1919	115,840	268,561	207,085	111,712	153,265	129,527	60,616	46,042	52,098	44,786	54,554	32,900	1,277,046
1920	172,155	247,671	281,608	209,144	131,886	113,196	50,944	142,962	126,032	227,415	119,643	86,771	1,909,427
1921	221,559	173,694	143,017	83,941	193,487	104,856	101,621	232,778	85,551	24,236	20,966	16,378	1,402,084
1922	95,959	178,308	253,557	194,110	136,372	86,853	51,284	17,365	96,324	19,721	39,402	43,424	1,212,679
1923	43,257	98,896	119,755	117,374	108,164	86,844	31,873	38,852	9,559	6,145	674	742	662,135
1924	83,872	174,271	193,047	165,857	119,084	79,519	74,286	13,145	14,323	6,338	9,162	6,408	939,312
1925	129,073	128,641	87,133	78,948	141,345	-------	-------	-------	-------	-------	-------	-------	---------

Division of Statistical and Historical Research. Compiled from annual reports of the New Orleans Board of Trade.

A sack of rough rice contains 162 pounds.

TABLE 152.—*Rice, rough: Stocks at New Orleans as reported at the end of each month, 1909–1925*

Year beginning August	Aug. 31	Sept. 30	Oct. 31	Nov. 30	Dec. 31	Jan. 31	Feb. 28 or 29	Mar. 31	Apr. 30	May 31	June 30	July 31
	Sacks	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*	*Sacks*
1909	187,548	223,616	250,743	228,862	244,030	276,499	236,948	184,915	170,713	154,766	150,993	120,129
1910	168,849	256,155	249,329	206,309	222,167	188,907	185,843	139,147	121,652	100,316	67,891	76,114
1911	42,523	104,491	102,064	121,966	117,705	113,245	137,887	79,367	74,114	77,982	67,568	47,564
1912	55,951	49,245	81,190	72,760	113,776	116,737	79,015	46,160	27,555	16,690	14,015	8,145
1913	62,952	30,342	21,008	33,491	70,882	57,008	44,485	32,582	14,907	17,198	14,676	6,673
1914	21,202	62,574	79,746	97,410	128,376	112,480	118,566	102,266	91,882	80,527	37,990	14,801
1915	72,546	75,416	73,052	131,181	109,918	137,555	130,693	107,135	75,338	39,642	26,457	14,091
1916	69,303	89,995	81,465	101,734	78,093	62,228	62,966	62,880	27,776	8,887	4,419	1,162
1917	50,517	69,592	58,967	67,802	58,607	75,695	63,233	58,809	19,344	5,062	3,693	368
1918	28,751	128,751	118,040	117,138	52,614	24,404	43,607	43,789	41,869	50,607	9,117	13,606
1919	38,307	66,400	53,647	39,733	51,586	41,709	46,029	37,192	28,037	22,266	15,869	6,428
1920	70,906	125,650	145,054	99,932	58,082	36,712	30,466	46,089	49,172	60,652	40,758	24,158
1921	38,499	40,419	37,465	35,825	69,664	68,660	66,778	63,200	76,068	67,151	48,265	21,184
1922	31,218	37,942	35,848	56,667	43,668	56,926	64,249	54,061	51,526	34,074	37,879	41,967
1923	41,967	60,013	40,686	18,446	26,445	34,280	48,031	34,897	46,920	36,241	35,149	34,188
1924	91,065	34,244	41,802	53,854	85,701	60,219	70,182	38,260	24,966	22,956	19,179	3,846
1925	23,636	20,511	16,528	26,923	39,734							

Division of Statistical and Historical Research. Compiled from annual reports of the New Orleans Board of Trade.

A sack of rough rice contains 162 pounds.

TABLE 153.—*Rice, clean: Stocks at New Orleans as reported at the end of each month, 1909–1925*

Year beginning August	Aug. 31	Sept. 30	Oct. 31	Nov. 30	Dec. 31	Jan. 31	Feb. 28 or 29	Mar. 31	Apr. 30	May 31	June 30	July 31
	Pockets	*Pockets*	*Pockets*	*Pockets*	*Pockets*	*Pockets*	*Pockets*	*Pockets*	*Pockets*	*Pockets*	*Pockets*	*Pockets*
1909	76,132	94,008	125,794	101,543	111,286	112,279	120,021	92,395	65,504	111,042	109,505	139,959
1910	122,747	92,394	94,792	107,576	106,429	104,536	97,634	80,190	65,679	83,126	76,295	60,288
1911	76,236	59,552	95,387	142,990	172,236	206,126	240,708	273,925	257,546	205,144	161,738	202,916
1912	161,317	123,701	179,323	173,897	197,744	219,185	225,157	191,090	159,795	145,754	93,363	65,289
1913	73,386	69,125	38,589	73,403	107,334	118,686	136,081	104,240	113,723	117,070	130,651	88,135
1914	55,858	78,427	70,668	93,456	129,561	164,413	224,043	205,858	170,745	159,009	140,687	124,779
1915	62,172	77,563	84,685	126,921	183,242	219,332	252,751	257,194	268,454	243,710	241,344	202,906
1916	143,196	117,844	157,769	243,810	252,161	157,092	123,371	199,188	258,342	205,059	154,870	126,552
1917	109,947	96,790	143,409	227,715	270,364	237,150	147,517	126,814	106,975	72,192	27,618	3,913
1918	27,750	67,082	76,091	79,973	107,798	117,467	185,070	206,819	199,396	136,995	184,242	111,459
1919	85,554	152,194	243,152	243,850	280,245	363,442	421,258	399,979	257,079	248,667	201,019	166,394
1920	172,419	174,156	175,928	277,228	400,806	359,321	201,871	158,452	142,796	180,450	179,086	86,504
1921	114,635	128,099	135,454	114,594	144,587	177,098	180,096	294,626	315,960	244,508	308,557	238,899
1922	123,463	91,028	97,561	124,710	193,886	276,407	172,764	152,171	151,443	158,965	189,106	130,240
1923	91,843	73,990	95,516	120,592	167,105	187,581	177,306	135,323	139,330	116,136	94,993	70,836
1924	86,848	138,446	171,893	183,984	254,731	242,992	272,666	254,347	214,907	133,523	116,281	62,345
1925	86,641	128,788	98,860	115,322	151,720							

Division of Statistical and Historical Research. Compiled from annual reports of the New Orleans Board of Trade.

A pocket of cleaned rice contains 100 pounds.

TABLE 154.—*Rice: International trade, average 1909-1913, annual 1922-1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended December 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Brazil	24,753	[1] 102	8	83,478	5	75,293		14,438
British India	278,272	5,337,516	302,760	4,836,325	349,213	4,554,264	[2] 164,338	[2] 5,108,366
Chosen (Korea) [3]	17,830	130,446	1,636	827,989	7,934		10,314	
French Indo-China	41	2,288,040	[3] 66	[3] 2,382,823	[3] 103	[3] 2,104,364	[3] 89	[3] 1,969,316
Italy	4,415	142,239	1,484	230,017	2,647	190,338	4,447	378,387
Siam		1,928,507	21	2,810,004	4	2,894,440	1	2,496,837
Spain	5,467	18,063	86	53,756	18	149,446	27	[3] 167,160
United States	209,814	16,215	62,371	411,542	48,520	348,839	40,737	154,509
PRINCIPAL IMPORTING COUNTRIES								
Austria			47,068	1,220	47,898	627	50,572	[3] 109
Austria-Hungary	183,411	461						
Belgium	180,830	99,948	69,620	10,487	80,461	1,549	79,758	1,533
British Malaya	[3] 1,999,672	[3] 1,299,475	1,349,258	522,892	1,268,645	455,833	1,308,298	420,458
Canada	32,109	2,354	41,403	335	53,027	2,278	37,254	3,115
Ceylon	821,654		850,981	9	881,441	5	876,700	46
China	704,992		1,576,640	3,713	1,846,499	5,193	1,759,741	5,591
Cuba	262,207		391,606		449,186		450,933	
Czechoslovakia			90,859	107	92,279	37	113,788	71
Dutch East Indies	1,178,111	132,400	1,377,099	48,524	920,919	64,890	[4] 535,449	[5] [4] 83,585
Egypt	98,690	53,700	86,577	39,551	113,454	23,730	39,985	72,739
France	517,861	79,087	370,772	71,437	646,721	77,751	431,499	66,529
Germany	913,772	396,628	417,858	33,399	346,775	4,873	1,022,773	347,494
Hongkong			2,324,954	2,034,358	2,628,404	2,285,810	2,187,930	1,760,410
Hungary			26,515	[3] 336	25,279	[3] 468	[3] 43,549	[3] 296
Japan	655,676	61,936	1,014,637	13,532	589,851	10,447	1,089,290	8,182
Mauritius	132,543	[5] 1,446	145,635		138,144		97,728	
Netherlands	778,682	476,276	162,152	29,249	186,868	50,771	251,901	149,101
Philippine Islands	412,781	[6] 4	93,243	892	146,494	1,390	333,134	479
Russia	250,461	5,746	[3] 104,906		[3] 21,559	[3] 24		[3] 7
United Kingdom	768,853	90,564	305,281	20,483	621,671	23,086	788,940	22,976
Other countries	1,007,053	159,692	1,260,805	208,708	1,527,167	286,929	1,501,352	237,492
Total	11,439,950	12,720,845	12,476,301	14,675,166	13,041,186	13,612,675	13,220,527	13,469,226

Division of Statistical and Historical Research. Official sources except where otherwise noted.

Mostly cleaned rice. Under rice is included paddy, unhulled, rough, cleaned, polished, broken and cargo rice, in addition to rice flour and meal. Rice bran is not included. Rough rice, or paddy, where specifically reported, has been reduced to terms of cleaned rice at the ratio of 162 pounds of rough or unhulled to 100 pounds of cleaned. "Rice, other than whole or cleaned rice," in the returns of the United Kingdom is not considered paddy, since the chief sources of supply indicate that it is practically all hulled rice. Cargo rice, a mixture of hulled and unhulled, is included without being reduced to terms of cleaned. Broken rice and rice flour and meal are taken without being reduced to terms of whole cleaned rice.

[1] Three-year average.
[2] Twelve months' sea-trade, three months' land-trade.
[3] International Institute of Agriculture.
[4] Java and Madura only.
[5] Two-year average.
[6] One year only.

TABLE 155.—*Rice, rough: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
South Carolina	85	92	90	90	195	195	300	290	179	97	115	120	140	125	119
Georgia	82	89	88	87	195	175	275	225	162	92	117	132	140	145	125
Florida	75	70	75	75	195	140	263	175	142	97	130	135	140	150	130
Mississippi	77	85	88	80	190	150	190	200	140	118	110	115	136	110	118
Arkansas	85	90	95	96	190	180	240	131	146	92	88	112	138	150	116
Louisiana	80	93	90	90	190	195	271	110	148	86	89	107	136	153	114
Texas	81	92	89	86	200	197	280	125	153	101	90	115	125	149	116
California		100	90	78	175	190	267	121	146	115	110	112	166	170	135
United States	81.2	92.4	90.6	88.9	189.6	191.8	266.6	119.1	148.4	95.2	93.1	110.2	138.2	153.9	118.1

Division of Crop and Livestock Estimates.

TABLE 156.—*Rice, rough: Wholesale price per 162 pounds at New Orleans, 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	3.50	2.98	2.80	2.75	2.62	3.05	2.75	2.50	2.90	2.86	2.55	3.90	2.93
1910	2.80	2.28	2.28	2.36	2.43	2.50	2.30	2.46	2.16	2.35	2.25	2.75	2.41
1911	2.82	2.50	2.68	2.78	2.66	2.92	3.30	3.52	3.92	3.82	3.55	4.28	3.23
1912	3.58	3.38	2.66	3.20	3.38	3.53	3.59	3.50	2.95	3.62	3.25	3.42	3.34
1913	3.75	3.40	3.16	4.00	2.75	3.10	2.70	2.20	2.62	3.12	3.08	3.38	3.10
1914	4.32	3.90	2.65	2.75	3.38	3.18	3.60	3.68	3.75	3.56	3.55	3.38	3.48
1915	3.20	2.86	2.66	3.13	2.82	2.78	3.35	3.56	3.62	2.73	.....	3.10	.....
1916	3.91	3.06	3.18	3.44	3.30	3.32	3.53	3.72	5.00	6.33	5.50	6.40	4.22
1917	6.62	6.50	6.00	6.88	7.10	7.25	7.63	8.31	7.70	8.53	7.88	7.12	7.29
1918	7.20	7.00	6.25	6.12	6.25	5.88	.....	.....	.....	7.38	.....	9.88	.....
1919	13.00	9.50	8.38	8.48	8.38	10.51	.....	.....	9.62	8.88	9.88	.....	.....
1920	6.38	5.88	4.75	4.75	.....	.....	2.90	3.02	.....	3.08	2.88	2.78	.....
1921	3.52	3.62	3.58	3.24	.....	4.11	3.58	4.01	3.35	3.22	3.65	4.01	.....
1922	3.89	3.00	3.11	4.00	3.58	3.57	3.41	4.03	.....	3.25	3.98	.....	.....
1923	4.44	3.96	3.88	4.18	4.28	4.02	4.03	4.61	4.84	4.25	.....	.....	.....
1924	4.78	4.22	4.47	5.02	6.12	5.80	.....	.....	5.54	5.01	5.95	5.95	.....
1925	5.54	4.53	4.50	4.72	5.32	.....	.....	.....	.....	.....	.....	.....	.....

Division of Statistical and Historical Research.
Compiled from annual reports of the New Orleans Board of Trade, average of monthly range.

TABLE 157.—*Rice, rough: Wholesale price per 162 pounds at Lake Charles, La., 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	.....	2.38	2.75	2.50	2.40	2.50	2.50	2.30	2.10	2.05	2.18	2.12
1910	2.22	2.42	2.28	2.15	2.25	2.25	2.18	2.18	2.25	2.25	.....	.....
1911	2.45	2.45	2.58	2.62	2.82	.....	.....	.....	.....	.....	.....	.....
1912	.....	.....	.....	.....	.....	3.16	3.10	.....	.....	.....	.....	.....
1913	.....	2.65	2.98	2.88	2.82	2.90	2.40	2.50	2.75	3.02	3.22	3.28
1914	3.78	4.02	3.50	3.00	2.78	3.48	3.75	3.81	.....	.....	.....	.....
1915	3.26	3.26	3.08	3.41	3.32	3.00	3.28	3.32	3.51	3.64	4.00	.....
1916	.....	2.99	3.02	3.50	3.42	3.05	3.38	3.72	4.90	5.55	.....	5.75
1917	6.09	6.00	6.72	6.52	6.27	.....	.....	.....	.....	.....	.....	.....
1918	.....	.....	.....	.....	.....	7.00	6.75	.....	6.50	6.50	6.75	7.50
1919	13.00	11.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1920	.....	.....	.....	.....	.....	.....	2.00	1.75	1.50	2.50	2.00	2.50
1921	2.75	4.00	4.25	2.75	3.50	3.05	3.50	3.90	4.00	3.75	3.85	4.00
1922	4.25	3.30	3.30	3.25	3.25	3.25	3.20	3.50	3.40	3.10	3.40	3.35
1923	3.50	4.21	4.00	4.00	3.90	4.25	4.00	4.25	.....	.....	.....	.....
1924	.....	4.80	5.00	5.60	5.90	5.85	.....	.....	.....	.....	.....	.....
1925	.....	.....	5.50	5.75	5.75	.....	.....	.....	.....	.....	.....	.....

Division of Statistical and Historical Research.

TABLE 158.—*Rice: Wholesale price per pound, 1909–1925*

NEW YORK (CLEANED, DOMESTIC, FANCY HEAD)

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Average.
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	5.9	5.2	5.1	4.9	4.8	5.0	4.8	4.6	4.1	4.4	4.4	4.4	4.8
1910	4.4	4.6	4.4	4.1	4.1	4.2	4.0	3.9	3.8	3.8	3.7	3.8	4.1
1911	3.9	4.2	4.3	4.2	4.2	4.4	4.7	4.9	4.9	5.1	5.1	5.1	4.6
1912	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.0	4.9
1913	5.1	5.1	5.1	5.1	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.0
Av. 1909–1913	4.9	4.8	4.8	4.6	4.6	4.7	4.7	4.6	4.5	4.6	4.6	4.6	4.7
1914	5.3	5.7	5.6	5.6	5.4	5.2	5.4	5.4	5.4	5.4	5.4	5.4	5.4
1915	5.2	4.9	4.9	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
1916	5.2	5.2	5.2	5.2	5.4	5.4	5.4	5.6	7.1	8.8	8.6	8.4	6.3
1917	7.9	7.8	8.2	9.0	8.9	8.9	8.9	9.4	9.6	9.9	10.0	10.1	9.0
1918	10.1	10.1	10.2	10.5	10.5	10.4	10.4	10.4	10.4	10.7	11.7	13.7	10.8
1919	14.3	14.1	13.6	13.8	14.2	14.8	14.8	14.8	14.8	14.8	14.8	14.4	14.4
1920	14.0	13.2	11.1	7.4	8.5	7.5	6.9	6.9	6.5	6.1	6.5	6.5	8.4
Av. 1914–1920	8.9	8.7	8.4	8.1	8.3	8.2	8.1	8.2	8.4	8.7	8.9	9.1	8.5
1921	6.7	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.1	7.5	7.5	7.1
1922	7.5	7.5	7.6	7.4	7.4	7.8	7.8	7.7	7.6	7.9	7.9	7.9	7.7
1923	7.9	7.7	7.6	7.6	7.6	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
1924	7.8	7.7	7.5	7.6	7.8	7.8	8.1	8.1	8.1	8.1	8.1	8.1	7.9
1925	8.1	7.9	7.9	7.9	8.2								

NEW ORLEANS (HONDURAS, CLEAN, FANCY)

1909	4.1	3.6	3.8	3.7	3.7	3.8	3.8	3.4	3.2	3.6	3.5	3.7	3.7
1910	3.8	3.6	3.4	3.1	3.2	2.9	3.1	2.9	3.0	2.9	2.9	3.6	3.2
1911	3.6	3.5	3.3	3.4	3.4	3.8	3.9	4.0	3.9	4.6	4.2	4.6	3.8
1912	4.1	4.1	3.5	3.8	4.1	4.1	4.0	3.9	4.0	4.1	4.1	4.4	4.0
1913	4.4	3.8	3.8	3.6	3.7	3.9	3.8	3.7	3.6	3.9	3.8	3.7	3.8
Av. 1909–1913	4.0	3.7	3.6	3.5	3.6	3.7	3.7	3.6	3.5	3.8	3.7	4.0	3.7
1914	4.1	4.2	3.6	3.4	3.6	3.9	4.1	4.1	4.0	4.1	4.2	4.2	4.0
1915	3.6	3.3	3.8	3.8	3.8	3.5	3.6	3.9	3.8	4.0	4.2	3.9	3.8
1916	3.8	3.5	3.8	3.9	3.9	3.9	3.9	4.1	5.2	5.9	6.3	6.3	4.5
1917	6.1	6.4	6.7	6.6	6.8	6.8	7.0	7.6	8.2	8.3	8.3	8.4	7.3
1918	7.6	7.6	7.5	7.3	7.5	7.8	7.7	8.0	7.9	7.0	9.2	10.1	7.9
1919	10.9	12.2	11.8	11.9	12.3	12.7	12.8	12.5	12.3	12.2	12.3	12.5	12.2
1920	10.6	9.6	7.9	6.9	6.6	4.6	4.7	5.4	5.3	5.5	5.8	5.6	6.5
Av. 1914–1920	6.7	6.7	6.4	6.3	6.4	6.2	6.3	6.5	6.7	6.7	7.2	7.3	6.6
1921	5.7	5.4	5.3	5.4	5.7	5.7	5.7	5.9	6.4	6.4	6.4	6.4	5.9
1922	6.6	6.6	6.5	6.5	6.5	6.6	6.6	6.3	6.4	6.4	6.5	6.5	6.5
1923	6.5	6.4	6.3	6.3	6.4	6.4	6.5	6.3	6.4	6.5	6.6	6.6	6.4
1924	6.6	6.6	6.4	6.5	6.9	6.9	6.9	6.9	6.9	7.2	7.4	7.6	6.9
1925	7.3	7.1	7.1	7.5	7.9								

HOUSTON (HEAD, CLEANED)

1909	5.6	5.4	5.2	4.9	4.9	4.1	4.4	3.9	3.8	4.0	3.9	4.0	4.5
1910	5.2	4.1	4.2	3.9	3.5	3.8	3.5	3.2	3.4	3.5	3.4	3.3	3.8
1911	4.1	4.1	4.1	4.1	4.1	4.4	4.7	4.8	5.0	5.0	4.8	5.0	4.5
1912	5.1	4.9	4.2	4.6	4.9	4.8	4.8	4.8	4.8	4.8	5.0	5.2	4.8
1913	5.5	5.2	4.9	4.8	4.7	4.9	4.9	4.8	4.1	4.5	4.4	3.5	4.7
Av. 1909–1913	5.1	4.7	4.5	4.5	4.4	4.4	4.5	4.3	4.2	4.4	4.3	4.2	4.5
1914	4.7	4.9	5.0	4.6	4.8	4.6	4.6	4.6	4.7	4.8	4.9	5.0	4.8
1915	5.1	5.0	4.9	4.9	4.9	4.2	4.4	4.4	4.2	4.0	4.0	4.0	4.5
1916	4.0	4.1	4.5	4.6	4.6	4.9	4.9	5.2	6.5	7.9	7.6	7.5	5.5
1917	7.2	7.1	7.8	8.0	8.0								[1] 7.6
1918						9.1	9.1	9.1	9.1	9.1	11.1	13.2	[2] 10.0
1919	13.0	13.1	10.6	10.5	11.2	12.8	12.5	12.8	12.5	12.0	11.6	11.2	12.0
1920	10.0	7.8	6.9	6.2	6.1	4.6	4.2	3.5	3.2	3.4	3.5	3.8	5.3
Av. 1914–1920	[3] 7.3	[3] 7.0	[3] 6.6	[3] 6.5	[3] 6.6	[3] 6.7	[3] 6.6	[3] 6.6	[3] 6.7	[3] 6.9	[3] 7.1	[3] 7.4	7.1
1921	4.2	4.6	4.8	4.8	4.4	4.2	4.4	4.5	4.9	4.8	4.5	4.5	4.6
1922	4.6	4.5	4.1	4.1	4.1	4.2	4.1	4.1	4.2	4.1	4.1	4.2	4.2
1923	4.4	4.6	5.0	4.8	4.8	4.9	5.1	4.8	4.9	4.9	6.1	6.1	5.0
1924	6.5	6.1	6.0	5.8	6.0	6.6	6.6	6.7	6.7	6.5	7.0	7.6	6.5
1925	6.5	6.1	6.4	7.0	7.0								

Division of Statistical and Historical Research. Compiled from the New York Journal of Commerce; New Orleans Times-Picayune, averages of daily range; and reports received from the Houston Cotton Exchange.

[1] Average for 5 months. [2] Average for 7 months. [3] Average for 6 years.

BUCKWHEAT

TABLE 159.—*Buckwheat: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage	Average yield per acre	Production	Price per bushel received by producers, Dec. 1	Farm value Dec. 1	Value per acre [1]	Domestic exports, fiscal year beginning July 1 [2]
	1,000 acres	*Bushels of 48 pounds*	*1,000 bushels*	*Cents*	*1,000 dollars*	*Dollars*	*Bushels*
1909	878	20.5	17,983	70.2	12,628	14.38	158,160
1910	860	20.5	17,598	66.1	11,636	13.53	223
1911	833	21.1	17,549	72.6	12,735	15.29	180
1912	841	22.9	19,249	66.1	12,720	15.12	1,347
1913	805	17.2	13,833	75.5	10,445	12.98	586
Average, 1909–1913	843	20.4	17,242	69.8	12,033	14.27	32,099
1914	792	21.3	16,881	76.4	12,892	16.28	413,643
1915	769	19.6	15,056	78.7	11,843	15.40	515,304
1916	828	14.1	11,662	112.7	13,147	15.88	260,102
1917	924	17.3	16,022	160.0	25,631	27.74	5,567
1918	1,027	16.5	16,905	166.5	28,142	27.40	119,516
1919	700	20.6	14,399	146.1	21,032	30.05	244,785
1920	701	18.7	13,142	128.3	16,863	24.06	399,437
Average, 1914–1920	820	18.1	14,867	124.5	18,507	22.57	279,765
1921	680	20.9	14,207	81.2	11,540	16.97	484,763
1922	764	19.1	14,564	88.5	12,889	16.87	171,335
1923	739	18.9	13,965	93.3	13,029	17.63	92,587
1924	738	18.0	13,277	103.0	13,673	18.53	190,901
1925 [3]	776	18.9	14,647	89.2	13,058	16.83	----------

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Based on farm price Dec. 1.

[2] Compiled from Commerce and Navigation of United States, 1909–1918, and June issue of Monthly Summary of Foreign Commerce, 1919–1925, including buckwheat flour since Jan. 1, 1922.

[3] Preliminary.

TABLE 160.—*Buckwheat: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars		State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]		1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
Me.	12	16	288	416	274	416	Iowa	6	5	90	88	93	79
N. H.	1	1	23	24	25	22	Mo.	1	1	13	14	14	13
Vt.	4	4	88	88	92	79	S. Dak.	10	10	148	120	158	84
Mass.	1	1	19	19	24	21	Nebr.	1	1	15	14	15	14
Conn.	2	2	38	40	41	46	Del.	7	8	118	128	120	118
N. Y.	218	235	4,578	4,465	4,624	3,840	Md.	7	7	122	168	134	168
N. J.	3	4	57	84	67	84	Va.	17	15	294	240	312	264
Pa.	207	211	3,933	4,853	4,051	4,416	W. Va.	31	32	527	576	590	576
Ohio	34	27	544	532	560	458							
Ind.	16	16	224	211	231	179	N. C.	10	10	180	140	214	154
							Ky.	7	7	98	88	117	88
Ill.	10	9	140	126	168	126	Tenn.	3	3	57	45	71	52
Mich.	50	55	700	754	672	679							
Wis.	23	35	299	560	308	442	U. S.	738	776	13,277	14,647	13,673	13,058
Minn.	57	61	684	854	698	640							

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 161.—*Buckwheat: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
Me	28.0	32.5	30.0	29.4	32.0	30.4	29.0	26.0	24.0	21.5	20.0	24.0	27.0	24.5	27.0	27.0	23.0	24.0	26.0	25.4
N. H	22.0	31.0	27.3	31.0	31.0	28.5	25.0	30.0	20.0	16.0	17.0	18.0	20.0	20.9	21.0	25.0	22.0	23.0	24.0	23.0
Vt	22.0	24.0	24.3	30.0	25.0	25.1	28.0	27.0	17.5	20.0	21.0	22.0	21.0	22.4	22.0	24.0	18.0	22.0	22.0	21.6
Mass	19.3	22.0	21.0	21.0	17.0	20.1	18.5	16.0	16.0	15.0	16.0	20.0	19.0	17.2	18.0	21.0	20.0	19.0	19.0	19.4
Conn	19.5	19.5	19.0	20.5	17.0	19.1	18.5	20.0	19.0	17.3	19.0	18.0	17.0	18.4	17.5	18.0	16.0	19.0	20.0	18.1
N. Y	24.0	23.0	21.3	23.8	14.3	21.3	23.0	19.0	12.0	18.0	15.0	22.0	20.0	18.4	21.5	21.0	19.0	21.0	19.0	20.3
N. J	21.8	21.5	20.0	22.0	22.0	21.5	21.0	21.0	19.0	18.0	18.0	18.0	18.0	19.0	21.0	22.0	21.0	19.0	21.0	20.8
Pa	19.5	19.5	21.9	24.2	18.5	20.7	20.5	21.0	14.0	18.0	18.0	21.6	18.0	18.7	23.0	21.0	21.5	19.0	23.0	21.5
Ohio	21.2	18.0	21.0	19.5	18.0	19.5	24.0	23.0	17.7	17.2	16.0	23.2	20.9	20.3	25.0	20.0	20.0	16.0	19.7	20.1
Ind	17.3	17.7	18.3	19.0	18.5	18.2	17.5	14.0	18.0	15.0	15.0	16.5	20.0	16.6	19.0	15.0	17.0	14.0	13.2	15.6
Ill	18.2	20.0	18.1	22.0	17.0	19.1	17.7	17.0	17.0	19.0	17.8	18.0	18.0	17.8	17.4	14.0	15.0	14.0	14.0	14.9
Mich	14.3	15.3	18.0	17.0	15.0	15.9	18.5	14.5	11.0	9.0	10.0	13.8	14.5	13.0	16.0	14.0	14.2	14.0	13.7	14.4
Wis	12.3	14.0	17.5	17.0	16.5	15.5	17.5	13.0	14.0	12.2	15.9	16.2	16.0	15.0	14.9	14.4	14.0	13.0	16.0	14.5
Minn	15.2	16.0	18.0	21.0	16.5	17.3	17.0	17.5	15.0	14.0	17.0	19.0	16.0	16.5	16.0	14.0	13.0	12.0	14.0	13.8
Iowa	15.0	14.9	17.5	19.0	14.0	16.1	18.3	13.0	15.0	12.0	15.0	14.0	17.0	14.9	15.0	14.0	15.0	15.0	17.5	15.3
Mo	21.0	16.5	10.0	15.0	11.0	14.7	15.5	15.0	14.0	15.0	13.0	15.0	16.0	14.8	14.0	13.0	13.0	13.0	14.0	13.4
S. Dak															14.0	8.0	14.0	14.8	12.0	12.6
Nebr	16.0	20.0	16.0	18.0	20.0	18.0	18.5	20.0	17.0	16.0	14.0	16.0	16.0	16.8	16.0	16.0	18.0	15.0	14.0	15.8
Del	19.8	20.5	19.0	16.0	17.0	18.5	19.0	18.5	19.0	20.0	20.5	18.0	18.0	19.0	14.0	19.1	18.0	16.8	16.0	16.8
Md	16.6	18.5	20.0	17.5	16.5	17.8	18.5	20.0	19.0	21.0	20.0	23.0	20.0	20.2	19.0	20.6	22.1	17.5	24.0	20.6
Va	18.0	18.0	16.0	21.5	23.1	19.3	19.4	20.0	19.2	21.1	21.0	19.0	21.6	20.2	21.0	19.5	19.3	17.3	16.0	18.6
W. Va	22.7	23.0	24.0	24.0	21.0	22.9	21.5	22.0	18.3	20.0	19.5	21.0	19.5	20.3	22.0	21.0	20.0	17.0	18.0	19.6
N. C	19.8	19.0	19.0	17.5	19.3	18.9	19.0	17.5	17.5	20.0	20.0	17.0	20.0	18.7	17.0	20.0	22.0	18.0	14.0	18.2
Ky												13.0	15.0		20.0	16.0	18.0	14.0	12.5	16.1
Tenn	15.0	15.0	16.0	18.0	15.0	15.8	22.3	18.0	18.0	17.0	18.0	15.5	16.5	17.9	18.0	14.5	19.0	19.0	15.0	17.1
U. S	20.5	20.5	21.1	22.9	17.2	20.4	21.3	19.6	14.1	17.3	16.5	20.6	18.7	18.3	20.9	19.1	18.9	18.0	18.9	19.2

Division of Crop and Livestock Estimates.

TABLE 162.—*Buckwheat: Estimated price per bushel, received by producers, United States, 1909–1925*

Year beginning September	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Weighted average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	76.0	73.3	70.8	70.0	71.0	71.3	72.0	72.2	72.4	75.8	76.4	73.7	72.1
1910	72.0	68.6	66.0	66.0	65.1	64.2	64.7	65.6	68.0	71.2	74.2	75.0	67.5
1911	71.8	71.3	72.8	73.2	73.6	75.2	76.9	78.4	82.4	85.5	84.9	80.1	75.4
1912	73.2	67.6	65.8	66.4	68.1	68.2	67.6	69.8	71.1	71.8	72.6	71.2	68.3
1913	72.0	74.8	75.5	76.0	76.1	75.4	76.0	77.1	78.2	82.2	83.4	80.5	76.6
Av. 1909–1913	73.0	71.1	70.2	70.3	70.8	70.9	71.4	72.6	74.4	77.3	78.3	76.1	72.0
1914	79.2	78.4	77.2	77.2	80.8	84.6	85.4	85.0	85.8	89.5	90.6	85.3	81.1
1915	77.6	76.1	78.6	80.1	81.1	82.0	83.2	84.0	86.0	90.0	91.0	87.7	81.5
1916	88.4	96.6	107.8	115.0	115.9	119.7	126.6	139.4	167.2	196.4	199.2	176.8	126.5
1917	159.4	154.3	157.1	161.4	162.3	165.0	169.2	173.0	183.5	195.9	196.8	191.5	167.1
1918	185.2	176.5	169.8	164.7	160.5	153.2	149.0	148.4	156.4	163.2	163.4	162.8	164.7
1919	160.9	156.5	148.6	148.4	152.8	155.3	159.4	166.0	174.5	191.4	192.0	178.8	159.2
1920	167.8	145.2	129.6	126.8	122.0	117.5	112.8	112.6	116.0	115.7	117.5	117.0	126.8
Av. 1914–1920	131.2	126.2	124.1	124.8	125.1	125.3	126.5	129.8	138.5	148.9	150.1	142.8	129.6
1921	110.2	95.0	82.6	82.4	84.4	85.6	89.2	93.0	95.4	100.0	99.2	91.0	89.1
1922	85.2	82.2	84.4	89.0	88.5	88.6	92.6	95.0	98.4	102.3	101.4	99.4	89.9
1923	96.6	94.2	93.4	94.7	92.7	92.5	94.7	93.6	97.0	96.5	104.5	123.9	96.3
1924	118.8	107.1	106.8	104.6	107.0	112.2	112.4	104.1	113.3	112.3	115.7	110.0	108.6
1925	101.2	87.6	86.7	87.9									

Division of Crop and Livestock estimates. Mean of prices reported on 1st of month and 1st of succeeding month, September, 1909–December, 1923.

TABLE 163.—*Buckwheat: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Maine	67	60	70	95	150	150	175	153	122	100	110	95	95	100	100
New Hampshire	71	70	81	100	183	200	156	122	130	88	125	100	110	90	103
Vermont	77	82	82	105	150	160	170	135	126	90	92	100	105	90	95
Massachusetts	83	84	95	140	166	196	160	140	140	125	138	115	125	110	123
Connecticut	92	95	96	120	200	210	200	160	154	139	140	110	109	115	123
New York	70	76	80	122	160	175	145	140	128	83	100	96	101	86	93
New Jersey	73	83	83	108	158	170	150	150	129	100	115	95	117	100	105
Pennsylvania	67	76	78	111	163	160	140	120	121	75	80	91	103	91	88
Ohio	75	76	77	110	153	156	155	105	119	105	80	94	103	86	94
Indiana	74	78	80	112	155	160	150	120	122	100	100	95	103	85	97
Illinois	85	95	90	130	170	180	180	136	140	110	85	101	120	100	103
Michigan	67	71	72	115	147	170	137	109	117	78	80	84	96	90	86
Wisconsin	73	76	83	116	174	165	150	120	126	75	87	89	103	79	87
Minnesota	70	70	75	112	135	170	130	106	114	70	80	90	102	75	83
Iowa	83	77	80	125	200	180	169	134	138	80	125	94	103	90	98
Missouri	92	93	90	133	144	180	184	155	140	150	125	118	105	90	118
South Dakota										80	70	86	107	70	83
Nebraska	89	84	95	110	150	165	180	100	126	80	85	85	100	100	90
Delaware	65	76	75	118	148	143	160	120	120	75	80	91	102	92	88
Maryland	71	81	72	110	165	165	155	133	126	85	86	100	110	100	96
Virginia	76	84	80	95	150	163	155	140	124	82	82	95	106	110	95
West Virginia	78	83	80	101	170	173	170	140	131	82	85	96	112	100	95
North Carolina	81	83	82	85	130	150	140	110	111	85	97	108	119	110	104
Kentucky							100	100		100	90	100	119	100	102
Tennessee	79	78	76	100	150	140	150	130	118	95	80	109	125	115	105
United States	70.1	76.4	78.7	112.7	160.0	166.5	146.1	128.3	124.1	81.2	88.5	93.3	103.0	89.2	91.0

Division of Crop and Livestock Estimates.

TABLE 164.—*Buckwheat: Average price per 100 pounds*

BUFFALO[1]

Season beginning October	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	Average
1914	$1.60	$1.55	$1.75	$1.85	$2.21	$2.07	$1.84
1915	1.50	1.81	1.81	1.85	1.80	1.70	1.74
1916	1.86	2.92	3.15	2.86	3.00	3.03	2.80
1917	3.22	3.50	3.52	3.60	3.73	4.50	3.68
1918	3.84	3.70	3.32	2.93	2.50	2.35	3.11
1919	2.98	2.84	3.16	3.25	3.45	3.47	3.19
1920	2.73	2.52	2.51	2.48	2.40	2.60	2.54
Average, 1914–1920	2.53	2.69	2.75	2.69	2.73	2.82	2.70
1921	1.75	1.64	1.78	1.94	2.08	2.59	1.96
1922	1.79	2.04	2.13	2.05	2.10	2.12	2.04
1923	2.20	2.12	2.06	2.02	2.06	2.25	2.12
1924	2.95	2.13	2.27	2.32	2.35	2.33	2.39
1925	1.82	1.82	1.92				

MINNEAPOLIS[2]

1922	$1.70	$2.12	$2.20	$2.06	$2.07	$2.03	$2.03
1923	2.04	2.17	1.98	1.94	2.05	2.05	2.04
1924	2.37	2.14	2.37	2.47	2.23	2.05	2.27
1925	1.54	1.65	1.74				

Division of Statistical and Historical Research.

[1] From the Weekly Northwestern Miller. Average of weekly quotations. 1922, 1923, and 1924 from Commercial Bulletin, Buffalo Corn Exchange.

[2] From Minneapolis Daily Market Record. Average of daily quotations.

SORGHUMS

TABLE 165.—*Sorghums*[1]: *Acreage, production, and total farm value, United States, 1915–1925*

Year	Thousands of acres	Average yield in bushels per acre	Production, thousands of bushels	Price per bushel, received by producers, Nov. 15	Farm value thousands of dollars
1915	4,153	27.6	114,460	44.7	51,157
1916	3,944	13.7	53,858	105.9	57,027
1917	5,153	11.9	61,409	161.9	99,433
1918	6,036	12.1	73,241	150.0	109,881
1919	5,060	25.8	130,734	127.4	166,519
1920	5,120	26,8	137,408	92.9	127,620
1921	4,635	24.6	113,990	39.1	44,575
1922	5,064	17.9	90,524	87.8	79,503
1923	5,792	18.3	105,835	94.0	99,473
1924	3,813	21.1	80,443	85.2	68,501
1925[2]	4,120	17.2	71,050	[3] 75.7	53,801

Division of Crop and Livestock Estimates.

[1] Kafirs, milo maize, feterita. [2] Preliminary. [3] Dec. 1 price.

TABLE 166.—*Sorghums*[1]: *Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Average yield in bushels per acre		Production, thousands of bushels		Price per bushel received by producers Nov. 15		Farm value, thousands of dollars	
	1924	1925[2]	1924	1925	1924	1925[2]	1924	1925[3]	1924	1925[3]
Iowa	7	7	22.0	23.2	154	162	115	100	177	162
Missouri	63	57	15.0	15.0	945	855	115	100	1,087	855
Nebraska	25	20	18.0	15.0	450	300	91	75	410	225
Kansas	1,144	1,100	21.4	16.9	24,482	18,590	80	71	19,586	13,199
Oklahoma	975	1,053	20.0	13.5	19,500	14,216	77	75	15,015	10,662
Texas	1,300	1,625	22.0	19.0	28,600	30,875	87	76	24,882	23,465
Colorado	50	50	9.0	12.0	450	600	90	71	405	426
New Mexico	135	90	20.0	20.0	2,700	1,800	100	65	2,700	1,170
Arizona	30	30	20.0	22.0	600	660	130	66	780	436
California	84	88	30.5	34.0	2,562	2,992	135	107	3,459	3,201
United States	3,813	4,120	21.1	17.2	80,443	71,050	85.2	75.7	68,501	53,801

Division of Crop and Livestock Estimates.

[1] Kafirs, milo maize, feterita. [2] Preliminary. [3] Dec. 1 price.

TABLE 167.—*Kafir: Monthly and yearly receipts at Kansas City, 1909–1925*

[Thousand pounds—i. e., 000 omitted]

Year beginning November	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
1909	5,940	2,820	7,020	8,400	9,000	2,520	1,800	1,140	660	420	300	200	40,220
1910	6,660	16,050	12,550	10,050	4,800	2,900	4,000	3,150	1,700	2,350	1,050	3,450	68,050
1911	11,300	18,100	14,291	22,945	10,718	11,088	10,410	6,776	4,189	2,587	3,450	5,790	121,644
1912	24,948	36,098	34,188	18,665	6,222	8,439	7,207	12,505	5,051	616	1,848	1,478	157,265
1913	1,232	2,957	7,454	4,004	1,417	862	924	862	185	62	493	2,341	22,793
Av., 1909–1913	9,884	15,205	15,101	12,813	6,431	5,162	4,868	4,887	2,357	1,207	1,428	2,652	81,994
1914[1]	17,433	40,286	37,022	34,619	10,595	27,227	14,106	10,410	11,519	11,396	6,283	7,269	28,165
1915[1]	20,574	62,524	32,088	32,424	35,616	33,376	30,362	33,880	21,504	9,576	5,600	2,016	319,530
1916[1]	1,512	5,432	10,789	15,338	4,004	2,526	2,156	493	431	431	308	308	43,719
1917[1]	4,928	15,585	25,995	21,560	28,336	18,049	5,482	5,975	2,218	1,602	493	370	130,593
1918[1]	2,834	9,117	8,562	9,425	21,498	18,418	21,006	5,298	8,932	3,634	4,866	4,497	118,087
1919[1]	1,232	13,059	41,703	40,410	51,519	25,133	30,246	45,769	42,997	13,182	8,932	6,899	321,081
1920[1]	6,283	36,652	54,886	25,934	31,847	16,078	16,878	36,036	13,121	16,386	6,714	11,704	272,519
Av., 1914–1920	7,828	26,094	30,148	25,673	26,202	20,115	17,175	19,694	14,389	8,030	4,742	4,723	204,813
1921[1]	14,722	19,589	26,365	30,061	21,930	17,494	11,149	11,889	8,378	4,682	1,971	6,714	174,944
1922	9,425	24,886	23,531	13,059	9,486	7,762	4,250	2,772	3,881	1,971	1,047	986	103,056
1923	10,903	19,589	28,358	32,402	22,299	19,034	15,338	14,661	13,983	5,914	3,511	5,790	276,605
1924	36,221	64,495	38,254		27,843	17,926		24,640	12,382	10,226	3,819	1,355	237,161
1925	15,646	35,235											

Division of Statistical and Historical Research. Compiled from Kansas City Annual Statistical Report, Board of Trade, and Grain Dealers Journal.

[1] Kafir, milo maize, and feterita included from January, 1915–December, 1921.

TABLE 168.—*Kafir: Estimated price per bushel, received by producers, United States, 1916–1925*

Year beginning November	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Weighted average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1916	102.4	101.5	119.1	129.0	147.0	152.0	188.0	206.3	214.0	243.3	187.7	174.1	152.6
1917	160.6	166.7	170.8	185.7	193.5	204.0	211.0	179.6	165.6	177.2	181.0	175.9	182.3
1918	150.5	154.8	153.7	156.9	150.9	162.1	173.6	174.1	175.9	176.9	153.7	139.7	160.4
1919	133.6	144.3	137.3	138.7	129.8	145.4	154.5	153.9	135.2	150.0	124.8	95.5	140.4
1920	95.5	81.7	65.6	57.8	67.3	53.8	51.5	62.0	51.0	58.0	54.9	48.3	63.6
1921	35.8	33.8	41.4	48.0	60.5	63.2	61.2	63.8	68.7	87.7	77.1	85.6	54.8
1922	89.2	89.3	89.0	92.1	98.6	108.2	96.4	100.2	109.8	102.2	94.1	100.8	96.6
1923	94.1	85.5	87.0	86.6	86.3	86.8	87.2	84.2	91.5	102.8	97.2	100.4	88.1
1924	86.8	90.1	93.1	100.8	99.5	106.6	110.3	102.7	117.6	113.2	105.2	97.9	100.8
1925	77.9	75.6	------	------	------	------	------	------	------	------	------	------	------

Division of Crop and Livestock Estimates.

TABLE 169.—*Kafir, No. 2 White: Weighted average price per 100 pounds of reported cash sales, Kansas City, 1909–1925*

Year beginning November	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Weighted average[1]
1909	$1.20	$1.31	$1.53	$1.42	$1.37	$1.32	$1.46	$1.50	$1.53	$1.81	$1.78	$1.19	$1.45
1910	1.12	.96	.96	.93	.94	.94	1.06	1.24	1.42	1.34	1.27	1.21	1.12
1911	1.06	.99	1.19	(2)	1.29	1.43	1.44	1.25	1.63	1.68	1.36	1.13	1.31
1912	.98	.86	.85	.83	.81	.82	.88	1.11	1.09	1.41	1.53	1.51	1.06
1913	1.57	1.63	1.72	1.72	1.76	(2)	2.00	(2)	(2)	(2)	(2)	(2)	--------
Av., 1909–1913	1.19	1.15	1.25	------	1.23	------	1.37	------	------	------	------	------	--------
1914	1.04	1.14	1.33	1.38	1.28	1.18	1.14	1.20	1.16	1.09	1.04	1.06	1.17
1915	.91	.99	.99	.96	.93	1.06	1.05	1.11	1.22	1.58	1.71	1.84	1.19
1916	2.34	2.11	2.43	2.48	2.66	3.17	3.79	3.36	4.00	4.48	4.34	3.69	3.24
1917	3.40	3.25	3.33	3.69	3.84	3.37	2.93	2.65	3.03	3.40	3.40	3.27	3.28
1918	2.96	2.61	2.60	2.70	2.56	2.67	2.97	3.42	3.51	3.61	2.41	2.34	2.86
1919	2.67	2.93	2.49	2.17	2.31	2.38	2.65	2.52	2.36	2.43	2.24	1.81	2.41
1920	1.39	1.17	.98	.91	.85	.80	1.03	1.12	1.21	1.13	1.13	1.02	1.06
Av., 1914–1920	2.10	2.03	2.02	2.04	2.06	2.09	2.22	2.20	2.36	2.53	2.32	2.15	2.17
1921	.85	.90	.90	1.29	1.32	1.20	1.28	1.38	1.66	1.72	1.98	1.83	1.36
1922	1.78	1.63	1.59	1.60	1.66	1.72	1.76	1.67	1.50	1.48	(2)	(2)	--------
1923	(2)	1.27	(2)	1.22	1.19	1.30	1.10	1.51	1.68	(2)	2.01	1.59	--------
1924	1.57	1.75	1.95	1.84	1.66	1.65	1.74	1.88	2.01	2.08	1.91	1.79	1.81
1925	1.46	1.38	-----	-----	-----	------	------	------	----	----	----	----	----

Division of Statistical and Historical Research. Compiled from Kansas City Price Current and Grain Market Review.

[1] Average of daily prices weighted by car-lot sales.

[2] No quotations.

STATISTICS OF FRUITS AND VEGETABLES

APPLES

TABLE 170.—*Apples: Total production in the United States, 1909–1925*

Year	Production	Year	Production	Year	Production	Year	Production
	Bushels		*Bushels*		*Bushels*		*Bushels*
1909	*145, 412, 000*	1914	253, 200, 000	1919	142, 086, 000	1924	171, 250, 000
1910	141, 640, 000	1915	230, 011, 000	1920	223, 677, 000	1925 [1]	164, 616, 000
1911	214, 020, 000	1916	193, 905, 000	1921	99, 002, 000		
1912	235, 220, 000	1917	166, 749, 000	1922	202, 702, 000		
1913	145, 410, 000	1918	169, 625, 000	1923	202, 842, 000		

Division of Crop and Livestock Estimates. Census figures are in italics.

[1] Preliminary.

TABLE 171.—*Apples: Total production, by States, 1916–1925*

[Thousand bushels—i. e., 000 omitted]

State	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925 [1]
Maine	5,040	4,275	2,010	4,829	1,680	4,060	1,250	2,500	3,241	3,305
New Hampshire	1,596	1,035	1,155	1,364	1,200	700	775	935	1,462	1,230
Vermont	3,312	1,248	990	960	993	600	960	521	895	935
Massachusetts	3,450	2,163	2,430	3,187	3,575	1,125	3,010	3,300	3,360	3,160
Rhode Island	261	195	189	334	390	63	200	450	324	299
Connecticut	1,776	1,251	999	1,395	2,375	758	1,300	1,600	1,480	1,375
New York	35,334	16,266	40,878	14,350	47,087	13,500	36,000	25,000	22,000	26,829
New Jersey	2,250	2,058	2,463	1,666	2,942	667	2,610	2,203	3,000	2,845
Pennsylvania	18,621	11,646	16,080	5,513	18,584	2,208	11,400	10,855	7,400	6,970
Ohio	8,601	5,760	7,005	2,976	13,960	3,390	7,298	12,395	6,350	6,300
Indiana	3,360	4,836	1,794	1,190	4,596	1,029	4,148	5,035	1,900	2,700
Illinois	4,848	7,518	3,459	4,673	5,866	2,381	9,720	7,500	6,400	7,000
Michigan	9,951	4,146	9,792	5,844	16,500	6,317	11,850	13,159	6,000	9,000
Wisconsin	2,604	3,090	2,811	1,545	2,250	1,050	2,024	2,340	1,378	2,106
Minnesota	1,266	1,446	996	1,336	1,350	900	1,020	1,520	979	940
Iowa	3,573	3,795	1,584	1,810	4,410	630	4,410	4,350	2,800	2,200
Missouri	6,003	8,070	4,245	5,132	4,724	480	9,400	7,072	4,300	4,100
South Dakota	348	336	273	168	180	126	263	212	150	62
Nebraska	1,278	1,854	525	907	797	125	1,620	880	1,000	450
Kansas	2,268	2,853	1,503	1,835	1,144	172	3,280	2,166	2,200	1,600
Delaware	432	798	714	606	822	68	1,414	1,200	1,250	1,300
Maryland	2,544	2,559	2,034	1,519	2,600	225	1,500	2,300	1,810	1,870
Virginia	13,299	11,778	10,068	8,943	13,744	570	8,960	10,000	14,500	7,844
West Virginia	7,752	4,320	5,856	4,189	8,040	420	5,625	8,320	7,000	4,185
North Carolina	5,589	4,500	3,588	2,000	6,320	593	6,000	2,700	6,350	3,192
South Carolina	1,179	1,635	1,407	216	440	293	383	274	600	386
Georgia	1,623	1,713	1,713	417	1,270	698	1,135	864	1,500	741
Kentucky	4,416	5,802	2,799	1,281	5,022	636	5,070	2,625	5,700	2,625
Tennessee	4,299	4,170	4,050	1,259	4,280	754	4,250	1,311	4,550	1,881
Alabama	1,116	1,449	1,662	577	1,186	890	1,098	731	1,190	595
Mississippi				218	190	145	216	120	270	221
Arkansas	1,593	2,574	1,290	7,164	3,900	120	2,400	3,025	3,880	4,070
Louisiana				44	34	35	37	31	30	28
Oklahoma	669	1,293	660	1,600	585	486	1,140	1,240	1,170	644
Texas	468	357	273	487	274	274	264	270	330	264
Montana	768	1,044	792	850	825	975	610	990	290	80
Idaho	738	3,843	1,200	3,800	3,420	4,500	3,900	5,600	2,178	5,500
Wyoming				30	18	19	40	35	50	26
Colorado	2,541	2,190	2,067	3,418	2,830	3,200	4,250	3,010	3,024	3,200
New Mexico	459	879	912	1,100	434	483	750	1,400	851	1,021
Arizona	138	129	138	125	80	47	77	128	70	98
Utah	99	906	786	760	1,064	1,037	1,085	1,119	600	1,250
Nevada				53	36	24	35	56	35	74
Washington	17,658	19,830	16,491	25,295	21,502	29,062	25,775	33,000	22,000	28,700
Oregon	3,855	4,335	3,384	6,921	4,158	6,667	6,300	8,000	6,500	5,400
California	6,930	6,804	6,560	8,200	6,000	6,500	7,850	10,500	8,903	6,016
United States	193,905	166,749	169,625	142,086	223,677	99,002	202,702	202,842	171,250	164,616

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 172.—*Apples (commercial crop): Summer, fall, and winter varieties by States*[1]

State	Summer				Fall and Early Winter				Winter			
	Usual	1923	1924	1925	Usual	1923	1924	1925	Usual	1923	1924	1925
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
Maine	12	13	3	10	24	27	15	25	64	60	82	65
New Hampshire	8	11	7	10	16	26	14	25	76	63	79	65
Vermont	13	12	8	8	32	29	35	34	55	59	57	58
Massachusetts	14	11	12	14	28	31	25	36	58	58	63	50
Rhode Island	15	19	17	10	24	23	26	30	61	58	57	60
Connecticut	10	10	6	10	25	27	18	26	65	63	76	64
New York	9	7	14	12	23	21	36	26	68	72	50	62
New Jersey	29	31	24	35	28	30	28	28	43	39	48	37
Pennsylvania	16	15	17	19	29	35	28	25	55	50	55	56
Delaware	42	43	43	48	18	18	19	17	40	39	38	35
Maryland	15	16	13	17	24	26	27	25	61	58	60	58
Virginia	2	3	3	2	9	7	10	5	89	90	87	93
West Virginia	17	20	16	17	25	25	30	26	58	55	54	57
North Carolina	21	------	17	22	37	------	32	36	42	------	51	42
Georgia	7	2	7	13	32	34	35	40	61	64	58	47
Ohio	17	17	24	------	25	23	29	------	58	60	47	------
Indiana	19	16	26	------	31	28	31	------	50	56	43	------
Illinois	18	19	24	16	29	32	29	29	53	49	47	55
Michigan	18	------	25	22	25	------	32	28	57	------	43	50
Wisconsin	28	27	24	28	44	49	45	44	28	24	31	28
Minnesota	41	42	41	33	45	39	45	51	14	19	14	16
Iowa	27	24	30	28	33	38	33	35	40	38	37	37
Missouri	6	10	2	3	31	35	27	35	63	55	71	62
South Dakota	43	------	41	------	38	------	38	------	19	------	21	------
Nebraska	13	8	16	16	23	19	26	24	64	73	58	60
Kansas	8	7	13	------	26	23	28	------	66	70	59	------
Kentucky	25	18	25	28	30	29	30	31	45	53	45	41
Tennessee	35	28	37	------	35	36	24	------	30	36	39	------
Texas	29	28	25	------	34	48	32	------	37	24	43	------
Oklahoma	17	13	18	------	35	25	32	------	48	62	50	------
Arkansas	4	2	4	4	22	22	26	16	74	76	70	80
Montana	6	6	6	25	70	73	73	35	24	21	21	40
Colorado	5	5	10	5	30	37	24	25	65	58	66	70
New Mexico	8	8	7	10	37	42	33	30	55	50	60	60
Utah	10	10	16	13	33	34	28	35	57	56	56	52
Idaho	4	4	6	5	38	36	30	32	58	60	64	63
Washington	4	4	5	5	34	35	30	30	62	61	65	65
Oregon	5	5	4	6	17	22	17	24	78	73	79	70
California	22	25	20	12	26	28	25	20	52	47	55	68
United States	10.4	9.2	11.7	10.3	26.5	27.9	27.3	26.8	63.1	62.9	61.0	62.9

Division of Crop and Livestock Estimates.

[1] The percentages shown are the percentages of the various apple crops reported by the growers to be of summer varieties, such as ordinarily go into consumption not later than early September, fall and early winter varieties not suitable for keeping later than Christmas; and later varieties, including those which can ordinarily be stored for winter use.

TABLE 173.—*Apples: Percentage reduction from full yield, from stated causes, as reported by crop correspondents, 1912–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze	Hail	Hot winds	Storms	Other climatic	Total climatic					
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1912	2.5	0.9	0.3	10.2	0.7	0.3	0.9	1.1	16.9	4.2	3.1	0.1	8.1	32.4
1913	10.3	.4	.4	24.3	.6	.9	.6	2.4	39.9	1.0	5.2	(1)	7.4	53.5
1914	6.5	.3	(1)	6.4	.6	.4	.6	.4	15.2	.8	5.0	.1	7.1	28.2
1915	1.2	1.9	.2	15.8	.9	.1	1.2	.5	21.8	5.2	3.0	.1	5.3	35.4
1916	5.4	3.2	.2	9.9	.9	.6	1.4	1.2	22.8	5.6	3.0	.1	7.1	38.6
1917	4.1	3.8	.1	15.3	1.0	.3	1.1	1.3	27.0	4.7	2.8	.1	9.6	44.2
1918	7.5	.7	.2	19.1	.8	1.0	.7	.7	30.7	4.2	2.8	.2	7.0	44.9
1919	4.3	2.9	.1	29.1	.6	.6	1.0	.5	39.1	5.1	2.7	.1	5.7	52.7
1920	2.2	.8	.2	11.6	.8	.2	.7	.1	16.6	4.4	1.9	.1	2.9	25.9
1921	5.0	.7	------	50.3	.6	.3	.6	.2	57.7	3.0	1.9	.1	2.4	65.1
1922	4.1	1.3	------	13.4	.8	.4	.7	.6	21.3	4.8	2.4	.1	1.7	30.3
1923	5.7	.6	.1	16.9	1.0	.1	.7	.2	25.3	4.5	2.7	.1	2.0	34.6
1924	6.5	3.3	.1	14.2	.8	.1	1.1	.1	26.2	5.8	2.7	.1	2.0	36.8

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 174.—*Apples: Car-lot shipments by State of origin, June, 1920–June, 1925*

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 preliminary
BOX AREA	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Montana	443	689	351	461	173
Idaho	2,977	5,913	4,230	6,935	2,223
Colorado	3,063	3,882	3,385	2,718	2,404
New Mexico	293	636	445	1,368	864
Arizona	5	3	14	9	------
Utah	603	740	718	947	338
Washington	22,213	33,355	28,291	37,633	25,152
Oregon	3,265	6,588	3,895	6,428	5,515
California	4,413	5,062	4,961	6,505	4,890
Total box	37,275	56,868	46,290	63,004	41,559
BARREL AREA					
Maine	425	4,499	290	918	2,115
New Hampshire	287	334	187	311	805
Massachusetts	609	166	284	246	587
New York	35,736	17,779	30,080	20,434	16,632
New Jersey	897	187	446	399	130
Pennsylvania	3,462	242	2,050	4,033	1,706
Ohio	1,036	627	425	1,051	1,046
Illinois	4,087	503	6,297	6,832	5,867
Michigan	7,367	6,096	6,076	9,266	3,443
Missouri	1,933	115	3,083	4,050	2,939
Kansas	832	64	1,083	1,412	1,294
Delaware	782	125	1,751	1,590	1,384
Maryland	1,739	129	1,150	2,181	1,239
Virginia	8,911	409	6,975	9,830	13,080
West Virginia	4,912	779	2,240	7,332	3,762
Arkansas	3,868	6	2,620	2,763	3,451
Other States	1,959	632	2,632	2,532	2,801
Total barrel	78,842	32,692	67,669	75,180	62,281
Total box and barrel	116,117	89,560	113,959	138,184	103,840

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from June 1 of one year through June of the following year.

TABLE 175.—*Apples (commercial crop): Production, by States, 1921–1925*

[Thousand barrels—i. e., 000 omitted]

State	1921	1922	1923	1924	1925 [1]	State	1921	1922	1923	1924	1925 [1]
Me	657	232	480	660	645	Va	80	1,400	1,950	2,520	1,386
N. H	110	119	150	292	225	W. Va	130	881	1,400	800	825
Vt	116	128	89	160	170	N. C	25	236	100	307	160
Mass	172	461	600	675	655	Ga	58	95	60	120	60
R. I	8	20	80	64	57	Ky	31	169	70	162	70
Conn	70	108	200	285	300	Tenn	45	95	30	106	41
N. Y	3,300	6,000	4,200	3,738	5,397	Ala	15	18	12		
N. J	132	552	470	612	607	Ark	16	520	656	720	691
Pa	221	1,216	1,266	780	1,011	Okla	21	38	42	54	29
Ohio	360	608	1,033	694	678	Tex	21	15	15		
Ind	109	277	300	145	258	Mont	175	115	130	70	14
Ill	397	1,450	1,400	1,100	1,164	Idaho	1,359	1,150	1,600	600	1,700
Mich	1,208	1,699	2,118	1,000	1,700	Colo	812	1,034	803	806	860
Wis	64	101	136	98	157	N. Mex	123	150	315	189	260
Minn	64	41	61	38	38	Ariz	6	9	14	7	10
Iowa	25	220	290	150	80	Utah	198	198	260	120	290
Mo	30	1,250	850	588	646	Wash	8,300	7,341	9,600	6,275	8,318
S. Dak	0	4	3			Oreg	1,667	1,260	1,750	1,550	1,296
Nebr	17	130	103	120	65	Calif	1,352	1,399	2,100	1,490	1,097
Kans	29	546	400	344	285	U. S	21,557	31,945	35,936	28,063	31,909
Del	14	380	340	310	340						
Md	20	280	460	314	324						

Division of Crop and Livestock Estimates. Included in "Apples" (Table 171).

By commercial crop is meant that portion of the total crop which is sold for consumption as fresh fruits. One barrel is equivalent to three boxes.

[1] Preliminary.

TABLE 176.—*Apples: Car-lot shipments by State of origin, June, 1920—December, 1925*

State and year	Crop movement season [1]													
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
New York:	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
1920		16	762	2,681	9,875	8,488	3,521	2,795	3,415	2,611	1,039	452	81	35,736
1921		135	867	3,130	5,894	1,221	829	1,090	1,485	1,472	970	563	123	17,779
1922		71	1,367	3,568	8,012	5,710	1,968	2,193	2,241	2,399	1,482	903	166	30,080
1923		4	334	1,715	4,297	3,317	1,201	1,697	2,005	2,839	1,711	1,015	299	20,434
1924		7	591	1,494	3,966	2,994	1,186	1,576	1,586	1,536	1,001	577	118	16,632
1925 [2]		36	693	2,873	7,066	4,933	1,895							
Pennsylvania:														
1920		29	47	222	1,424	664	366	292	256	152	9	1		3,462
1921			1	72	119	16	7	7	15	9	2			242
1922		19	23	270	849	375	220	177	71	21	17	8		2,050
1923		20	30	382	1,611	933	292	303	288	143	19	9	3	4,033
1924		4	5	67	630	337	163	240	152	74	21	13		1,706
1925 [2]		17	52	327	950	343	213							
Illinois:														
1920	50	557	192	1,037	1,517	353	33	46	44	111	83	59	5	4,087
1921	39	27	57	148	101	10	9	33	46	12	7	12	2	503
1922	310	650	342	1,687	2,037	864	59	65	85	88	61	48	1	6,297
1923	22	481	203	1,603	3,519	607	78	75	70	45	68	39	22	6,832
1924	37	484	305	1,155	2,949	502	79	69	63	57	42	105	20	5,867
1925 [2]	245	470	357	1,446	1,764	362	40							
Michigan:														
1920		65	1,207	1,247	2,793	1,518	237	92	91	78	38	1		7,367
1921		538	1,260	1,783	2,352	117	15	12	11	7	1			6,096
1922		307	913	1,000	2,739	890	95	42	33	35	20	2		6,076
1923		39	1,220	1,406	3,851	1,970	240	80	142	193	90	28	7	9,266
1924		2	388	657	1,443	727	60	35	37	37	40	16	1	3,443
1925 [2]		44	726	999	2,514	1,088	86							
Missouri:														
1920		5	45	413	877	217	69	68	83	87	43	19	7	1,933
1921		3	3	31	59	16		2	1					115
1922	8	11	84	825	1,362	301	81	74	78	94	80	73	12	3,083
1923	1	17	33	785	2,002	653	140	61	62	62	61	102	71	4,050
1924	2	20	44	606	1,590	257	105	92	76	57	37	48	5	2,939
1925 [2]	15	23	115	651	1,167	274	46							

[1] Crop movement season extends from June 1 of one year through June of the following year.

[2] Preliminary.

TABLE 176.—*Apples: Car-lot shipments by State of origin, June, 1920—December, 1925*—Continued

State and year	Crop movement season [1]													
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Virginia:	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars	Cars
1920		48	101	1,577	3,310	1,226	821	715	450	378	202	77	6	8,911
1921			14	193	104	14	34	16	10	16	8			409
1922	5	32	300	1,741	2,349	1,139	465	342	133	94	98	160	117	6,975
1923		50	129	1,963	3,892	1,482	773	712	304	200	115	101	109	9,830
1924		59	171	2,336	5,555	2,503	580	552	306	341	164	137	76	13,080
1925 [2]		46	297	2,617	2,253	595	441							
West Virginia:														
1920		67	82	771	2,185	869	249	188	145	148	111	87	10	4,912
1921		5	18	404	160	20	27	15	42	59	27	2		779
1922	10	28	75	451	1,005	310	141	84	37	36	38	25		2,240
1923		78	118	1,162	3,446	1,585	340	271	108	114	39	35	36	7,332
1924		48	91	516	1,762	721	220	127	106	69	58	34	10	3,762
1925 [2]		92	136	992	1,517	575	129							
Arkansas:														
1920	15	36	205	1,360	1,760	183	71	86	77	47	28			3,868
1921				1							3	2		6
1922	41	37	441	769	975	144	57	47	35	49	24	1		2,620
1923	11	13	190	727	1,116	506	29	29	25	36	42	38	1	2,763
1924	11	39	113	934	1,593	447	106	66	70	40	28	4		3,451
1925 [2]	8	89	597	499	1,398	325	86							
Idaho:														
1920				153	1,443	733	221	147	129	124	20	4	3	2,977
1921		2	22	1,191	3,101	855	286	149	214	66	9	12	6	5,913
1922			3	68	1,649	1,236	384	377	287	198	16	11	1	4,230
1923		1	5	266	2,595	1,895	660	648	543	237	56	17	12	6,935
1924		1		397	888	606	193	77	37	13	3	7	1	2,223
1925 [2]		1	10	881	2,911	1,529	825							
Colorado:														
1920		1	3	166	1,793	761	117	73	89	51	7	2		3,063
1921			13	861	2,224	430	141	103	91	14	5			3,882
1922			2	158	1,213	1,027	601	225	111	43	5			3,385
1923			4	274	1,150	579	289	118	197	95	12			2,718
1924			3	239	1,205	580	223	65	57	27	5			2,404
1925 [2]		1	5	407	1,180	680	310							
Washington:														
1920		23	88	760	7,923	4,996	2,138	1,158	1,717	1,490	1,066	669	185	22,213
1921		44	151	2,671	12,980	7,847	3,076	2,060	2,293	994	636	491	112	33,355
1922		33	78	2,187	6,792	5,596	3,298	4,194	3,007	2,004	780	294	28	28,291
1923		65	204	2,486	13,111	7,871	2,708	3,410	3,813	1,962	1,074	818	111	37,633
1924	8	26	192	3,186	9,056	5,527	2,066	1,669	1,085	730	737	606	264	25,152
1925 [2]		108	427	5,161	11,416	5,971	2,512							
Oregon:														
1920		2	1	95	998	1,106	451	273	197	96	34	12		3,265
1921		9	9	323	2,367	1,913	1,000	498	309	109	44	6	1	6,588
1922		1	1	98	867	1,239	707	451	314	191	23	3		3,895
1923		19	27	371	2,241	2,012	635	482	394	186	59	1	1	6,428
1924			40	497	2,329	1,459	613	323	129	82	41	1	1	5,515
1925 [2]	1	6	34	417	2,130	1,020	337							
California:														
1920	5	219	584	998	1,002	787	389	116	86	70	78	67	12	4,413
1921	10	301	677	1,250	1,534	714	174	120	117	101	42	21	1	5,062
1922	2	212	998	782	920	887	495	179	103	168	107	78	30	4,961
1923	61	1,290	984	1,277	1,431	771	219	122	77	123	55	65	30	6,505
1924	22	734	645	943	1,185	695	186	120	111	97	85	59	8	4,890
1925 [2]	53	343	155	486	703	228	85							
Other States:														
1920	85	889	455	1,280	3,990	1,950	539	218	197	216	66	24	1	9,910
1921	43	175	452	1,876	4,131	1,624	324	86	58	44	9	8	1	8,831
1922	495	1,311	393	1,831	3,820	1,327	250	123	76	82	56	11	1	9,776
1923	58	1,283	641	2,272	5,614	2,390	457	290	185	135	68	27	5	13,425
1924	125	938	538	1,614	5,415	2,876	619	283	209	117	33	8	4	12,776
1925 [2]	98	1,532	628	2,279	4,621	1,555	239							
Total:														
1920	155	1,957	3,772	12,760	40,890	23,851	9,222	6,267	6,976	5,659	2,824	1,474	310	116,117
1921	92	1,239	3,544	13,934	35,126	14,791	5,922	4,191	4,692	2,903	1,763	1,117	246	89,560
1922	871	2,712	5,020	15,435	34,589	21,045	8,821	8,573	6,611	5,502	2,807	1,617	356	113,959
1923	153	3,360	4,122	16,689	49,876	26,571	8,061	8,298	8,213	6,370	3,409	2,295	707	138,184
1924	205	2,362	3,126	14,641	39,866	20,231	6,399	5,294	4,024	3,277	2,295	1,615	505	103,840
1925 [2]	420	2,808	4,232	20,035	41,590	19,478	7,244							

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from June 1 of one year through June of the following year.

TABLE 177.—*Apples: International trade, average 1911–1913, annual 1922–1924*

[Thousand barrels (of 144 pounds)—i. e., 000 omitted]

Country	Year ended December 31							
	Average, 1911–1913		1922		1923		1924, preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Australia	26	380	------	[1] 662	------	[1] 455	------	------
Belgium	264	312	30	187	41	263	104	328
Canada	280	1,286	171	1,494	185	1,609	177	1,524
Italy	13	220	([2])	93	([2])	153	([2])	333
Japan	------	68	------	------	------	7	------	5
Netherlands	35	311	58	116	107	251	121	353
New Zealand	[3] 17	[3] 5	6	31	6	41	13	68
Spain	------	10	------	2	------	3	------	[4] 2
United States	([2])	3,290	48	1,648	44	2,959	32	4,120
PRINCIPAL IMPORTING COUNTRIES								
Brazil	27	------	11	------	17	------	------	------
Cuba	13	------	26	------	31	------	------	------
Denmark	36	1	84	1	131	([2])	132	([2])
Germany	4,818	31	28	80	505	14	3,767	26
Sweden	44	1	68	1	154	1	216	([2])
United Kingdom	2,562	------	3,411	------	4,827	------	5,250	------
Total 15 countries	8,135	5,915	3,941	4,315	6,048	5,756	9,812	6,759

Division of Statistical and Historical Research. Official sources.

[1] Year beginning July 1.
[2] Less than 500 barrels.
[3] Includes pears.
[4] Six months.
[5] Not separately stated.

TABLE 178.—*Apples: Estimated price per bushel, received by producers, United States, 1910–1925*

Year beginning June	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1910	112.0	76.9	73.8	73.6	77.4	89.3	100.2	115.7	118.6	124.7	138.8	139.6	88.1
1911	135.4	94.8	73.0	70.2	65.8	73.1	86.1	92.7	98.8	103.5	114.9	128.8	76.6
1912	108.0	82.5	67.5	62.2	61.3	63.5	72.6	74.3	78.4	82.4	85.0	94.0	66.8
1913	101.2	86.0	75.2	76.5	85.6	94.4	103.6	110.6	123.0	128.9	137.1	146.4	93.0
Av. 1910–1913	114.2	85.0	72.4	70.6	72.5	80.1	90.6	98.3	104.7	109.9	119.0	127.2	81.1
1914	135.6	91.2	68.6	61.6	56.0	57.3	66.6	69.3	73.1	73.4	80.1	90.6	62.7
1915	90.3	78.4	61.8	58.0	66.1	72.4	77.0	86.1	90.5	91.2	94.8	97.5	71.0
1916	104.9	86.5	80.7	75.6	82.5	92.0	103.4	104.3	114.4	126.9	137.1	142.9	90.7
1917	146.5	125.1	100.6	96.6	105.1	116.8	127.4	132.9	138.5	142.6	143.9	155.8	113.6
1918	144.6	125.7	114.5	118.9	129.1	138.9	150.9	148.9	159.8	190.1	203.5	220.8	137.5
1919	223.4	187.6	161.4	153.2	175.6	184.9	213.9	215.9	229.2	236.7	253.5	285.8	186.1
1920	249.1	196.7	152.1	134.8	125.9	130.7	143.2	130.8	132.8	134.7	142.2	162.3	134.4
Av. 1914–1920	156.3	127.3	105.7	99.8	105.8	113.3	126.1	126.9	134.0	142.2	150.7	165.1	113.7
1921	173.9	165.3	165.1	171.4	196.4	215.7	224.5	183.5	206.7	206.2	194.5	241.4	196.2
1922	202.7	181.7	100.4	94.3	93.4	101.5	108.6	131.5	142.3	144.9	156.5	178.7	107.5
1923	188.6	166.7	121.4	108.0	114.0	114.6	114.0	121.3	125.0	129.1	129.4	131.3	117.3
1924	159.3	141.3	121.6	109.8	115.9	119.5	128.2	144.9	150.7	155.4	158.4	179.2	122.1
1925	201.4	158.7	130.7	112.5	120.5	127.7	137.4	------	------	------	------	------	------

Division of Crop and Livestock Estimates.

TABLE 179.—*Apples: Cold-storage holdings, United States, 1915–1925* [1]

[Thousand—i. e., 000 omitted]

BARRELS

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	Oct. 1	Nov. 1	Dec. 1
1915	2,929	2,438	1,716	896	299	61	----	3,093	4,213
1916	3,743	3,324	2,543	1,561	799	218	----	2,530	3,166
1917	2,680	2,121	1,560	1,044	543	183	----	2,558	3,195
1918	2,754	2,226	1,575	978	356	101	----	2,915	3,280
1919	2,582	1,704	962	487	198	68	824	3,108	3,326
1920	2,693	2,092	1,385	705	274	64	452	3,516	4,570
1921	3,966	3,016	2,020	1,027	449	170	570	1,822	1,979
1922	1,742	1,424	996	561	248	74	1,219	4,133	4,319
1923	3,708	2,839	2,013	1,199	578	150	664	4,619	5,477
1924	4,962	3,993	3,024	1,925	1,113	451	543	3,551	4,167
1925	3,643	2,811	2,006	1,151	543	175	1,058	4,434	5,051
Av. 1921–1925	3,604	2,817	2,012	1,173	586	204	811	3,712	4,199

BOXES

1915	4,091	3,441	2,323	1,341	525	142	----	1,789	3,685
1916	3,210	2,738	2,096	1,268	709	258	----	2,190	3,977
1917	4,356	3,790	2,646	1,504	796	246	----	2,216	4,483
1918	5,534	5,192	3,764	2,416	966	172	----	2,513	4,945
1919	5,137	4,205	2,431	1,410	545	170	440	4,244	7,793
1920	8,508	7,296	5,331	2,982	1,598	447	277	2,878	6,651
1921	7,259	6,266	4,890	3,548	2,009	826	667	5,464	11,281
1922	11,061	8,667	6,282	4,107	2,088	721	669	4,164	7,271
1923	8,319	7,612	5,593	3,345	1,475	380	789	6,886	13,866
1924	14,201	11,550	8,821	5,837	2,901	949	829	6,620	9,917
1925	9,089	7,264	5,266	3,412	1,801	674	1,091	9,165	13,041
Av. 1921–1925	9,986	8,272	6,170	4,050	2,055	710	809	6,460	11,075

BARRELS AND BOXES [1]

1915	4,293	3,585	2,491	1,343	474	108	----	3,689	5,441
1916	4,813	4,236	3,242	1,984	1,035	304	----	3,260	4,492
1917	4,132	3,385	2,442	1,545	808	265	----	3,296	4,689
1918	4,599	3,957	2,830	1,783	678	159	----	3,752	4,928
1919	4,294	3,105	1,772	956	380	125	971	4,523	5,923
1920	5,529	4,524	3,162	1,699	806	213	544	4,475	6,787
1921	6,386	5,105	3,650	2,210	1,119	445	792	3,643	5,739
1922	5,429	4,313	3,090	1,930	944	314	1,452	5,521	6,743
1923	6,481	5,376	3,877	2,314	1,070	277	927	6,914	10,099
1924	9,696	7,843	5,965	3,871	2,080	768	820	5,758	7,473
1925	6,673	5,233	3,761	2,288	1,143	399	1,422	7,489	9,398
Av. 1921–1925	6,933	5,574	4,069	2,523	1,271	441	1,083	5,865	7,890

Cold Storage Report Section.

[1] All apples, except those packed in western-style boxes, are tabulated in terms of barrels, on the basis of 3 bushels to the barrel; since Oct. 1, 1923, apples packed in bushel baskets are also included in this tabulation. Three boxes are considered the equivalent of 1 barrel.

TABLE 180.—*Apples: Average l. c. l. price to jobbers at nine markets, 1920–1925*

IN BARRELS

Market. Season beginning September	September [1]		October		November average	December average	January average	February average	March average	April [2]		May [2]	
	Range	Average	Range	Average						Range	Average	Range	Average
New York:	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1920	2.75– 8.00	4.86	2.00– 9.00	5.23	5.66	4.71	4.80	5.01	6.01	3.50– 10.00	6.79	4.00– 13.50	8.03
1921	5.50–13.00	8.09	5.00–11.00	7.72	7.18	7.82	8.23	8.62	7.64	5.00– 12.00	7.44		
1922	1.50– 7.50	3.53	2.00– 8.50	4.63	4.94	4.67	5.08	5.09	5.37	3.00– 8.50	6.03	3.75– 8.50	6.75
1923	2.00– 7.50	5.16	2.00–10.00	4.80	4.58	4.71	4.46	4.59	4.50	1.25– 9.00	4.82	1.50– 7.50	4.29
1924	2.75– 8.00	4.53	2.75– 9.00	5.82	6.51	6.21	7.16	7.84	7.82	4.00– 16.00	7.80		
1925	2.50– 9.00	4.79	2.00–10.50	5.93	5.63	5.92							
Chicago:													
1920	3.50– 8.00	5.86	3.50– 9.00	6.28	6.29	5.23	5.36	5.15	5.38	4.50– 8.00	5.55	5.00– 9.00	6.53
1921	7.00–10.00	8.26	6.00–10.50	8.00	7.97	8.10	8.48	9.07	8.49	6.00– 9.00	7.86		
1922	2.00– 6.00	3.58	2.25– 7.00	4.41	4.68	4.90	4.58	4.84	5.17	4.00– 7.00	5.43	4.00– 9.50	6.40
1923	2.75– 7.00	4.60	3.50– 6.25	5.06	5.12	4.96	4.90	5.12	4.99	2.00– 6.00	4.28	2.00– 5.75	4.02
1924	2.50–12.00	6.25	3.75–10.00	6.31	6.80	6.21	6.50	6.64	6.70	5.25– 8.50	6.90		
1925	3.00– 7.00	5.08	3.50– 6.50	5.00	5.29	5.07							
Philadelphia:													
1920	2.00– 7.50	5.00	2.50– 8.50	4.93	4.49	4.13	4.05	4.17	4.44	2.85– 7.00	5.07	4.00– 7.50	6.00
1921	4.50–10.50	7.44	4.00–12.00	6.63	6.57	6.65	7.38	7.44	7.01	4.25– 8.90	6.64		
1922	1.50– 5.50	3.39	2.00– 7.00	3.65	3.86	4.13	4.33	4.72	4.91	4.00– 6.50	5.24	4.25– 8.50	5.81
1923	1.75– 7.00	4.28	1.75– 6.50	3.77	3.93	3.64	3.63	3.75	3.82	1.50– 4.75	3.37	1.50– 6.00	3.46
1924	2.25– 8.00	4.99	2.25– 8.00	4.68	4.80	4.98	5.98	6.48	6.29	4.00– 9.00	6.75		
1925	2.25– 5.75	3.84	2.25– 7.50	4.47	4.82	5.12							
Pittsburgh:													
1920	3.00– 6.50	4.99	3.00– 6.00	4.46	4.81	4.68	4.59	4.73	5.06	3.25– 6.50	5.34	4.50– 8.50	6.31
1921	5.25– 9.00	7.22	5.00– 9.00	7.16	6.55	6.25	7.63	7.42	7.07	5.75– 8.00	7.02		
1922	2.50– 4.00	3.25	2.50– 5.00	3.51	3.99	4.38	4.29	4.38	4.84	3.00– 6.50	4.80	4.00– 7.00	5.44
1923	2.50– 5.50	4.06	3.00– 5.50	3.54	3.49	4.05	3.99	4.07	4.25	2.50– 4.50	3.39	2.50– 4.50	3.36
1924	4.00– 5.00	4.56	2.50– 5.00	4.10	4.78	5.62	5.74	6.33	6.18	4.75– 6.50	5.84		
1925	2.00– 5.00	3.46	3.00– 5.00	3.90	4.11	4.32							
St. Louis:													
1920	3.00– 7.25	5.34	2.75– 7.50	4.67	4.97	4.83	4.68	4.88	5.23	4.75– 8.50	5.92	5.50– 10.00	6.68
1921			4.85– 8.25	6.48	5.44								
1922	2.00– 4.85	3.40	1.75– 4.75	3.36	3.15	4.53	4.61	4.53	4.89	3.50– 7.50	4.89		
1923	1.75– 5.25	4.07	1.75– 5.25	3.60	3.29	4.15	3.95	4.24	4.15	1.75– 5.50	3.65		
1924	2.00– 6.50	4.40	2.00– 7.00	4.32	4.90	5.93	6.14	7.14	6.86	4.25– 10.00	6.90		
1925	1.50– 6.50	3.64	2.00– 6.50	3.62	3.71	5.09							
Cincinnati:													
1920	4.00– 6.00	5.40	2.75– 6.00	4.63	4.45	4.87	4.46	4.65	5.31	4.25– 8.00	6.02	5.00– 7.75	6.70
1921	7.00– 9.00	8.12	5.00– 8.50	7.64	6.98	6.72	7.44	7.62	7.56	6.00– 8.50	7.76		
1922	2.50– 4.00	3.15	2.00– 4.75	3.32	4.15	4.41	4.46	4.72	5.08	4.00– 6.50	5.46	4.65– 6.50	5.98
1923			3.00– 5.50	4.07	4.30	4.88	4.39	4.16	3.89	1.50– 4.50	3.41	2.50– 4.75	3.84
1924			2.50– 7.00	5.69	4.80	5.43	6.08	6.69	6.51	5.50– 7.50	7.08		
1925			3.50– 6.75	4.52	4.74	5.11							

Minneapolis:													
1920	6.50–11.50	9.63	5.75–11.00	8.88	7.85	5.84	6.13	6.17	6.14	6.00– 7.50	6.78	7.00– 8.25	7.51
1921			7.50–10.00	8.78	9.77	8.89	8.57	9.56	9.87				
1922	3.25– 6.00	4.73	3.50– 6.50	5.12	4.80	5.05	5.29	5.27	5.49	5.00– 6.25	5.39	5.25– 6.00	5.73
1923			4.00– 8.00	6.16	5.08	5.14	5.86	5.50	5.48	3.50– 7.00	5.17	3.25– 3.50	3.38
1924	6.00– 7.50	6.30	4.50– 7.50	6.89	6.46	7.40	7.82	8.12	8.91	6.00– 12.00	6.50		
1925	5.25– 5.50	5.45	4.25– 7.50	5.88	5.80	5.47							
Kansas City:													
1920	7.50– 9.00	8.45	5.00– 8.00	7.25	5.95	5.66	5.58	5.97	5.73	5.75– 7.00	5.91	5.75– 6.00	5.88
1921	10.00–12.00	11.00											
1922	3.00– 4.00	3.62	3.75– 5.00	4.33	4.50	4.58	4.53	4.38	5.05	4.50– 7.50	5.82	4.75– 5.00	4.88
1923	4.00– 6.50	5.02	3.25– 5.50	4.78	4.30	4.35	4.88	4.78	4.74	3.50– 6.00	4.75	3.00– 6.00	4.45
1924	3.25– 6.00	5.67	6.00– 6.50	6.16	6.54	6.15	6.84	7.23	7.22	5.50– 8.50	7.58		
1925			4.50– 8.00	6.56	6.18	5.70							
Washington:													
1923	4.00– 9.00	5.20	3.50– 7.50	4.85	4.40	3.95	3.88	4.20	4.38	2.00– 7.00	4.28	2.25– 5.50	4.04
1924	3.00–10.00	6.40	3.00– 8.00	5.42	5.35	5.79	6.42	6.42	6.32	4.00– 8.50	6.35		
1925			4.50– 6.50	5.85	5.79	5.39							

IN BOXES

	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
New York:													
1920	4.00– 5.25	4.40	2.25– 5.50	3.68	3.29	3.88	3.70	3.90	3.77	2.50– 6.00	3.98	2.75– 5.00	3.87
1921	2.25– 6.00	4.06	2.00– 5.50	3.36	2.80	3.12	3.01	3.35	3.41	2.75– 4.75	3.54		
1922	1.50– 4.50	2.65	1.40– 5.25	2.85	2.36	2.42	2.41	2.35	2.57	1.90– 3.75	2.74	2.25– 4.75	3.45
1923	1.50– 4.50	2.95	1.15– 5.00	2.41	2.09	2.13	2.04	2.05	2.11	1.25– 2.50	2.06	1.75– 2.65	2.20
1924	1.75– 5.00	3.26	1.50– 4.50	2.95	2.92	2.93	3.23	3.28	3.50	3.00– 4.50	3.92		
1925	2.00– 4.00	2.64	1.90– 4.00	2.78	2.59	2.85							
Chicago:													
1920	4.00– 5.25	4.62			3.67	3.75	3.14	3.30	3.62	2.25– 5.25	3.23	2.50– 4.50	3.23
1921			2.00– 4.75	3.43	3.05	3.00	3.16	3.34	3.36	2.00– 4.50	3.45		
1922	1.00– 2.80	1.89	1.50– 3.75	2.69	2.48	2.61	2.69	2.71	3.07	2.25– 5.00	2.96	1.85– 5.00	2.91
1923	2.50– 4.00	3.10	1.50– 3.75	2.39	2.42	2.55	2.47	2.49	2.50	1.50– 3.75	2.55	1.75– 3.75	2.75
1924	2.25– 4.25	3.09	2.25– 4.50	3.41	3.42	3.58	3.72	3.56	3.58	2.25– 5.00	3.79		
1925						2.82							
Philadelphia:													
1920			2.00– 4.75	3.16	2.72	2.52	3.44	3.83	3.06			2.00– 4.00	3.11
1921			1.38– 5.00	2.88	2.41	2.49	2.77	2.96	3.32	2.25– 3.75	3.13		
1922			1.25– 3.50	2.34	1.93	2.10	2.07	2.06	2.39	2.00– 3.25	2.65		
1923			1.00– 3.25	1.82	1.77	1.76	1.87	1.71	1.76	1.25– 2.50	1.96	1.50– 2.65	2.01
1924			1.75– 4.50	2.62	2.57	2.86	3.00	2.92	3.09	3.00– 4.25	3.58		
1925			2.00– 4.00	2.61	2.42	2.36							
Pittsburgh:													
1920			3.50– 5.50	4.26	3.64		2.60		3.11	2.25– 3.75	3.04	2.25– 4.00	3.18
1921			2.00– 4.75	3.22	2.85		3.07	3.26	3.50	2.25– 4.50	3.13		
1922			1.50– 3.00	2.17	2.00	2.32	2.22	2.28	2.49	2.00– 3.50	2.71	2.25– 3.50	2.96
1923			1.25– 4.50	2.39	2.09	2.27	2.07	2.41	2.54	1.50– 4.00	2.66	1.75– 4.00	2.75
1924			2.00– 4.50	3.10	2.77	3.09	3.34	3.44	3.33	3.00– 5.00	3.65		
1925			2.00– 3.65	2.61	2.60	2.52							

[1] Quotations began on Sept. 1 in 1920, 1922, 1923, 1925; Sept. 7, 1921; Sept. 2, 1924.

[2] Last reported quotations of season May 28, 1921; May 1, 1922; May 12, 1923; June 18, 1924; Apr. 15, 192

TABLE 180.—*Apples: Average l. c. l. price to jobbers at nine markets, 1920–1925*—Continued

IN BOXES—Continued

Market. Season beginning September	September [1]		October		November average	December average	January average	February average	March average	April [2]		May [2]	
	Range	Average	Range	Average						Range	Average	Range	Average
Minneapolis:	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1920			3.40– 4.40	3.80	3.74	3.59	3.18	3.45	3.41	3.00– 3.75	3.38	3.00– 3.75	3.38
1921	2.25– 4.75	3.22	2.90– 4.75	3.75	3.57	3.77	3.46	3.39	3.57	3.00– 4.00	3.46		
1922	2.40– 3.37	2.59	1.75– 3.50	2.50	2.70	2.62	2.59	2.40	2.58	2.50– 3.00	2.79	2.50– 3.00	2.78
1923			1.30– 3.15	2.55	2.49	2.37	2.60	2.88	2.73	2.10– 3.50	2.53	2.25– 2.75	2.37
1924	2.75– 3.50	3.09	2.75– 4.50	3.09	3.70	3.79	4.20	4.44	3.84	3.00– 3.65	3.53		
1925	2.25– 4.25	2.89	2.50– 4.00	3.14	3.15	3.36							
Kansas City:													
1920			3.00– 4.50	3.61	3.60	3.07	2.84	3.29	3.53	3.50– 4.50	4.00	3.50– 4.50	4.00
1921	3.75	3.75	2.75– 4.50	3.54	3.63	3.52	3.49	3.59	3.75	3.00– 4.50	3.48		
1922			1.75– 3.50	2.76	2.78	2.75	2.74	2.70	3.18	2.75– 4.00	3.32	2.75– 3.25	3.00
1923	2.50– 3.25	2.74	1.25– 4.00	2.69	2.38	2.38	2.68	2.75	2.86	2.25– 3.75	2.92	2.40– 3.75	3.08
1924	1.75– 4.00	2.67	1.75– 5.00	3.63	3.62	3.62	3.74	3.88	3.88	3.25– 4.50	3.88		
1925	2.25– 3.00	2.58	2.25– 3.75	2.83	2.44	2.60							
Washington:													
1923	1.50– 3.50	2.85	1.25– 3.75	2.77	2.69	2.62	2.74	2.89	2.72	1.50– 4.00	2.38	1.75– 2.75	2.36
1924	2.75– 4.00	3.30	2.50– 4.50	3.72	3.60	3.63	3.86	4.06	3.88	2.75– 4.75	3.59		
1925	2.50– 4.25	2.92	2.00– 4.25	3.16	3.13	3.26							

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division. Average prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices. Since all varieties are included, these figures can be taken only as an index of the changes in the level of apple prices.

[1] Quotations began on Sept. 1 in 1920, 1922, 1923, 1925; Sept. 7, 1921; Sept. 2, 1924.
[2] Last reported quotations of seasons May 28, 1921; May 1, 1922; May 12, 1923, June 8, 1924; Apr. 15, 1925.

TABLE 181.—*Apples: Average l. c. l. price per barrel to jobbers at New York, September, 1909–December, 1925*

Season beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	3.72	4.22	3.81	3.69	3.82	3.21	3.28	3.48	3.71
1910	3.50	3.65	3.75	4.14	4.12	4.50	4.75	5.35	5.31
1911	2.55	3.06	2.71	3.12	2.84	2.96	3.39	4.20	4.00
1912	2.66	3.06	2.75	2.62	2.71	2.78	2.70	3.12	4.00
1913	3.29	3.44	3.75	4.00	4.06	4.79	4.75	5.34	5.14
Average, 1909–1913	3.14	3.49	3.35	3.51	3.51	3.65	3.77	4.30	4.43
1914	2.38	2.22	2.78	3.12	2.80	2.91	2.84	3.56	3.65
1915	2.38	2.95	3.12	3.06	3.05	3.19	3.33	3.12	2.96
1916	3.30	3.38	4.18	4.60	5.00	5.38	5.91	5.53	5.28
1917	4.08	4.44	4.94	5.10	5.00	4.88	4.92	5.75	6.75
1918	5.38	6.03	5.98	6.31	6.50	7.88	9.55	10.00	10.80
1919	6.12	7.81	7.55	7.50	7.00	8.06	7.50	7.08	9.25
1920	4.86	5.23	5.66	4.71	4.80	5.01	6.01	6.79	8.03
Average, 1914–1920	4.07	4.58	4.89	4.91	4.88	5.33	5.72	5.98	6.67
1921	8.09	7.72	7.18	7.82	8.23	8.62	7.64	7.44	-------
1922	3.53	4.63	4.94	4.67	5.08	5.09	5.37	6.03	6.75
1923	5.16	4.80	4.58	4.71	4.46	4.59	4.50	4.82	4.29
1924	4.53	5.82	6.51	6.21	7.16	7.84	7.82	7.80	-------
1925	4.79	5.93	5.63	5.92	-------	-------	-------	-------	-------

Division of Statistical and Historical Research. September, 1909, to May, 1920, compiled from the American Agriculturist, average of weekly range; subsequently, compiled from Daily Market Report of Fruit and Vegetable Division; simple average of daily range of selling prices. Since all varieties are included, these figures can be taken only as an index of the changes in the level of apple prices.

TABLE 182.—*Apples: Average l. c. l. price per barrel to jobbers at New York for October 15, January 1, and March 1, 1909–1925*

Season beginning	Oct. 15	Jan. 1	Mar. 1	Season beginning	Oct. 15	Jan. 1	Mar. 1
	Dols.	*Dols.*	*Dols.*		*Dols.*	*Dols.*	*Dols.*
1909	4.00	4.12	3.25	1918	5.38	6.50	9.25
1910	3.75	4.00	4.50	1919	6.75	6.50	8.25
1911	3.25	2.75	2.88	1920	5.25	5.50	5.38
1912	3.00	2.75	2.88				
1913	3.50	4.25	4.88	Average, 1914–1920	4.34	4.89	5.68
Average, 1909–1913	3.50	3.57	3.68	1921	8.75	9.00	10.00
				1922	4.62	6.12	6.38
1914	2.50	2.88	3.25	1923	4.88	4.75	5.50
1915	2.88	3.00	3.00	1924	6.12	5.50	9.50
1916	3.12	4.88	5.62	1925	5.75	-------	-------
1917	4.50	5.00	5.00				

Division of Statistical and Historical Research. To March 1, 1920, compiled from the American Agriculturist; subsequently compiled from Daily Market Report of Fruit and Vegetable Division; simple average of the daily range of selling prices. Since all varieties are included, these figures can be taken only as an index of the changes in the level of apple prices.

CITRUS FRUITS

TABLE 183.—*Production of oranges, grapefruit, and lemons, by States, for various periods* [1]

[Thousand boxes—i. e., 000 omitted]

ORANGES [2]

States	1889 [3]	1899 [3]	1909 [3]	1919 [3]	1920 [4]	1921 [4]	1922 [4]	1923 [4]	1924 [4]	1925 [4]
Florida	3,147	273	4,888	[4] 7,000	8,100	7,300	9,700	12,400	11,000	[5] 8,500
California	1,245	5,882	[4] 17,440	[4] 16,192	22,030	13,726	21,091	23,095	18,100	20,400
Arizona		11	33	80	60	80	81	86	86	100
Alabama		([6])	1	41	165	165	350	450	0	[5] 200
Louisiana		1	152	37	42	50	60	75	75	100
Mississippi			5	31	25	30	45	55	0	30
Texas			11	9			4	6	12	16

GRAPEFRUIT

Florida	10	12	1,062	[4] 5,500	5,100	6,000	7,200	8,000	8,200	[5] 5,500
California		18	123	[4] 263	304	360	394	363	387	460
Mississippi			1	([6])	1	1	1	1	0	1
Arizona		1	1	29	34	35	44	44	44	44
Louisiana			2	([6])						
Texas			([6])	3			35	65	211	279

LEMONS

Florida	253	2	12	32						
California	306	874	2,756	3,949	5,255	4,172	3,492	6,840	5,125	6,000
Arizona		([6])	1	2						

Division of Crop and Livestock Estimates.

[1] *Production.*—For Florida the estimates for 1919 and more recent years represent shipments by rail or boat. For other States the figures aim to include all fruit actually picked, however utilized, but do not include fruit which matured on the trees but was not picked because of freezing, dropping, or low prices. For California the figures relate to the crop produced from the bloom of the year shown, fruiting through the winter and through the spring and summer of the following year, being picked from Nov. 1 of the year shown to Oct. 31 of the following year. Fruit not picked till after the latter date is included with the crop of the following year. For other States, the estimates include fruit picked after about Sept. 1 of the year shown. For the crop of 1925 the estimates shown were based on prospects on Dec. 1, 1925, except where shown otherwise.

[2] Including tangerines.

[3] Data from census reports.

[4] Compiled from records of Division of Crop and Livestock Estimates.

[5] Revised February, 1926.

[6] Less than 500 boxes.

TABLE 184.—*Number of orange, grapefruit, and lemon trees of bearing age, by States, for various periods* [1]

[Thousand trees—i. e., 000 omitted]

ORANGE [2]

State	1889 [3]	1899 [3]	1909 [3]	1919 [3]	1920 [4]	1921 [4]	1922 [4]	1923 [4]	1924 [4]	1925 [4]
Florida	2,725	2,553	2,790	3,684	4,025	4,525	5,125	6,025	[3] 7,306	----
California	1,154	5,649	6,619	[4] 10,800	13,224	16,152	16,456	16,785	17,114	----
Arizona	----	49	33	47	50	53	60	68	[3] 77	----
Alabama	----	([5])	3	260	605	660	1,500	1,700	275	300
Louisiana	6	141	267	104	111	119	128	138	[3] 151	153
Mississippi	([5])	4	10	[4] 30	32	34	50	60	[6] 25	40
Texas	([5])	1	42	14	----	----	----	145	165	190

GRAPEFRUIT

Florida	3	117	656	1,681	2,044	2,344	2,544	2,644	[3] 2,972	----
California	([5])	81	43	231	280	328	385	383	381	----
Arizona	----	3	1	19	22	25	26	26	[6] 26	----
Louisiana	----	1	3	([5])	----	----	----	----	----	----
Mississippi	----	----	1	1	1	1	1	2	([5])	1
Texas	----	([5])	5	5	----	----	----	1,262	1,436	1,653

LEMON

Florida	85	23	12	34	----	----	----	----	----	----
California	83	1,493	941	2,885	3,275	3,665	3,748	3,819	3,890	----
Arizona	----	2	2	1	----	----	----	----	----	----
Louisiana	----	1	1	([5])	----	----	----	----	----	----
Texas	----	([5])	1	1	----	----	----	43	[6] 49	57

Division of Crops and Livestock Estimates.

[1] The figures shown are approximate only. They are intended to represent the numbers of citrus trees on farms and old enough to produce fruit in the year shown. The figures no doubt include some small trees producing a negligible quantity of fruit. The enumerators of the 1910 and 1920 censuses asked for orange trees and also for other subtropical fruits. In this table tangerine trees have been included with other orange trees. The enumerators of the 1925 census asked only for the number of orange trees, and the figures may include only part of the tangerine trees. In addition to the numbers shown there are in some sections a considerable number of trees on properties that were not listed as farms by the Census Bureau.

[2] Including tangerine trees.

[3] Data from census reports.

[4] From records of the Division of Crop and Livestock Estimates.

[5] Less than 500 trees.

[6] Preliminary report of 1925 census not yet available.

TABLE 185.—*Citrus fruits: Car-lot shipments by State of origin, September, 1920–September, 1925*

GRAPEFRUIT

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
Florida	11,115	12,943	16,969	19,614	20,105
Texas		8	48	99	521
Arizona	48	62	103	155	159
California	463	475	552	439	436
Total	11,626	13,488	17,672	20,307	[3] 21,222

LEMONS

Texas				1	2
Arizona			1	2	1
California	11,759	10,591	8,488	13,340	11,571
Total	11,759	10,591	8,489	13,343	11,574

ORANGES [4]

Florida	20,859	[5] 15,718	23,006	33,418	25,140
Alabama	87	145	476	600	2
Mississippi			9	13	
Louisiana				3	2
Texas				3	3
Arizona	49	78	71	94	45
California	46,844	28,376	48,346	44,905	34,768
Total	67,839	44,317	71,908	79,036	59,960

TOTAL CITRUS FRUITS (GRAPEFRUIT, LEMONS, ORANGES [4])

Florida	31,974	28,661	39,975	53,032	45,245
Alabama	87	145	476	600	3
Mississippi			9	13	
Louisiana				3	2
Texas		8	48	103	526
Arizona	97	140	175	251	205
California	59,066	39,442	57,386	58,684	46,775
Total	91,224	68,396	98,069	112,686	92,756

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from Sept. 1, of one year through September of the following year, except for oranges in California, where the season extends from November 1 to October.

[2] Preliminary.

[3] Includes 1 car from Alabama.

[4] Includes tangerines.

[5] Includes 1 car in August, 1921.

TABLE 186.—*Lemons: International trade, average 1911–1913, annual 1922–1924*

[Thousand boxes (of 74 pounds)—i. e., 000 omitted]

Country	Year ended December 31							
	Average 1911–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Italy	2	8,147	(1)	4,049	1	4,198	1	5,236
Spain		101	(1)	178	(1)	291	(1)	22
PRINCIPAL IMPORTING COUNTRIES								
Austria			140	(2)	(2)	(2)	(2)	(2)
Austria-Hungary	1,032	228						
Denmark	26		32		32		36	
Germany	[3] 1,107	(2)	648	(2)	387	(2)	1,201	(2)
Netherlands	94	3	154	12	158	11	178	18
New Zealand	10		12		15		13	(1)
Sweden	24		32		31		34	
United Kingdom	[4] 1,116		1,294		1,393		[4] 1,781	
United States	[3] 1,750	[5] 66	1,500	198	1,702	182	634	228
Total 11 countries	5,161	8,545	3,812	4,437	3,719	4,682	3,878	5,504

Division of Statistical and Historical Research. Official sources.

[1] Less than 500 boxes. [3] Two-year average. [5] One year only.
[2] Not separately stated. [4] Includes limes and grapefruit.

TABLE 187.—*Oranges: International trade, average 1911–1913, annual 1922–1924*

[Thousand boxes (of 78 pounds)—i. e., 000 omitted]

Country	Year ended December 31							
	Average 1911–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Cuba		111		319		263		
Greece [1]		42		115		68		70
Italy	3	3,476	(2)	2,457	(2)	2,299	(2)	3,485
Japan		353		340		370		277
Spain		14,830	1	11,335	1	13,030	(2 3)	[3] 13,880
United States	[4] 73	1,154	(5)	1,382	[6] 93	2,294	15	2,564
PRINCIPAL IMPORTING COUNTRIES								
Austria			98	1	(7)	(7)	(7)	(7)
Austria-Hungary	2,110	102						
Denmark	97		241		258		238	
Egypt	(7)		426	5	611	5	502	4
France [1]	3,198	38	2,839	54	3,780	61	4,334	154
Germany	3,935	(7)	539	(7)	384	(7)	4,425	(7)
Netherlands	631	9	1,351	7	1,264	67	2,109	779
New Zealand	(7)		51		48		53	
Norway [1]	208		289		379		296	
Sweden	166		249	(2)	247	(2)	231	(2)
Switzerland	372		318		341		367	
United Kingdom	7,638		9,879		10,714		10,395	
Total 18 countries	18,431	20,115	16,281	16,015	18,120	18,457	22,965	21,213

Division of Statistical and Historical Research. Official sources.

[1] Includes lemons. [3] Six months. [5] Expressed in value only. [7] Not separately stated.
[2] Less than 500 boxes. [4] Two-year average. [6] Includes limes.

TABLE 188.—*Grapefruit, Florida: Average auction price per box at New York, 1919–1925*

Season beginning October	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1919	3.72	3.67	3.29	3.16	3.28	3.60	4.05	5.02	[1] 2.61	[1] 6.20	[2] 3.70
1920	5.31	4.71	3.92	4.86	4.30	4.71	4.55	4.54	4.21	[1] 4.33	[2] 4.55
1921	3.37	3.52	3.86	3.47	3.78	3.91	4.46	5.20	6.18	[1] 5.22	[2] 4.03
1922	3.75	3.84	4.00	3.73	3.96	3.63	3.98	3.48	3.26	2.96	3.70
1923	2.89	2.80	2.91	3.00	2.86	3.15	3.02	3.45	2.72	3.06	2.98
1924	4.19	2.99	2.39	2.94	3.00	2.90	4.04	4.50	5.99	------	3.38
1925	4.93	3.95	4.03	------	------	------	------	------	------	------	------

Division of Statistical and Historical Research. Compiled from New York Daily Fruit Reporter.
Monthly average obtained by taking simple average of reported averages of all sales of "golden" grade. Includes all sizes. Yearly average weighted by number of sales reported during each month.

[1] Ten sales or less during month. [2] See footnotes to figures used in obtaining this average.

TABLE 189.—*Lemons, California: Average auction price per box at New York, 1919–1925*

Season beginning October	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1919	7.33	3.79	2.45	2.25	6.00	3.81	3.76	3.12	2.60	1.87	3.18	2.61	3.59
1920	4.73	2.78	3.04	3.39	4.11	3.14	2.91	3.82	8.17	8.99	3.72	5.87	4.64
1921	4.96	3.40	4.34	4.79	4.68	4.15	3.84	4.95	4.50	3.45	4.37	8.52	4.38
1922	8.51	7.44	5.61	5.01	5.42	4.20	4.79	6.12	7.92	6.07	7.68	7.28	6.25
1923	4.40	3.31	3.42	3.01	3.37	3.37	3.51	3.18	3.40	2.80	4.80	4.65	3.56
1924	4.90	6.80	4.65	4.45	4.30	4.51	4.76	5.71	6.52	4.48	4.50	8.87	5.36
1925	6.73	4.10	4.37	------	------	------	------	------	------	------	------	------	------

Division of Statistical and Historical Research. Compiled from New York Daily Fruit Reporter.
Monthly average obtained by taking simple average of reported averages of all sales. Includes all sizes and grades. Yearly average weighted by number of sales reported during each month.

TABLE 190.—*Oranges, California navel: Average auction price per box at New York, 1919–1925*

Season beginning December [1]	December	January	February	March	April	May	June	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1919	5.80	[2] 5.98	[2] 6.39	5.13	7.10	5.71	4.76	[2] 5.70
1920	5.79	4.96	3.56	4.20	4.41	5.01	5.71	4.63
1921	6.46	4.64	[2] 4.81	6.51	[2] 6.97	[2] 6.78	------	[2] 6.07
1922	5.00	4.34	4.17	3.91	4.60	4.61	4.67	4.45
1923	4.44	3.50	3.50	3.23	4.05	3.49	[2] 4.35	[2] 3.67
1924	4.71	5.32	4.98	5.76	5.72	7.05	6.74	5.94
1925	4.67	------	------	------	------	------	------	------

Division of Statistical and Historical Research. Compiled from New York Daily Fruit Reporter.
Monthly average obtained by taking simple average of reported averages of all sales of the following-named brands: Paul Neyron, Golden Cross, Glendora Heights, Pinnacle, Earlibest, and Big Tree. Includes all sizes. Yearly average weighted by number of sales reported during each month.

[1] The season usually begins in December, but in 1925 the season began in November, with an average price of $7.03.
[2] Ten sales or less during month. [3] See footnotes to figures used in obtaining this average.

TABLE 191.—*Oranges, California Valencia: Average auction price per box at New York, 1919–1925*

Season beginning May	May	June	July	August	September	October	November	December	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1919	[1] 6.03	5.56	5.49	5.90	5.91	6.63	5.56	5.24	[2] 5.69
1920	4.91	6.52	7.05	7.57	7.88	7.91	9.22	[1] 8.67	[2] 7.56
1921	5.08	5.76	5.35	6.24	6.23	6.82	6.31	------	6.09
1922	7.86	8.42	9.33	8.95	9.09	8.45	5.04	[1] 5.90	[2] 8.13
1923	4.81	5.65	4.77	4.45	5.56	5.87	6.89	------	5.36
1924	4.34	4.97	4.57	5.81	5.92	6.64	6.53	[1] 5.19	[2] 5.70
1925	7.36	8.28	7.41	7.51	8.55	9.58	------	------	8.12

Division of Statistical and Historical Research. Compiled from New York Daily Fruit Reporter.
Monthly average obtained by taking simple average of reported averages of all sales of the following-named brands: Carmencita, Shamrock, Bird Rocks, Bowman, Advance, and Premium. Includes all sizes. Yearly average weighted by number of sales reported during each month.

[1] Ten sales or less during month. [2] See footnotes to figures used in obtaining this average.

TABLE 192.—*Oranges, Florida: Average auction price per box at New York, 1919–1925*

Season beginning October	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1919	[1] 3.16	2.80	3.95	4.22	6.43	6.63	9.40	8.32	------	------	[2] 5.91
1920	[1] 5.47	4.65	3.17	4.37	3.94	4.20	4.82	5.56	[1] 4.88	[1] 3.51	[2] 4.17
1921	3.06	4.18	4.29	3.95	4.85	6.68	7.15	8.06	8.99	[1] 9.79	[2] 5.44
1922	3.69	3.88	4.08	4.53	4.34	4.72	5.67	5.47	4.45	3.90	4.65
1923	[1] 3.11	3.55	2.68	2.84	3.02	3.16	3.51	3.85	4.88	[1] 4.81	[2] 3.27
1924	------	3.63	3.57	3.68	4.43	5.87	6.43	7.76	8.44	------	4.89
1925	7.80	6.80	4.00	------	------	------	------	------	------	------	------

Division of Statistical and Historical Research. Compiled from New York Daily Fruit Reporter.
Monthly average obtained by taking simple average of reported averages of all sales of "golden" grade. Includes all sizes. Yearly average weighted by number of sales reported during each month.

[1] Ten sales or less during month. [2] See footnotes to figures used in obtaining this average.

TABLE 193.—*Olive oil (including inedible): International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended December 31							
	Average 1909–1913 [3]		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria	[2] 974	[2] 11,566	246	20,830	171	24,516	167	28,654
Greece	------	22,272	127	36,464	77	8,528	165	19,649
Italy	[2] 6,643	75,130	9,321	40,510	1,116	94,557	335	93,730
Spain	30	86,454	9	102,472	1	125,463	[3] 1	[3] 87,515
Tunis	2,020	18,090	20	68,319	[4] 782	[4] 24,036	4,267	19,638
Yugoslavia [4]	------	------	3,752	170	1,446	4,565	860	1,310
PRINCIPAL IMPORTING COUNTRIES								
Argentina	48,248	------	[4] 47,716	------	[4] 64,399	------	[4] 64,639	------
Australia	510	11	[5] 992	[5] 1	[5] 1,034	([5] [6])	[4] [5] 1,053	([5] [6])
Belgium	[2] 4,295	[2] 582	2,386	207	2,565	123	2,076	53
Brazil	8,409	------	5,896	------	6,303	1	------	------
Bulgaria	4,003	7	2,448	([6])	3,036	------	2,048	------
Canada	1,593	------	1,744	------	2,188	------	2,528	------
Chile	7,255	------	5,635	------	10,350	------	------	------
Cuba	------	------	12,419	------	17,647	------	16,035	------
Denmark	146	------	186	------	173	18	135	10
Egypt	4,803	------	3,213	81	3,357	79	3,043	28
France	[2] 42,502	12,935	53,955	12,660	46,079	12,129	41,804	13,868
Germany	6,085	------	769	4	937	13	2,060	44
Japan	126	------	155	------	250	------	227	------
Macao (Portuguese China) [4]	------	------	2,930	1,173	5,687	4,234	4,732	4,470
Morocco	267	375	3,812	301	494	2	300	5,633
Netherlands	[2] 282	[2] 205	139	24	260	13	174	22
New Zealand	68	------	120	------	148	------	136	------
Norway	3,458	33	4,434	------	4,210	------	9,377	------
Peru	[2] 684	[2] 77	481	([6])	1,073	------	901	([6])
Philippine Islands	360	------	177	------	214	------	276	------
Portugal	[2] 2,020	[2] 5,492	[4] 6,850	[4] 235	4,033	1,678	1,240	2,609
Rumania	7,328	------	[4] 1,814	([4] [6])	2,156	([6])	1,549	1
Sweden	889	2	420	8	465	3	400	([6])
Switzerland	4,138	71	2,914	[4] 24	3,084	[4] 30	3,295	[4] 36
United Kingdom	22,950	823	17,136	190	17,853	367	18,872	302
United States	39,903	------	87,974	------	117,795	------	108,104	------
Uruguay	4,249	------	6,846	------	[7] 8,825	------	[4] 10,640	------
Other countries	40,415	24,633	15,190	835	15,803	7,165	11,291	708
Total	264,653	258,758	302,226	284,508	343,951	307,520	313,230	278,280

Division of Statistical and Historical Research. Official sources except where otherwise noted. Conversions made on the basis of 7.5 pounds to the gallon.

[1] International Institute of Agriculture, Oleaginous Products and Vegetable Oils.
[2] Four-year average.
[3] Six months.
[4] International Yearbook of Agricultural Statistics.
[5] Year beginning July 1.
[6] Less than 500 pounds.
[7] Eleven months.

FRUITS AND NUTS

TABLE 194.—*Fruits and nuts: Production and value in California, 1919–1925*

Crop and year	Production	Farm value	
		Per unit	Total
Apples:	*Bushels*		
1919	8,200,000	$1.45	$11,890,000
1920	6,000,000	1.60	9,600,000
1921	6,500,000	1.35	8,775,000
1922	7,850,000	.90	7,065,000
1923	10,500,000	.75	7,875,000
1924	8,903,000	1.22	10,862,000
1925	6,016,000	1.15	6,918,000
Pears:[1]	*Tons*		
1919	115,000	72.00	8,280,000
1920	102,000	90.00	9,180,000
1921	86,000	62.50	5,355,000
1922	150,000	50.00	7,500,000
1923	133,000	50.00	6,650,000
1924	133,000	65.00	8,645,000
1925	160,000	52.00	8,320,000
Peaches:[1]			
1919	430,000	60.00	25,800,000
1920	360,000	76.00	27,360,000
1921	310,000	41.60	12,910,000
1922	410,000	45.00	18,450,000
1923	380,000	24.00	9,120,000
1924	330,000	35.00	11,550,000
1925	390,000	37.00	14,430,000
Apricots:[1]			
1919	175,000	80.00	14,000,000
1920	110,000	85.00	9,350,000
1921	100,000	50.00	5,000,000
1922	145,000	70.00	10,150,000
1923	210,000	25.00	5,250,000
1924	142,000	46.00	6,532,000
1925	140,000	54.00	7,560,000
Prunes:[2]			
1919	135,000	240.00	32,400,000
1920	97,250	130.00	12,643,000
1921	100,000	130.00	13,000,000
1922	110,000	140.00	15,400,000
1923	130,000	100.00	13,000,000
1924	139,000	110.00	15,290,000
1925	140,000	110.00	15,400,000
Plums:[1 3]			
1919	42,000	60.00	2,520,000
1920	35,000	90.00	3,150,000
1921	42,000	53.00	2,226,000
1922	48,000	50.00	2,400,000
1923	69,000	30.00	2,070,000
1924	39,000	45.00	1,755,000
1925	51,000	45.00	2,295,000
Cherries:			
1919	12,400	150.00	1,860,000
1920	17,500	200.00	3,500,000
1921	13,000	125.00	1,625,000
1922	14,000	180.00	2,520,000
1923	17,000	160.00	2,720,000
1924	13,500	140.00	1,890,000
1925	11,000	160.00	1,760,000
Grapes (all):			
1922	1,801,000	41.00	73,841,000
1923	2,030,000	26.00	52,780,000
1924	1,535,000	35.00	53,725,000
1925	1,817,000	30.00	54,510,000
Raisins:[4]	*Tons*		
1919	182,500	$210.00	$38,325,000
1920	177,000	235.00	41,595,000
1921	145,000	190.00	27,550,000
1922	237,000	105.00	24,885,000
1923	290,000	70.00	20,300,000
1924	170,000	70.00	11,900,000
1925	180,000	80.00	14,400,000
Grapes (raisin varieties marketed fresh):[5]			
1923	130,000	35.00	4,550,000
1924	180,000	20.00	3,600,000
1925	378,000	25.00	9,450,000
Grapes (table):			
1919	200,000	$75.00	$15,000,000
1920	190,000	75.00	14,250,000
1921	210,000	75.00	15,750,000
1922	308,000	52.00	16,016,000
1923	312,000	35.00	10,920,000
1924	325,000	40.00	13,000,000
1925	324,000	24.00	7,776,000
Grapes (juice):			
1919	400,000	50.00	20,000,000
1920	375,000	75.00	28,125,000
1921	310,000	82.00	25,420,000
1922	450,000	65.00	29,250,000
1923	428,000	40.00	17,120,000
1924	350,000	63.00	22,050,000
1925	395,000	58.00	22,910,000
Oranges:[6]	*Boxes*		
1919	16,192,000	2.75	44,528,000
1920	22,030,000	2.18	48,025,000
1921	13,726,000	2.80	38,433,000
1922	21,091,000	2.00	42,182,000
1923	23,095,000	2.00	46,190,000
1924	18,100,000	2.10	38,010,000
1925	20,400,000	3.30	67,320,000
Grapefruit:			
1919	263,000		
1920	304,000		
1921	360,000		
1922	394,000		
1923	363,000		
1924	387,000		
1925	400,000		
Lemons:[6]			
1919	3,949,000	2.00	7,898,000
1920	5,255,000	2.92	15,345,000
1921	4,172,000	3.45	14,393,000
1922	3,492,000	3.30	11,524,000
1923	6,840,000	1.60	10,944,000
1924	5,125,000	2.40	12,300,000
1925	6,000,000	3.00	18,000,000
Figs:	*Tons*		
1919	12,000	150.00	1,800,000
1920	12,300	90.00	1,107,000
1921	9,600	145.00	1,392,000
1922	11,000	120.00	1,320,000
1923	9,500	90.00	855,000
1924	8,500	100.00	850,000
1925	9,500	110.00	1,045,000

[1] To calculate the production of pears, peaches, apricots, and plums in bushels, multiply the production in tons by 2,000 (the number of pounds in a ton) and divide by 48, the usual number of pounds in a bushel.

[2] Dried basis. To calculate in terms of fresh fruit multiply the quantity of dried prunes produced by 2½.

[3] The production shown includes a small quantity of prune varieties shipped fresh, but does not include prunes dried.

[4] Dried basis. To calculate the approximate quantity of fresh grapes used for raisins multiply the production of raisins by 4.

[5] For years prior to 1923 the quantity of raisins marketed fresh was small and has been included with other table grapes.

[6] Representing the commercial crop year beginning Nov. 1 of the year shown; the numbers for 1925, for instance, represent the fruit that set during the season of 1925 and will be picked and marketed from Nov. 1, 1925, to Oct. 31, 1926.

TABLE 194.—*Fruits and nuts: Production and value in California, 1919–1925*—Continued

Crop and year	Production	Farm value		Crop and year	Production	Farm value	
		Per unit	Total			Per unit	Total
Olives:	*Tons*			Almonds—Con.	*Tons*		
1919	8,800	$160.00	$1,408,000	1923	11,000	$260.00	$2,860,000
1920	8,000	95.00	760,000	1924	8,000	300.00	2,400,000
1921	8,200	90.00	738,000	1925	7,500	400.00	3,000,000
1922	10,000	125.00	1,250,000	Walnuts:			
1923	17,000	65.00	1,105,000	1919	28,100	550.00	15,455,000
1924	6,500	92.00	598,000	1920	21,000	400.00	8,400,000
1925	14,000	60.00	840,000	1921	19,500	400.00	7,800,000
Almonds:				1922	27,000	360.00	9,720,000
1919	7,250	440.00	3,190,000	1923	25,000	400.00	10,000,000
1920	5,500	360.00	1,980,000	1924	22,500	420.00	9,450,000
1921	6,000	320.00	1,920,000	1925	30,500	440.00	13,420,000
1922	8,500	290.00	2,465,000				

Division of Crop and Livestock Estimates; California estimates in cooperation with California Department of Agriculture. 1925 estimates are preliminary.

TABLE 195.—*Fruit: Shipments and value in Florida, 1919–1925*

Crop and year	Shipments	Farm value Dec. 1		Crop and year	Shipments	Farm value Dec. 1	
		Per unit	Total			Per unit	Total
Oranges:	*Boxes*			Limes:	*Boxes*		
1919	7,000,000	$2.50	$17,500,000	1919	28,000	$3.45	$97,000
1920	8,100,000	2.20	17,820,000	1920	26,000	3.10	81,000
1921	7,300,000	2.00	14,600,000	1921	33,000	2.75	91,000
1922	9,700,000	2.30	22,310,000	1922	35,000	2.90	102,000
1923	12,400,000	1.35	16,740,000	1923	40,000	3.00	120,000
1924	11,000,000	1.35	14,850,000	1924	36,000	3.25	117,000
1925	8,500,000	2.75	23,375,000	1925 [1]			
Grape fruit:				Pineapples:	*Crates*		
1919	5,500,000	1.85	10,175,000	1919	26,000	4.25	111,000
1920	5,100,000	2.30	11,730,000	1920	47,000	4.30	202,000
1921	6,000,000	1.70	10,200,000	1921	11,000	5.00	55,000
1922	7,200,000	1.90	13,680,000	1922	22,000	4.75	105,000
1923	8,000,000	1.20	9,600,000	1923	57,000	4.00	228,000
1924	8,200,000	1.30	10,660,000	1924	90,000	2.50	225,000
1925	5,500,000	2.00	11,000,000	1925 [1]			

Division of Crop and Livestock Estimates; 1925 estimates are preliminary.

[1] No data.

CRANBERRIES

TABLE 196.—*Cranberries: Production and farm value, United States, 1914–1925*

Year	Production, thousands of barrels	Price per barrel received by producers, Dec. 1	Farm value, thousands of dollars	Year	Production, thousands of barrels	Price per barrel received by producers, Dec. 1	Farm value, thousands of dollars
1914	697	$3.97	2,766	1920	449	$12.28	5,514
1915	441	6.59	2,908	1921	384	16.99	6,526
1916	471	7.32	3,449	1922	560	10.18	5,702
1917	249	10.24	2,550	1923	652	7.15	4,664
1918	352	10.77	3,791	1924	562	9.86	5,544
1919	549	8.37	4,597	1925 [1]	530	9.88	5,238

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 197.—*Cranberries: Production and total farm value, by States, 1924 and 1925*

State	Production, thousands of barrels		Price per barrel received by producers, Dec. 1		Farm value, thousands of dollars	
	1924	1925 [1]	1924	1925	1924	1925 [1]
Massachusetts	305	390	$10.00	$9.50	3,050	3,705
New Jersey	215	115	9.50	10.50	2,042	1,208
Wisconsin	42	25	10.75	13.00	452	325
Total	562	530	9.86	9.88	5,544	5,238

Division of Crop and Livestock Estimates.

[1] Preliminary.

GRAPES

TABLE 198.—*Grapes: Estimated production, by States, 1924 and 1925*

State	1924	1925 [1]	State	1924	1925 [1]
	Tons	*Tons*		*Tons*	*Tons*
Maine	38	48	North Carolina	6,600	4,950
New Hampshire	84	95	South Carolina	1,425	1,078
Vermont	37	49	Georgia	1,638	1,470
Massachusetts	440	473	Kentucky	1,094	972
Rhode Island	289	300	Tennessee	1,496	1,278
Connecticut	1,075	1,063	Alabama	825	880
New York	80,000	51,840	Mississippi	281	285
New Jersey	2,338	2,200	Arkansas	2,460	4,400
Pennsylvania	19,750	11,180	Louisiana	36	42
Ohio	20,400	13,750	Oklahoma	1,875	1,750
Indiana	3,185	2,450	Texas	1,320	940
Illinois	4,909	3,360	Idaho	240	270
Michigan	51,000	22,100	Colorado	280	260
Wisconsin	279	248	New Mexico	520	475
Minnesota	88	30	Arizona	350	419
Iowa	4,658	2,835	Utah	615	675
Missouri	5,840	5,760	Nevada	170	180
Nebraska	1,068	770	Washington	1,732	3,100
Kansas	2,925	2,216	Oregon	1,333	1,500
			California	1,535,000	1,817,000
Delaware	1,400	1,275			
Maryland	770	781	United States	1,763,742	1,967,160
Virginia	2,349	1,653			
West Virginia	1,539	760			

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 199.—*Grapes: Car-lot shipments, by State of origin, June, 1920, to December, 1925*

State	Crop movement season [1]					
	1920	1921	1922	1923	1924	1925 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New York	5,904	2,535	7,720	4,312	5,641	3,413
Pennsylvania	1,223	390	1,558	847	1,166	571
Ohio	62	72	80	92	29	8
Michigan	5,046	1,292	6,020	4,202	4,680	366
Iowa	104	77	237	217	79	49
Missouri	27	4	128	58	101	165
Washington	8	64	47	62	83	190
California [3]	28,832	33,344	43,952	55,348	57,695	75,021
Other States	104	39	177	198	459	638
Total [3]	41,310	37,817	59,919	65,336	69,933	80,421

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from June 1 through December of a given year.
[2] Preliminary.
[3] Figures for California include shipments in January of succeeding crop years as follows: 1920, 1 car; 1921, 2 cars; 1922, 7 cars; 1923, 13 cars; 1924, 8 cars; 1925, 35 cars.

TABLE 200.—*Grapes, fresh: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended December 31							
	Average 1909–1913 [1]		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria [1]	------	34,451	------	9,592	1	11,386	1	5,949
Argentina	[2] 816	------	[1] 248	------	92	1,203	116	905
Austria-Hungary [2]	11,238	52	------	------	------	------	------	------
Belgium	99	1,574	242	2,775	409	3,766	422	4,823
Cyprus [1]	------	1,187	------	599	------	1,233	------	------
France	19,459	50,578	11,665	5,816	11,423	10,902	9,318	59,384
Greece	------	710	[1] 33	4,181	[1] 20	7,690	[1] 73	6,838
Hungary [1]	1,338	17,610	111	6,679	------	2,062	------	722
Italy	195	64,192	45	12,172	41	29,378	167	88,576
Netherlands	959	541	569	3,071	1,781	2,418	1,157	5,152
Portugal [1]	3	15,008	1	11,773	37	11,609	------	------
Rumania [1]	4,104	2	------	110	12	957	6	4,675
Spain	------	97,819	6,533	86,978	6	100,565	[3] 10	[3] 205
PRINCIPAL IMPORTING COUNTRIES								
Austria	1,579	817	614	[1] 4	[1] 10,297	------	[1] 19,323	[1] 57
Brazil	[2] 3,923	------	2,962	------	2,047	------	------	------
Canada	5,539	(4)	7,623	(4)	10,957	(4)	11,225	(4)
Cuba	963	------	2,235	------	1,867	------	1,956	------
Denmark	742	(5)	1,715	(5)	1,610	1	2,070	1
Egypt	17,123	------	13,826	15	20,760	12	17,581	16
Germany	76,817	218	598	41	3,637	1	110,140	120
Irish Free State [1]	------	------	------	------	------	------	2,161	------
Norway	1,675	------	3,191	------	3,443	------	3,042	------
Russia	3,396	------	------	------	------	------	------	------
Sweden	754	------	1,232	------	1,248	------	1,409	------
Switzerland	9,175	89	13,209	8	16,375	1	17,859	14
United Kingdom	68,651	------	72,064	------	75,101	------	84,216	------
United States	36,643	------	35,217	13,825	21,585	19,856	2,804	20,576
Uruguay [1]	[6] 347	54	129	------	987	------	1,289	------
Other countries	2,200	63	702	301	2,045	736	11,606	206
Total	267,738	284,965	174,764	157,940	185,781	203,776	297,951	198,219

Division of Statistical and Historical Research. Official sources except where otherwise noted.

[1] International Institute of Agriculture.
[2] Four-year average.
[3] Six months.
[4] Not separately stated.
[5] Less than 500 pounds.
[6] Two-year average.

PEACHES

TABLE 201.—*Peaches: Production, United States, 1909–1925*

Year	Production	Year	Production	Year	Production
	Bushels		*Bushels*		*Bushels*
1909	*35,470,000*	1915	64,097,000	1921	32,602,000
1910	48,171,000	1916	37,505,000	1922	55,852,000
1911	34,880,000	1917	48,765,000	1923	45,382,000
1912	52,343,000	1918	33,094,000	1924	54,119,000
1913	39,707,000	1919	53,178,000	1925 [1]	46,565,000
1914	54,109,000	1920	45,620,000		

Division of Crop and Livestock Estimates. Census figures in italics.

[1] Preliminary.

TABLE 202.—*Peaches: Production, by States, 1916–1925*

[Thousand bushels—i. e., 000 omitted]

State	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925 [1]
New Hampshire	24	46	--	39	--	29	32	40	--	34
Massachusetts	66	144	--	213	4	185	200	205	50	218
Rhode Island	14	--	--	29	3	9	28	31	29	30
Connecticut	134	390	--	195	10	290	262	232	220	210
New York	1,238	4,823	700	1,262	2,600	1,700	3,400	1,700	2,178	1,920
New Jersey	689	990	832	1,653	2,134	347	2,000	2,642	2,550	1,740
Pennsylvania	1,069	1,848	720	1,100	2,000	350	1,560	1,907	1,715	600
Ohio	1,350	341	174	618	3,238	335	1,584	1,386	840	1,100
Indiana	888	518	--	82	405	26	650	445	310	380
Illinois	780	461	--	450	770	76	1,100	675	900	600
Michigan	2,010	744	85	448	1,500	358	1,440	1,125	464	592
Iowa	64	--	--	2	100	30	200	40	2	12
Missouri	1,050	728	--	1,263	1,427	--	2,300	1,040	860	870
Nebraska	30	--	--	--	5	--	81	45	--	33
Kansas	150	--	--	214	187	24	630	78	231	371
Delaware	346	324	136	227	203	7	320	225	370	155
Maryland	600	1,038	235	564	692	59	495	631	675	240
Virginia	660	928	510	682	1,092	52	764	504	1,500	362
West Virginia	520	900	680	760	992	48	715	526	937	100
North Carolina	897	1,978	1,150	575	1,539	644	1,010	260	2,500	1,500
South Carolina	545	1,030	998	390	832	566	845	550	800	740
Georgia	3,510	3,668	6,092	5,895	3,799	6,550	4,900	5,248	8,342	7,304
Florida	119	--	--	148	150	130	130	120	127	115
Kentucky	880	1,100	110	460	988	80	1,218	450	1,200	570
Tennessee	900	595	833	1,285	1,500	320	2,002	460	2,450	1,415
Alabama	1,110	1,281	2,440	1,083	974	1,230	810	779	1,230	1,312
Mississippi	400	--	--	776	412	322	375	260	700	712
Arkansas	750	1,824	217	3,340	117	435	2,040	1,110	2,700	2,200
Louisiana	587	--	--	382	269	264	180	175	230	275
Oklahoma	230	798	167	2,924	180	360	2,070	1,032	1,861	950
Texas	2,860	1,728	2,333	4,621	800	2,200	1,920	1,700	1,900	1,750
Idaho	25	211	51	293	42	150	244	252	102	23
Colorado	405	1,096	959	722	670	810	900	750	920	450
New Mexico	40	124	34	204	6	8	98	189	65	156
Arizona	56	--	--	140	48	54	128	70	50	65
Utah	84	1,365	1,050	884	471	763	885	802	750	110
Nevada	1	--	--	6	6	4	6	5	1	8
Washington	415	1,747	575	1,545	155	772	950	1,333	420	870
Oregon	276	273	93	504	100	105	300	500	189	222
California	11,733	15,724	11,920	17,200	15,200	12,910	17,080	15,830	13,751	16,251
United States	37,505	48,765	33,094	53,178	45,620	32,602	55,852	45,382	54,119	46,565

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 203.—*Peaches: Car-lot shipments by State of origin, May, 1920–October, 1925*

State	Crop movement season [1]					
	1920	1921	1922	1923	1924	1925 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New York	4,635	2,967	6,862	2,777	[5] 3,436	[3] 3,038
New Jersey	1,022	5	1,595	1,790	1,461	1,047
Pennsylvania	397	59	268	615	448	206
Ohio	1,025	88	620	625	14	509
Indiana	120	39	364	236	25	19
Illinois	557	35	1,683	390	860	579
Michigan	[4] 2,358	176	1,650	1,087	105	263
Delaware	168	2	422	258	635	148
Maryland	488	1	422	804	637	68
Virginia	280	----------	266	69	530	39
West Virginia	436	----------	19	170	326	2
North Carolina	379	594	1,452	215	1,657	1,933
Georgia	5,987	10,330	7,370	8,701	13,504	13,522
Tennessee	154	217	248	53	752	605
Arkansas	56	607	1,563	724	2,785	2,293
Oklahoma	----------	28	155	93	336	93
Texas	76	1,024	32	102	763	1,071
Idaho	189	105	124	392	47	2
Colorado	1,091	1,223	1,428	1,254	1,772	747
Utah	366	805	1,261	1,203	1,109	95
Washington	221	1,117	990	1,645	412	988
California	7,889	7,676	9,139	10,212	7,264	12,748
Other States	285	236	472	110	517	569
Total	[4] 28,179	27,334	38,405	33,525	[3] 39,395	[3] 40,584

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from May 1 through October of a given year.
[2] Preliminary.
[3] Includes one car in November.
[4] Includes three cars in November.

TABLE 204.—*Peaches: Estimated price per bushel, received by producers, United States, 1910–1925*

Year	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Weighted average	Year	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Weighted average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*		*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1910	------	------	110.9	115.1	122.8	113.3	1918	165.1	169.4	178.0	185.3	193.2	176.6
1911	135.0	151.0	138.0	129.0	131.0	138.2	1919	191.1	201.6	199.6	205.7	211.7	200.9
1912	119.2	112.1	108.3	110.0	105.0	111.2	1920	236.8	226.9	235.0	219.8	244.2	228.9
1913	------	130.5	126.2	136.3	145.0	131.3	1921	189.3	205.3	216.3	227.5	244.3	213.5
1914	------	120.4	105.0	102.2	105.3	108.7	1922	172.0	161.4	143.7	143.5	150.4	152.3
1915	------	99.5	85.4	81.1	85.2	88.2	1923	178.6	181.4	171.8	173.0	183.0	175.8
1916	119.6	109.1	114.9	118.3	112.1	115.0	1924	182.0	149.7	152.0	144.1	173.8	153.7
1917	170.3	144.8	143.3	143.8	160.6	148.0	1925	169.0	188.9	173.3	177.0	201.4	178.4

Division of Crop and Livestock Estimates.

TABLE 205.—*Peaches: Car-lot shipments by State of origin, 1920–1925*

State and year	Crop movement season [1]						
	May	June	July	Aug.	Sept.	Oct.	Total
New York:	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
1920				15	3,452	1,168	4,635
1921			4	1,712	1,233	18	2,967
1922			3	106	5,953	800	6,862
1923				10	2,166	601	2,777
1924				1	2,312	[2] 1,123	[4] 3,436
1925 [3]				39	2,828	[2] 171	[2] 3,038
New Jersey:							
1920			27	526	469		1,022
1921			1	4			5
1922			234	1,341	20		1,595
1923			85	1,285	420		1,790
1924			21	504	913	23	1,461
1925 [3]			77	909	61		1,047
Michigan:							
1920				37	2,175	[4] 146	[4] 2,358
1921				105	71		176
1922			3	850	775	22	1,650
1923				28	1,049	10	1,087
1924				3	55	47	105
1925 [3]				14	243	6	263
Georgia:							
1920	64	1,807	3,948	166	2		5,987
1921	1,286	3,630	5,399	15			10,330
1922	682	3,003	3,682	3			7,370
1923	1	2,238	5,898	564			8,701
1924	25	1,714	10,418	1,331	13	3	13,504
1925 [3]	312	4,567	8,486	150	7		13,522
Arkansas:							
1920		4	31	21			56
1921	2	9	574	22			607
1922		5	1,306	252			1,563
1923		2	198	524			724
1924		9	319	2,456	1		2,785
1925 [3]		1	2,120	172			2,293
Texas:							
1920			76				76
1921		219	802	3			1,024
1922		5	27				32
1923			47	55			102
1924			456	307			763
1925 [3]	2	20	1,040	9			1,071
Colorado:							
1920				62	1,025	4	1,091
1921				559	658	6	1,223
1922				455	965	8	1,428
1923				572	681	1	1,254
1924				484	1,282	6	1,772
1925 [3]			3	532	212		747
Utah:							
1920					366		366
1921				230	573	2	805
1922				5	1,256		1,261
1923					1,203		1,203
1924		1		264	844		1,109
1925 [3]		7	4	56	27	1	95
Washington:							
1920			6	26	187	2	221
1921			7	415	689	6	1,117
1922				159	823	8	990
1923			3	802	822	18	1,645
1924			6	341	65		412
1925 [3]			18	767	198	5	988
California:							
1920	2	210	2,736	3,332	1,601	8	7,889
1921		44	1,970	4,075	1,582	5	7,676
1922		64	138	5,300	3,353	284	9,139
1923		110	4,473	3,875	1,705	49	10,212
1924	3	65	2,720	3,276	1,157	43	7,264
1925 [3]		102	4,185	5,123	3,334	4	12,748
Other States:							
1920		77	378	2,141	1,606	276	4,478
1921	37	103	787	241	229	7	1,404
1922	13	112	2,205	3,457	634	94	6,515
1923		34	259	2,042	1,608	87	4,030
1924		84	659	4,716	1,247	78	6,784
1925 [3]	15	266	1,890	2,039	470	102	4,772

[1] Crop movement season extends from May 1 through October of a given year.
[2] Includes one car in November.
[3] Preliminary.
[4] Includes three cars in November.

TABLE 205.—*Peaches: Car-lot shipments by State of origin, 1920–1925*—Contd.

State and year	Crop movement season [1]						
	May	June	July	Aug.	Sept.	Oct.	Total
Total:	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
1920	66	2,098	7,202	6,326	10,883	[4] 1,604	[4] 28,179
1921	1,325	4,005	9,544	7,381	5,035	44	27,334
1922	695	3,189	7,598	11,928	13,779	1,216	38,405
1923	1	2,384	10,963	9,757	9,654	766	33,525
1924	28	1,873	14,599	13,683	7,889	[2] 1,323	[2] 39,395
1925 [3]	329	4,953	17,823	9,810	7,380	[2] 289	[2] 40,584

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from May 1 through October of a given year.
[2] Includes one car in November. [3] Preliminary. [4] Includes three cars in November.

TABLE 206.—*Peaches: Average l. c. l. price to jobbers at nine markets, 1921–1925*

Market Season beginning May	Six-basket carrier			Bushel basket				
	June [1]	July	Aug. [2]	June [1]	July	Aug. [2]	Sept.	Oct. [2]
New York:	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1921	3.34	3.04	5.00	-------	2.62	-------	-------	-------
1922	3.05	2.57	2.16	-------	2.29	1.90	1.78	1.43
1923	3.31	2.10	2.03	-------	2.18	2.16	2.48	1.94
1924	2.97	2.25	2.31	-------	1.74	2.18	2.09	2.46
1925	3.43	2.24	2.23	3.38	2.22	2.18	2.74	2.46
Chicago:								
1921	2.47	2.95	4.23	2.74	3.20	-------	-------	-------
1922	2.72	2.65	-------	2.76	2.51	1.91	1.70	1.38
1923	2.79	2.39	2.56	-------	2.76	3.06	2.11	2.25
1924	1.98	1.88	2.07	1.84	1.86	2.30	2.91	2.17
1925	3.11	2.35	3.01	3.08	2.45	3.16	2.72	2.38
Philadelphia:								
1921	2.73	2.86	4.28	-------	2.07	-------	-------	-------
1922	2.65	2.44	2.14	-------	-------	1.88	1.60	1.67
1923	2.98	2.24	2.70	-------	-------	-------	2.08	2.18
1924	2.56	1.94	2.41	-------	1.57	2.12	-------	1.57
1925	3.43	2.42	2.10	-------	2.41	2.22	-------	2.81
Pittsburgh:								
1921	2.59	2.87	4.29	-------	3.38	-------	-------	-------
1922	2.78	2.58	2.20	-------	2.89	2.47	1.62	1.84
1923	3.15	2.22	2.75	-------	2.32	2.79	2.01	2.09
1924	2.45	1.87	2.32	2.11	1.69	2.41	2.42	1.82
1925	3.07	2.35	2.91	3.10	2.47	3.07	2.92	2.19
St. Louis:								
1921	2.84	3.12	4.74	-------	3.27	-------	-------	-------
1922	2.74	2.48	-------	2.50	2.59	1.89	1.95	1.54
1923	2.35	2.17	3.01	-------	2.65	3.39	2.46	-------
1924	2.14	1.86	-------	2.11	1.82	2.32	2.76	2.13
1925	2.96	-------	-------	2.63	2.41	3.19	3.18	2.29
Cincinnati:								
1921	2.27	2.78	-------	2.42	3.02	-------	-------	-------
1922	2.21	2.13	-------	2.05	2.59	2.17	1.69	1.90
1923	2.55	1.96	2.20	-------	2.28	3.21	2.35	2.31
1924	2.05	1.49	1.50	1.68	1.64	2.42	2.75	1.78
1925	2.49	2.11	-------	2.51	2.16	3.16	2.90	-------
Minneapolis:								
1922	-------	2.49	-------	-------	-------	2.21	1.99	1.56
1923	-------	-------	-------	-------	-------	-------	2.53	2.20
1924	-------	1.91	2.25	-------	1.67	2.50	-------	-------
1925	-------	-------	-------	-------	2.83	2.97	-------	-------
Kansas City:								
1921	2.59	-------	-------	4.04	3.29	-------	-------	-------
1922	2.60	2.58	-------	-------	2.48	2.15	1.99	1.01
1923	-------	2.55	-------	-------	-------	3.24	2.25	1.98
1924	-------	2.17	-------	-------	1.89	1.94	2.45	-------
1925	3.12	2.45	-------	3.32	2.42	2.96	3.49	3.04
Washington:								
1924	2.90	2.11	2.27	-------	2.15	2.34	2.50	1.87
1925	3.47	2.48	2.60	-------	2.75	2.99	2.97	1.83

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division.

Average prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices.

[1] Quotations began June 3, 1921; May 25, 1922; June 5, 1923; June 3, 1924; June 1, 1925.
[2] Last reported quotations of season Aug. 9, 1921; Oct. 11, 1922; Oct. 13, 1923 and 1924; Oct. 3, 1925.

PEARS

TABLE 207.—*Pears: Production, United States, 1909–1925*

Year	Production	Year	Production	Year	Production
	Bushels		*Bushels*		*Bushels*
1909	*8,841,000*	1915	11,216,000	1921	11,297,000
1910	10,431,000	1916	11,874,000	1922	20,705,000
1911	11,450,000	1917	13,281,000	1923	17,845,000
1912	11,843,000	1918	13,362,000	1924	18,868,000
1913	10,108,000	1919	15,006,000	1925 [1]	19,820,000
1914	12,086,000	1920	16,805,000		

Division of Crop and Livestock Estimates. Census figures in italics.

[1] Preliminary.

TABLE 208.—*Pears: Production, by States, 1916–1925*

[Thousand bushes—i. e., 000 omitted]

State	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925 [1]
Maine	36	24	20	14	10	15	14	7	12	13
New Hampshire	25	19	15	17	18	17	24	12	17	19
Vermont	24	14	13	10	10	6	10	6	12	12
Massachusetts	114	71	77	84	83	45	84	58	84	90
Rhode Island	14	7	10	11	11	6	12	10	12	13
Connecticut	46	29	34	57	61	50	60	37	62	60
New York	1,675	1,708	1,352	1,830	2,700	1,650	3,200	1,000	2,100	3,045
New Jersey	687	590	650	402	690	185	405	662	624	512
Pennsylvania	509	448	518	421	845	220	576	612	629	468
Ohio	376	334	304	157	478	126	450	332	326	354
Indiana	351	410	260	107	375	70	300	334	180	209
Illinois	354	456	302	375	603	100	510	307	500	510
Michigan	1,007	1,080	704	405	1,044	532	1,500	1,005	810	450
Wisconsin	26	-------	-------	20	24	16	19	16	15	15
Iowa	63	82	32	30	90	5	75	62	40	45
Missouri	164	265	112	431	418	4	450	475	375	342
Nebraska	10	14	6	25	22	2	27	24	30	18
Kansas	106	140	38	221	41	7	243	134	262	165
Delaware	164	294	238	98	140	9	168	370	328	180
Maryland	378	525	455	287	421	35	256	374	335	280
Virginia	122	194	119	288	438	30	270	200	430	135
West Virginia	42	33	33	40	66	2	38	41	84	34
North Carolina	75	150	108	120	208	100	110	65	273	158
South Carolina	56	100	98	99	120	115	104	88	114	87
Georgia	135	140	188	178	173	171	202	192	232	155
Florida	54	46	132	43	24	40	50	35	55	54
Kentucky	160	204	140	55	132	4	150	70	117	85
Tennessee	59	75	112	115	200	65	180	83	250	148
Alabama	90	80	152	163	158	180	176	174	224	157
Mississippi	50	30	136	125	167	167	190	90	187	189
Arkansas	68	102	64	123	42	39	100	45	124	89
Louisiana	48	52	52	59	47	38	48	45	65	74
Oklahoma	11	45	38	250	42	36	197	100	235	146
Texas	322	280	246	637	338	406	390	340	483	386
Montana	6	11	6	6	6	7	8	8	-------	-------
Idaho	50	70	60	49	58	55	72	72	60	39
Colorado	99	320	194	345	386	502	519	400	550	510
New Mexico	36	46	56	67	32	24	18	49	28	56
Arizona	18	21	19	20	12	16	18	18	11	14
Utah	12	48	51	76	87	81	98	64	70	30
Nevada	2	6	6	4	5	3	4	7	6	7
Washington	551	595	1,300	1,781	1,140	1,710	1,740	2,700	1,750	2,300
Oregon	555	600	672	761	760	836	1,400	1,680	1,225	1,500
California	3,124	3,523	4,240	4,600	4,080	3,570	6,250	5,542	5,542	6,667
United States	11,874	13,281	13,362	15,006	16,805	11,297	20,705	17,845	18,868	19,820

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 209.—*Pears: Car-lot shipments by State of origin, June, 1920–May, 1925*

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
New York	3,979	2,893	5,461	1,701	2,978
New Jersey	74	23	40	76	60
Ohio	64	17	96	33	47
Indiana	71	------	44	39	61
Illinois	1,179	33	468	318	595
Michigan	1,264	653	1,860	543	394
Delaware	290	------	151	541	273
Maryland	54	3	36	63	30
Texas	98	115	50	99	129
Colorado	654	745	774	696	955
Utah	88	33	82	65	81
Washington	1,902	2,903	2,678	4,274	2,456
Oregon	1,006	985	1,862	2,575	1,483
California	5,016	4,500	6,465	7,143	6,312
Other States	202	150	314	423	392
Total	15,941	13,053	20,381	18,589	16,246

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from June 1 of one year through May of the following year.
[2] Preliminary.

TABLE 210.—*Pears: Estimated price per bushel received by producers, United States, 1910–1925*

Year	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Weighted average.	Year	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Weighted average.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*		*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1910	------	100.9	98.6	100.8	122.4	100.9	1918	168.4	157.8	147.5	140.1	156.6	161.1
1911	118.0	103.8	97.2	85.1	111.0	109.4	1919	188.4	183.0	181.3	182.0	219.5	185.7
1912	106.3	100.0	83.1	79.3	92.8	100.4	1920	195.5	197.9	184.2	170.1	164.5	194.1
1913	109.9	119.3	95.6	93.0	97.9	111.2	1921	165.2	175.1	186.4	194.9	198.7	172.2
1914	98.8	92.8	80.4	77.5	82.5	93.7	1922	147.1	------	116.2	119.8	118.7	139.7
1915	80.8	83.8	82.7	89.8	89.7	82.5	1923	168.3	172.5	165.1	150.2	133.0	165.5
1916	109.0	102.7	96.9	93.3	105.6	104.8	1924	175.2	157.8	155.0	141.0	------	165.4
1917	132.2	125.0	118.2	116.1	------	127.4	1925	172.6	165.2	164.2	149.7	162.6	168.2

Division of Crop and Livestock Estimates.

STRAWBERRIES

TABLE 211.—*Strawberries, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis-average price per season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*1,000 quarts*	*1,000 quarts*	*1,000 quarts*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Early:									
Alabama	3,660	3,960	3,440	7,686	5,544	5,504	1,076	832	771
Florida	3,810	3,100	3,170	8,382	5,735	6,023	1,509	1,606	1,626
Louisiana	14,350	14,600	10,340	18,655	17,885	10,340	4,664	4,471	3,516
Mississippi	970	1,190	1,180	1,649	1,428	1,298	297	243	247
Texas	900	1,070	980	1,350	1,284	1,078	256	282	194
Second early:									
Arkansas	16,960	15,200	14,860	16,960	22,800	10,402	2,544	3,192	1,560
California (S. district)	1,580	2,350	1,020	3,950	15,275	4,488	1,066	1,833	808
North Carolina	5,320	5,690	5,040	13,300	15,363	12,096	2,261	2,151	1,814
South Carolina	460	540	430	1,030	1,210	1,032	237	133	155
Tennessee	21,210	21,170	16,160	33,936	28,452	19,392	3,054	3,414	2,715
Virginia	6,500	10,700	8,300	14,300	22,470	23,240	1,144	1,798	3,021
Intermediate:									
California (other)	2,120	1,620	1,530	6,360	5,033	7,650	1,253	856	1,454
Delaware	6,100	6,100	5,600	14,640	14,640	8,960	1,903	1,464	1,344
Illinois	3,410	3,250	3,530	5,456	6,500	4,942	709	780	791
Indiana	2,000	1,980	1,800	3,800	3,960	2,160	418	436	410
Iowa	3,300	3,330	3,200	7,590	5,661	4,160	1,214	736	832
Kansas	280	460	540	560	1,012	648	101	101	110
Kentucky	5,080	4,370	3,980	9,921	5,454	3,184	1,389	764	573
Maryland	10,320	10,200	9,200	20,640	22,440	17,480	3,096	2,244	2,447
Missouri	10,560	11,000	13,000	10,560	17,600	27,300	1,584	2,640	5,187
New Jersey	5,500	5,400	4,000	7,700	12,096	3,840	1,155	1,331	538
Late:									
Michigan	6,000	5,580	4,960	8,400	11,160	2,480	1,092	1,562	422
New York	3,900	3,940	3,850	10,530	8,274	11,935	1,790	1,158	2,148
Ohio	2,800	2,660	2,600	5,600	5,320	2,340	840	692	538
Oregon	3,500	3,640	3,460	5,600	5,824	7,612	392	815	990
Pennsylvania	3,200	3,250	3,100	7,360	5,200	3,720	1,398	780	818
Washington	3,770	3,940	3,880	8,294	7,092	5,432	1,576	780	923
Wisconsin	800	940	850	1,600	1,880	850	240	226	153
Total	148,360	151,230	134,000	256,409	276,592	209,586	38,258	37,320	36,105

Division of Crop and Livestock Estimates.

TABLE 212.—*Strawberries, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per quart [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early:	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Qts.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Alabama	1,992	1,440	2,016	2,088	2,100	1,400	1,600	0.20	0.18	0.18	0.17	0.14	0.15	.14
Florida	1,856	1,984	1,440	1,984	2,200	1,850	1,900	.27	.24	.38	.28	.18	.28	.27
Louisiana	2,088	1,680	2,040	1,824	1,300	1,225	1,000	.26	.28	.27	.18	.25	.25	.34
Mississippi	1,800	1,824	1,440	2,016	1,700	1,200	1,100	.14	.14	.18	.17	.18	.17	.19
Texas	1,200	1,560	1,440	1,560	1,500	1,200	1,100	.12	.13	.29	.23	.19	.22	.18
Second early:														
Arkansas	1,800	1,560	1,440	1,680	1,000	1,500	700	.19	.18	.15	.11	.15	.14	.15
California (S. district)	2,520	2,400	2,440	2,352	2,500	6,500	4,400	.16	.16	.16	.17	.27	.12	.18
North Carolina	1,920	2,080	2,240	2,720	2,500	2,700	2,400	.19	.18	.26	.20	.17	.14	.15
South Carolina	1,920	1,920	1,920	2,240	2,240	2,240	2,400	.30	.28	.23	.25	.23	.11	.15
Tennessee	1,680	1,680	1,680	2,160	1,600	1,344	1,200	.17	.17	.20	.10	.09	.12	.14
Virginia	1,792	1,792	2,496	2,880	2,200	2,100	2,800	.19	.20	.20	.16	.08	.08	.13
Intermediate:														
California (other)	2,349	2,066	2,651	2,559	3,283	3,107	5,000	.15	.16	.26	.16	.18	.17	.19
Delaware	1,920	1,664	1,920	2,080	2,400	2,400	1,600	.18	.16	.14	.19	.13	.10	.15
Illinois	1,680	1,440	1,200	1,680	1,600	2,000	1,400	.19	.20	.16	.11	.13	.12	.16
Indiana	1,440	1,824	1,200	1,800	1,900	2,000	1,200	.15	.20	.22	.12	.11	.11	.19
Iowa	1,920	1,776	1,440	1,680	2,300	1,700	1,300	.16	.17	.21	.22	.16	.13	.20
Kansas	1,920	1,872	1,200	1,680	2,000	2,200	1,200	.19	.18	.17	.11	.18	.10	.17
Kentucky	1,080	1,560	1,800	2,040	1,953	1,248	800	.24	.21	.20	.15	.14	.14	.18
Maryland	1,600	1,600	1,856	1,920	2,000	2,200	1,900	.19	.18	.16	.16	.15	.10	.14
Missouri	1,992	1,488	1,440	1,872	1,000	1,600	2,100	.23	.24	.17	.12	.15	.15	.19
New Jersey	1,920	1,600	1,600	1,600	1,400	2,240	960	.22	.22	.22	.15	.15	.11	.14
Late:														
Michigan	1,920	1,680	1,200	1,680	1,400	2,000	500	.23	.24	.15	.11	.13	.14	.17
New York	1,920	1,600	1,920	2,080	2,700	2,100	3,100	.19	.23	.23	.25	.17	.14	.18
Ohio	1,800	1,752	1,728	1,632	2,000	2,000	900	.17	.18	.25	.10	.15	.13	.23
Oregon	1,800	1,728	2,160	1,920	1,600	1,600	2,200	.27	.35	.20	.10	.07	.14	.13
Pennsylvania	1,440	1,560	1,920	1,800	2,300	1,600	1,200	.25	.23	.25	.20	.19	.15	.22
Washington	1,680	1,704	2,280	2,160	2,200	1,800	1,400	.28	.28	.17	.20	.19	.11	.17
Wisconsin	1,920	1,872	1,320	1,800	2,000	2,000	1,000	.16	.18	.15	.12	.15	.12	.18
Average	1,793	1,666	1,731	1,961	1,728	1,829	1,564	.20	.21	.20	.15	.15	.13	.17

Division of Crop and Livestock Estimates.

[1] Average for season.

TABLE 213.—*Strawberries: Car-lot shipments by State of origin, 1920–1925*

State	1920	1921	1922	1923	1924	1925 [1]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New York	257	243	325	301	345	202
New Jersey	363	363	274	187	402	126
Illinois	112	73	260	224	367	295
Michigan	446	454	640	408	554	39
Missouri	245	451	1,963	872	990	1,497
Delaware	652	866	940	924	1,307	471
Maryland	793	1,132	1,634	1,916	2,155	1,088
Virginia	270	679	1,691	1,193	1,919	1,249
North Carolina	363	503	1,101	1,668	2,046	1,634
Florida	190	142	322	1,038	587	668
Kentucky	265	395	772	827	467	312
Tennessee	1,150	1,839	3,634	3,279	2,902	1,637
Alabama	139	285	460	693	408	421
Arkansas	650	1,087	2,165	1,342	1,613	1,004
Louisiana	626	1,525	1,576	1,678	1,865	1,076
California	258	292	201	226	191	130
Other States	428	528	803	1,028	855	406
Total	7,207	10,857	18,761	17,804	18,973	12,255

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Preliminary.

TABLE 214.—*Strawberries: Average l. c. l. price per quart to jobbers at nine markets, 1921–1925*

Market. Season beginning March	Mar.[1]	Apr.	May	June[2]
New York:	*Cents*	*Cents*	*Cents*	*Cents*
1921	47	41	27	20
1922	60	37	21	16
1923	65	43	20	18
1924	-------	41	20	13
1925	42	37	21	23
Chicago:				
1921	31	37	24	14
1922	45	29	14	12
1923	45	41	20	15
1924	-------	46	22	17
1925	50	43	21	25
Philadelphia:				
1921	33	34	23	13
1922	53	32	18	17
1923	55	40	18	15
1924	-------	41	19	10
1925	39	34	17	16
Pittsburgh:				
1921	34	34	26	20
1922	50	34	17	18
1923	62	41	22	16
1924	-------	49	24	16
1925	46	45	23	28
St. Louis:				
1921	31	33	23	14
1922	54	26	14	16
1923	49	40	18	-------
1924	-------	44	20	11
1925	45	37	18	-------

Market. Season beginning March	Mar.[1]	Apr.	May	June[2]
Cincinnati:	*Cents*	*Cents*	*Cents*	*Cents*
1921	33	27	23	-------
1922	53	18	12	-------
1923	48	30	15	10
1924	-------	40	17	15
1925	38	27	17	-------
Minneapolis:				
1921	37	41	31	24
1922	-------	29	18	14
1923	58	45	26	19
1924	-------	45	27	19
1925	51	48	24	30
Kansas City:				
1921	33	36	23	20
1922	-------	31	16	13
1923	46	40	21	16
1924	-------	40	22	15
1925	46	42	21	-------
Washington:				
1924	-------	31	17	12
1925	-------	27	15	-------

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division.

Average prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa, in order to obtain comparability.

[1] Quotations began Mar. 17, 1921; Mar. 23, 1922; Mar. 28, 1923; Mar. 31, 1924; Mar. 19, 1925.
[2] Last reported quotations of season June 3, 1921; June 6, 1922; June 13, 1923; June 17, 1924; June 9, 1925.

ASPARAGUS

TABLE 215.—*Asparagus for consumption fresh, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
Early:	*Acres*	*Acres*	*Acres*	*1,000 crates*[1]	*1,000 crates*[1]	*1,000 crates*[1]	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California	8,100	6,710	8,000	1,555	1,188	1,216	8,055	3,992	3,928
Georgia	2,020	2,660	2,820	111	32	54	467	144	174
South Carolina	2,080	3,500	4,500	125	105	166	410	392	511
Late:									
Delaware	510	720	1,050	41	50	50	191	192	153
Illinois	2,440	2,640	2,700	220	211	224	521	490	414
Iowa	140	140	140	10	10	9	20	19	15
Maryland	440	1,200	1,600	25	84	115	62	143	214
Michigan	190	280	320	17	15	24	52	41	63
New Jersey	4,200	5,800	7,000	399	383	504	994	1,157	1,638
New York	140	(2)	(2)	8	(2)	(2)	44	(2)	(2)
Pennsylvania	750	800	1,000	49	58	55	210	276	211
Washington	450	520	720	36	30	58	114	55	106
Total	21,460	24,970	29,850	2,596	2,166	2,475	11,140	6,901	7,427

Division of Crop and Livestock Estimates.

[1] 24-pound crates.
[2] Not reported.

TABLE 216.—*Asparagus for consumption fresh, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per crate [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Crts.	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Early:														
California	150	150	165	170	192	177	152	2.19	2.12	1.95	4.29	5.18	3.36	3.23
Georgia	56	40	60	62	55	12	19	2.68	2.84	2.81	3.62	4.21	4.50	3.23
South Carolina	76	81	79	68	60	30	37	2.60	2.25	2.87	3.28	3.28	3.73	3.08
Late:														
Delaware	62	66	68	64	80	70	48	3.42	3.67	4.12	4.70	4.67	3.84	3.06
Illinois	98	99	98	77	90	80	83	1.96	2.27	2.10	2.00	2.37	2.32	1.85
Iowa	70	72	76	76	75	70	64	1.80	1.20	2.00	1.77	2.00	1.93	1.70
Maryland	57	57	59	55	56	70	72	3.50	3.00	2.88	2.69	2.48	1.70	1.86
Michigan	65	68	68	80	90	55	75	3.84	2.88	3.12	2.50	3.06	2.72	2.63
New Jersey	68	76	70	75	95	66	72	1.90	2.46	5.54	5.41	2.49	3.02	3.25
New York	70	72	70	52	60	[2]	[2]	4.32	4.80	3.00	5.41	5.50	[2]	[2]
Pennsylvania	74	70	68	78	65	72	55	6.50	7.50	4.25	7.20	4.28	4.75	3.83
Washington	----	----	----	----	80	58	80	----	----	----	----	3.16	1.82	1.82
Average	95	97	104	106	121	87	83	2.39	2.48	2.76	4.19	4.29	3.19	3.00

Division of Crop and Livestock Estimates.

[1] Average for season.
[2] Not reported.

TABLE 217.—*Asparagus for canning, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*Tons*	*Tons*	*Tons*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California	20,480	23,200	26,400	38,900	48,700	47,500	3,902	4,807	3,770
New York	110	130	130	200	200	100	39	42	25
Total	20,590	23,330	26,530	39,100	48,900	47,600	3,941	4,849	3,795

Division of Crop and Livestock Estimates.

TABLE 218.—*Asparagus for canning, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per ton						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
California	1.7	1.5	1.2	1.7	1.9	2.1	1.8	85.58	106.00	70.00	83.30	100.30	98.70	79.36
New York	1.8	1.8	1.8	1.3	1.5	1.7	.9	164.75	190.00	160.00	187.50	195.00	208.00	249.00
Average	1.7	1.5	1.2	1.7	1.9	2.1	1.8	85.92	106.38	70.94	83.69	100.79	99.16	79.73

Division of Crop and Livestock Estimates.

TABLE 219.—*Asparagus: Car-lot shipments, by State of origin, March, 1920–July, 1925*

State	Crop movement season [1]					
	1920	1921	1922	1923	1924	1925 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New Jersey	465	237	154	64	156	150
Illinois	164	170	161	93	157	165
South Carolina	89	129	143	154	185	263
Washington	1	2	5	10	10	31
California	502	362	304	458	[3] 718	[4] 1,281
Other States	5	2	----------	6	9	18
Total	1,226	902	767	785	[3] 1,235	[4] 1,908

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from March 1 through July of a given year.
[2] Preliminary.
[3] Includes 6 cars in February.
[4] Includes 10 cars in February.

BEANS

TABLE 220.—*Beans, snap, for table consumption, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
Early:	*Acres*	*Acres*	*Acres*	*1,000 hampers* [1]	*1,000 hampers* [1]	*1,000 hampers* [1]	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Alabama	700	1,060	680	54	52	45	92	109	68
California	1,980	2,000	2,000	697	450	430	2,697	472	752
Florida	14,460	19,780	20,530	1,865	1,434	1,663	3,581	3,651	4,922
Georgia	650	1,850	1,260	68	104	66	162	128	108
Louisiana	1,840	4,800	7,090	129	422	525	330	1,156	662
Mississippi	2,540	2,800	2,120	147	157	142	184	279	227
North Carolina	2,140	2,630	3,290	340	316	329	456	228	457
South Carolina	4,600	4,490	3,540	511	364	304	1,175	517	669
Texas	3,210	3,030	4,730	302	361	364	806	892	553
Virginia	3,100	3,720	3,720	223	480	424	502	888	738
Late:									
Illinois	580	600	550	52	48	37	63	77	65
Maryland	3,830	2,550	2,750	306	178	275	398	239	228
New Jersey	4,520	8,400	10,000	755	1,092	1,150	1,178	1,889	1,242
Tennessee	720	2,260	1,400	50	264	147	62	248	206
Total	44,870	59,970	63,660	5,499	5,772	5,901	11,686	10,773	10,897

Division of Crop and Livestock Estimates.

[1] 1-bushel hampers.

TABLE 221.—*Beans, snap, for table consumption, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per hamper [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early:	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Alabama	112	95	89	144	77	49	66	2.30	2.75	1.95	1.51	1.71	2.10	1.52
California	267	308	358	175	352	225	215	1.50	1.60	1.54	2.88	3.87	1.05	1.75
Florida	106	105	125	102	129	75	81	2.00	1.88	2.05	2.26	1.92	2.46	2.96
Georgia	120	100	120	150	105	56	52	1.30	1.42	1.50	1.50	2.38	1.23	1.63
Louisiana	163	178	165	78	70	88	74	2.36	2.23	2.75	1.58	2.56	2.74	1.26
Mississippi	90	74	76	109	58	56	67	1.64	1.40	1.93	1.05	1.25	1.78	1.60
N. Carolina	178	180	128	93	159	120	100	1.58	1.85	1.02	1.50	1.34	.72	1.39
S. Carolina	96	82	128	125	111	81	86	1.77	2.07	2.28	1.79	2.30	1.42	2.20
Texas	198	138	170	58	94	119	77	2.38	2.50	1.75	1.00	2.67	2.47	1.52
Virginia	178	182	175	198	72	129	114	2.04	2.12	1.81	1.00	2.25	1.85	1.74
Late:														
Illinois					90	80	67					1.21	1.61	1.76
Maryland	144	205	142	142	80	70	100	1.50	1.39	1.56	1.50	1.30	1.34	.83
New Jersey	144	181	121	120	167	130	115	1.39	1.45	1.40	2.18	1.56	1.73	1.08
Tennessee	70	100	110	100	70	117	105	1.65	1.85	1.80	.88	1.25	.94	1.40
Average	137	154	149	113	123	96	93	1.76	1.74	1.85	1.88	2.13	1.87	1.85

Division of Crop and Livestock Estimates.

[1] Average for season.

TABLE 222.—*Beans, snap, for canning, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*Tons*	*Tons*	*Tons*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Arkansas	(1)	660	1,020		1,300	2,400		65	120
California	1,060	620	700	3,700	1,700	1,400	247	106	112
Colorado	750	1,200	1,650	2,600	3,600	5,000	156	216	283
Delaware	(1)	240	870		500	1,300		22	68
Indiana	(1)	600	1,130		600	2,700		37	135
Louisiana	460	590	720	500	500	1,400	25	25	73
Maine	460	950	1,210	900	2,100	2,500	45	126	150
Maryland	950	2,500	2,950	2,500	2,800	4,400	130	170	264
Michigan	1,290	1,990	3,000	1,000	2,200	4,500	62	125	266
Mississippi	(1)	1,120	1,360		1,100	1,400		55	74
New York	4,570	5,900	6,370	9,100	13,000	15,900	741	1,110	1,359
Oregon	750	1,040	1,200	1,900	3,100	4,800	119	194	289
Pennsylvania	430	480	710	900	1,200	1,400	36	54	68
South Carolina	(1)	890	1,160		1,100	2,900		54	128
Tennessee	390	670	780	600	1,000	1,400	26	80	78
Utah	290	360	380	600	1,000	1,000	28	50	55
Washington	280	400	460	900	1,100	1,800	58	59	84
Wisconsin	2,830	3,400	3,610	5,700	3,700	7,200	358	263	527
Other States	1,900	1,420	1,700	3,400	2,100	2,600	175	114	136
Total	16,410	25,030	30,980	34,300	44,300	66,000	2,206	2,925	4,269

Division of Crop and Livestock Estimates.

[1] Included in other States.

TABLE 223.—*Beans, snap, for canning, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per ton						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Arkansas [1]	----	----	----	----	----	2.0	2.4	----	----	----	----	----	50.00	50.00
California	4.8	3.7	4.3	4.5	3.5	2.8	2.0	59.28	55.58	50.00	62.50	66.67	62.50	80.00
Colorado	4.1	2.4	3.3	2.5	3.5	3.0	3.0	53.33	65.00	50.00	56.67	60.00	60.00	56.67
Delaware [1]	----	----	----	----	----	2.2	1.5	----	----	----	----	----	44.33	52.50
Indiana [1]	----	----	----	----	----	1.0	2.4	----	----	----	----	----	61.33	50.00
Louisiana	3.0	1.8	2.0	2.0	1.0	.8	2.0	40.00	40.00	48.00	45.00	50.00	50.00	52.50
Maine	2.3	1.4	2.0	2.0	2.0	2.2	2.1	61.67	60.00	50.00	50.00	50.00	60.00	60.00
Maryland	2.2	2.7	2.5	2.0	2.6	1.1	1.5	58.70	60.83	60.00	52.50	52.12	60.62	59.91
Michigan	1.0	1.0	.8	1.2	.8	1.1	1.5	74.17	64.38	70.00	55.50	62.50	57.00	59.00
Mississippi [1]	----	----	----	----	----	1.0	1.0	----	----	----	----	----	50.00	52.50
New York	2.2	2.0	2.4	2.0	2.0	2.2	2.5	51.54	67.00	67.23	72.00	81.39	85.41	85.46
Oregon	3.3	2.6	3.2	2.5	2.5	3.0	4.0	53.33	58.96	56.67	61.67	62.50	62.50	60.18
Pennsylvania	2.4	1.4	2.2	2.0	2.0	2.6	2.0	57.09	57.49	57.43	40.00	40.00	45.00	48.75
South Carolina [1]	----	----	----	----	----	1.2	2.5	----	----	----	----	----	49.38	44.00
Tennessee	2.2	2.3	2.0	2.0	1.6	2.4	1.8	46.60	56.66	55.00	37.78	43.33	50.00	56.60
Utah	3.5	3.2	3.0	2.0	2.0	2.9	2.5	53.33	60.00	55.00	47.50	46.88	50.00	54.62
Washington	3.1	2.6	3.0	4.3	3.3	2.7	4.0	55.00	45.00	50.00	51.67	64.17	54.00	46.67
Wisconsin	2.4	1.9	1.9	3.0	2.0	1.1	2.0	57.09	74.17	73.00	55.00	62.86	71.00	73.19
Other States	3.0	1.8	2.0	2.0	1.8	1.5	1.5	56.98	53.89	53.80	54.04	51.35	54.44	52.17
Average	2.5	2.0	2.3	2.4	2.1	1.8	2.1	55.32	62.87	60.79	58.74	64.31	66.03	64.68

Division of Crop and Livestock Estimates.

[1] Included in other States previous to 1924.

TABLE 224.—*Beans, snap: Car-lot shipments by State of origin, 1920–1925*

State	1920	1921	1922	1923	1924	1925 [1]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New York	43	28	11	33	81	68
New Jersey	90	111	68	15	100	47
Maryland	159	22	149	49	136	128
Virginia	155	79	268	101	899	626
North Carolina	133	128	219	261	559	480
South Carolina	142	331	503	585	517	311
Florida	547	407	750	1,848	1,093	1,952
Tennessee	20	23	63	81	243	84
Mississippi	105	79	252	47	85	88
Louisiana	35	202	90	107	439	679
Texas	7	39	26	88	210	417
Other States	37	151	232	113	251	241
Total	1,473	1,600	2,631	3,328	4,618	5,121

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Preliminary.

CABBAGE

TABLE 225.—*Cabbage, commercial crop: Acreage, production, and total value, by States, 1923–1925* [1]

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*Tons*	*Tons*	*Tons*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Early:									
California	5,300	5,670	6,000	37,100	35,200	42,000	1,581	1,361	788
Florida	2,050	4,920	4,610	16,400	41,800	29,500	764	1,590	920
Louisiana	1,640	2,460	3,980	7,400	12,300	21,900	414	637	512
Texas	4,440	10,720	14,460	22,200	107,200	76,600	710	2,344	915
Second early:									
Alabama	2,250	1,200	3,000	16,900	7,800	15,000	841	393	408
Georgia	220	220	210	1,200	1,300	1,200	43	40	25
Mississippi	4,770	3,380	2,820	16,700	14,500	11,000	812	762	301
North Carolina	440	640	620	3,300	3,200	5,000	99	193	128
South Carolina	3,450	2,610	3,600	39,700	15,700	34,200	2,300	628	787
Virginia (Eastern Shore and Norfolk)	3,750	4,000	3,700	22,500	32,000	27,400	622	1,177	855
Intermediate:									
Illinois	1,400	1,400	1,400	7,000	11,200	8,400	118	199	420
Iowa	1,200	1,080	780	6,600	8,100	3,900	110	87	124
Kentucky	300	360	240	1,500	2,300	1,700	45	58	76
Maryland	2,050	890	800	12,300	7,100	4,800	402	176	175
Missouri	800	750	750	4,800	4,500	6,000	135	126	294
New Jersey	4,100	4,000	3,000	22,600	29,600	15,600	898	639	624
New Mexico	360	200	120	2,100	1,200	800	105	46	33
New York (Long Island)	4,200	4,200	3,150	20,400	29,400	26,500	486	644	727
Ohio (Washington County)	550	700	650	4,100	4,900	5,200	132	122	234
Tennessee	1,200	800	820	8,400	6,400	4,900	218	111	102
Virginia (southwest)	2,620	2,750	3,000	18,300	21,700	15,600	413	310	1,041
Washington	890	1,060	1,120	7,100	8,500	12,300	414	377	552
Late:									
Colorado	5,270	4,010	2,000	75,400	44,100	23,000	558	419	542
Indiana	1,300	1,730	1,320	13,000	13,700	9,500	177	88	78
Michigan	3,290	3,390	2,510	32,200	32,500	24,600	300	243	289
Minnesota	3,340	2,720	3,390	25,100	25,800	26,800	304	195	552
New York (except Long Island)	22,680	23,380	22,220	170,100	266,500	233,300	2,825	1,564	2,977
Ohio (except Washington County)	4,020	4,060	3,000	36,200	39,800	27,000	370	534	280
Oregon	830	920	920	4,200	6,000	3,700	148	150	92
Pennsylvania	2,750	920	900	13,800	8,300	9,000	329	76	256
Wisconsin	13,480	13,530	12,800	128,100	119,100	125,400	1,266	1,060	1,292
Total	104,880	108,670	107,890	805,700	961,700	851,800	17,939	16,349	16,399

Division of Crop and Livestock Estimates.

[1] Includes sauerkraut.

TABLE 226.—*Cabbage for sauerkraut, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*Tons*	*Tons*	*Tons*	*1,000 Dollars*	*1,000 Dollars*	*1,000 Dollars*
Colorado	380	90	100	5,800	1,000	1,300	46	8	10
Illinois	490	730	420	5,900	5,800	3,400	55	41	26
Indiana	1,120	460	220	12,300	3,700	1,500	100	26	10
Michigan	1,970	1,310	1,190	20,700	13,000	11,900	178	82	78
Minnesota	410	460	420	3,000	5,000	4,200	21	25	29
New York	5,000	3,060	2,170	43,500	44,400	26,700	469	270	172
Ohio	3,090	1,810	1,410	28,700	18,100	12,700	305	136	104
Washington	390	290	330	3,100	2,300	4,000	37	21	40
Wisconsin	3,680	2,540	1,970	37,500	23,900	19,700	316	212	133
Other States	1,080	460	460	6,100	4,000	4,400	55	37	58
Total	17,610	11,210	8,690	166,600	121,200	89,800	1,582	858	660

Division of Crop and Livestock Estimates.

TABLE 227.—*Cabbage, commercial crop: Yield per acre and price, 1919–1925*[1]

State	Yield per acre							Price per ton [2]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Early:														
California	4.0	7.1	7.0	6.0	7.0	6.2	7.0	36.00	18.47	13.84	26.33	42.62	38.66	18.76
Florida	6.0	6.8	6.0	7.0	8.0	8.5	6.4	35.20	42.40	25.60	21.96	46.57	38.03	31.20
Louisiana	4.0	8.2	6.4	6.0	4.5	5.0	5.5	52.50	40.20	13.42	20.00	55.90	51.75	23.40
Texas	5.0	4.8	4.0	5.0	5.0	10.0	5.3	41.73	29.70	7.21	9.72	31.99	21.87	11.94
Second early:														
Alabama	7.0	7.8	8.0	8.5	7.5	6.5	5.0	37.00	39.00	27.76	22.20	49.76	50.34	27.20
Georgia	7.0	7.8	7.0	5.0	5.5	6.0	5.7	47.00	37.33	35.50	25.28	35.87	30.76	20.99
Mississippi	5.5	8.4	6.0	5.0	3.5	4.3	3.9	37.20	34.20	39.47	20.00	48.60	52.57	27.40
North Carolina	3.5	7.5	6.5	6.0	7.5	5.0	8.1	80.00	60.00	30.00	34.40	30.00	60.46	25.60
South Carolina	7.5	7.4	9.7	7.5	11.5	6.0	9.5	71.45	53.52	24.00	23.47	57.93	40.00	23.00
Virginia (Eastern Shore and Norfolk)	6.5	5.8	8.8	8.0	6.0	8.0	7.4	32.42	40.44	35.10	29.21	27.66	36.79	31.20
Intermediate:														
Illinois	5.0	8.1	5.0	8.0	5.0	8.0	6.0	19.10	18.15	26.64	6.39	16.92	17.76	50.00
Iowa	4.5	8.0	5.0	8.0	5.5	7.5	5.0	36.00	34.00	37.19	9.36	16.69	10.70	31.81
Kentucky	8.6	6.6	6.0	6.0	5.0	6.5	7.0	25.00	25.00	21.99	21.00	30.00	25.00	45.00
Maryland	8.0	5.8	4.8	5.0	6.0	8.0	6.0	26.00	18.00	24.70	14.67	32.71	24.83	36.53
Missouri	8.0	8.0	8.1	7.0	6.0	6.0	8.0	41.67	43.57	44.79	30.00	28.12	28.10	49.00
New Jersey	7.5	8.1	6.5	8.0	5.5	7.4	5.2	29.37	21.27	18.65	21.80	39.75	21.60	40.00
New Mexico	7.0	6.0	8.0	9.0	7.0	6.0	7.0	20.00	26.00	28.00	22.57	50.22	38.64	41.25
New York (Long Island)	7.5	9.0	7.8	9.2	7.0	7.0	8.4	20.10	17.16	31.80	15.51	16.53	21.89	27.45
Ohio (Washington County)	7.0	8.0	9.0	8.2	7.5	7.0	8.0	50.00	65.00	45.00	20.50	32.22	25.00	45.00
Tennessee	6.0	4.0	6.1	7.0	7.0	8.0	6.0	26.20	37.40	32.00	19.60	25.97	17.34	20.74
Virginia (southwest)	7.5	12.2	6.0	9.0	7.0	7.9	5.2	31.71	18.54	42.50	17.59	22.58	14.29	66.73
Washington	10.0	10.2	8.0	9.0	8.0	8.0	11.0	53.33	22.40	44.27	24.07	58.27	44.34	44.87
Late:														
Colorado	10.0	15.1	11.7	12.0	14.3	11.0	11.5	20.00	9.04	24.55	4.27	7.40	9.50	23.57
Indiana	6.3	9.8	6.0	7.0	10.0	7.9	7.2	25.80	25.75	32.89	10.21	13.61	6.42	8.21
Michigan	6.8	10.7	6.5	11.0	9.8	9.6	9.8	15.00	14.78	22.73	5.65	9.33	7.48	11.75
Minnesota	8.0	8.9	5.0	9.0	7.5	9.5	7.9	19.74	21.19	22.50	5.75	12.12	7.56	20.60
New York (except Long Island)	6.5	11.6	6.5	9.0	7.5	11.4	10.5	16.75	8.67	25.24	6.44	16.61	5.87	12.76
Ohio (except Washington County)	7.0	9.9	5.7	8.3	9.0	9.8	9.0	22.67	20.00	18.33	15.14	10.21	13.42	10.37
Oregon	11.0	7.7	9.5	7.0	5.0	6.5	4.0	32.50	20.00	30.00	25.00	35.18	25.00	24.86
Pennsylvania	8.0	10.3	6.0	8.0	5.0	9.0	10.0	20.00	12.00	31.55	15.22	23.84	9.16	28.44
Wisconsin	7.2	10.0	6.0	11.0	9.5	8.8	9.8	18.57	8.51	23.61	4.97	9.88	8.90	10.30
Average	6.7	8.9	6.6	8.1	7.7	8.8	7.9	25.48	17.90	24.60	12.20	22.27	17.00	19.25

Division of Crop and Livestock Estimates.

[1] Includes sauerkraut.
[2] Average for season.

TABLE 228.—*Cabbage for sauerkraut, commercial crop: Yield per acre and price per ton, 1919–1925*

State	Yield per acre							Price per ton						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
Colorado	11.4	14.2	11.7	12.0	15.3	11.0	13.0	15.00	8.00	13.00	12.65	8.00	8.00	8.00
Illinois	4.3	7.0	4.8	7.7	12.0	8.0	8.0	14.62	15.69	20.83	7.45	9.33	7.00	7.75
Indiana	6.0	7.0	----	8.0	11.0	8.0	7.0	8.00	7.50	------	6.90	8.12	7.00	7.00
Michigan	5.7	8.0	10.0	12.0	10.5	9.9	10.0	8.78	7.65	12.45	6.41	8.58	6.33	6.58
Minnesota	6.2	4.9	7.0	10.0	7.4	10.8	10.0	10.50	10.00	7.16	7.00	7.00	5.00	7.00
New York	6.1	8.8	8.0	10.0	8.7	14.5	12.3	12.00	10.46	13.04	7.05	10.79	6.07	6.45
Ohio	5.6	7.5	8.3	11.0	9.3	10.0	9.0	12.83	8.36	14.34	5.29	10.61	7.50	8.20
Washington	11.2	11.3	8.0	14.5	8.0	8.0	12.0	15.15	12.00	16.00	10.00	12.00	9.00	10.00
Wisconsin	7.3	8.6	10.6	11.0	10.2	9.4	10.0	9.59	7.64	14.31	5.30	8.43	8.89	6.75
Other States	7.2	6.6	11.4	8.2	5.5	8.7	9.5	11.30	14.50	16.76	9.75	9.75	9.33	13.24
Average	6.1	8.1	9.0	10.3	9.5	10.8	10.3	11.27	9.49	13.51	6.60	9.50	7.08	7.35

Division of Crop and Livestock Estimates.

TABLE 229.—*Cabbage: Car-lot shipments by State of origin, January, 1920–April, 1925*

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
New York	9,511	9,310	[3] 10,274	9,086	11,816
Pennsylvania	239	301	406	317	409
Ohio	524	318	589	538	658
Illinois	156	107	144	289	279
Michigan	598	477	908	732	644
Wisconsin	4,766	2,908	5,875	6,415	4,955
Minnesota	895	592	1,192	989	1,552
Iowa	373	150	566	390	541
Maryland	219	325	448	220	509
Virginia	1,542	3,541	2,946	3,343	3,390
North Carolina	49	251	213	364	263
South Carolina [4]	904	3,247	3,235	4,299	1,530
Florida [4]	4,579	1,619	2,998	1,172	3,842
Kentucky	112	103	73	85	107
Tennessee	136	181	563	270	348
Alabama [4]	379	1,001	1,364	1,564	908
Mississippi	878	509	1,629	1,134	605
Louisiana [4]	254	313	334	456	103
Texas [4]	5,180	1,847	4,049	1,356	7,281
Colorado	1,832	2,523	1,964	3,174	1,473
Washington	114	170	104	155	52
California	1,424	882	738	683	370
Other States	363	358	520	474	429
Total [4]	35,027	31,033	[3] 41,132	37,505	42,064

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season for cabbage becomes important in the South in January and continues for 16 months ending in April with final shipments from northern points.

[2] Preliminary.

[3] New York includes 1 car in May, 1923.

[4] Figures for certain States include in the January shipments, cars moved in preceding calendar year as follows—1920: Florida, 10 cars in December; Louisiana, 4 cars in December; Texas, 2 cars in November, 23 in December. 1921: Florida, 1 car in October, 1 in November, 13 in December; South Carolina, 2 cars in December; Texas, 25 cars in December. 1922: Alabama, 1 car in December; Florida, 15 cars in December; South Carolina, 1 car in November, 32 in December; Texas, 4 cars in November, 110 in December. 1923: Alabama, 3 cars in December; Florida, 19 cars in December; Louisiana, 2 cars in November, 13 in December; South Carolina, 11 cars in November, 152 in December; Texas, 22 cars in November, 39 in December. 1924: Florida, 72 cars in December; Louisiana, 1 car in November, 7 in December; South Carolina, 24 cars in November, 167 in December; Texas, 9 cars in November, 64 in December.

TABLE 230.—*Cabbage, Danish: Monthly range and average l. c. l. price per ton [1] to jobbers at eight markets, 1918–1925*

Market. Season beginning October [1]	October		November		December		January		February		March	
	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average
Chicago:	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1918							18–42	28.00	20–46	29.58	35–50	41.72
1919	22–30	25.82	25–65	35.64	60–80	68.00	75–115	96.56	50–110	70.17		
1920	8–13	11.15	8–15	11.09	12–17	14.15	12–25	18.25	8–17	14.07	11–16	14.10
1921	[3] 40–45	[3] 41.85	[3] 40–65	[3] 47.03	[3] 45–60	[3] 52.43	38–55	44.20	30–43	36.60		
1922 [3]			15–22	16.60	20–26	24.20	22–40	30.20	38–75	48.00	34–70	60.20
1923			10–24	17.00	20–30	22.60	28–40	33.20	27–40	32.00		
1924					[4] 25–40	[4] 30.20	[3] 30–33	[3] 30.85	[3] 25–30	[3] 28.00	[3] 20–30	[3] 25.68
1925	[4] 20–25	[4] 22.40	[4] 35–55	[4] 40.00	35–50	42.25						
Cincinnati:												
1918							20–40	32.42	27–40	34.14	40–70	49.16
1919	30–50	40.55	35–55	45.00	60–85	76.67	80–130	113.00	65–125	99.52		
1920	10–25	18.78	10–28	19.23	8–18	13.83	12–30	19.25	17–25	20.30	7–25	16.62
1921	30–50	42.10	25–55	42.74	50–60	55.12	30–65	51.80	35–50	46.40		
1922	18–28	24.20	10–20	14.20	18–30	26.20	17–40	29.20	37–70	46.20	50–75	63.60
1923	25–38	31.60	18–30	23.20	15–35	27.80	25–45	39.00	35–60	40.40	30–80	51.00
1924	18–25	22.20	10–30	18.60	17–32	22.00	23–35	29.20	15–30	25.00	12–25	18.40
1925	18–35	25.59	25–40	32.92	30–55	39.69						
Kansas City: [5]												
1918							1.00–3.00	2.09	1.25–2.50	1.84	2.50–5.00	3.13
1919	1.50–2.35	1.97	1.50–3.00	1.92	3.50–4.50	3.96	3.50–7.00	5.50	4.00–7.00	5.18		
1920	1.00–2.00	1.42	.75–1.00	.84	.75–1.25	1.00	.75–1.75	1.39	.75–1.50	1.05	.50–1.00	.78
1921	1.50–2.50	2.06	1.75–3.25	2.61	3.00–3.50	3.16	3.00–3.50	3.26	2.00–2.75	2.43		
1922	.60–1.25	.90	.50–.85	.66	.75–1.50	1.22	1.25–2.00	1.62	2.00–4.00	2.85	3.25–5.00	3.84
1923	[6] .90–1.50	[6] 1.18	[6] .90–1.50	[6] 1.07	[6] .90–1.50	[6] 1.24	[6] 1.50–3.00	[6] 2.22	[6] 1.50–2.25	[6] 1.89	[6] 1.50–2.25	[6] 1.97
1924			.75–1.25	.97	1.25–1.75	1.37	1.50–1.75	1.71	1.65–1.75	1.71	1.60–1.75	1.69
1925	[5] 1.00–1.50	[5] 1.21	[5] 1.75–2.00	[5] 1.79	[5] 1.75–3.00	[5] 2.51						
New York:												
1918							15–40	27.73	18–45	27.07	35–65	42.36
1919			30–50	37.94	50–80	71.67	80–125	108.67	75–115	87.40	90–110	98.33
1920			14–25	18.64	13–18	15.21	14–25	18.67	12–18	14.50	12–20	16.06
1921	35–42	39.23	35–50	41.52	42–55	49.50	45–58	52.00	35–45	40.40	35–50	42.20
1922	18–25	20.20	10–25	15.80	20–28	23.60	20–33	26.60	32–60	41.60	45–70	63.20
1923	22–32	26.60	15–28	20.20	20–35	27.20	22–40	33.20	28–75	39.40	35–75	48.80
1924	15–20	17.60	14–25	18.40	15–24	18.60	22–35	28.80	8–38	22.60	10–25	15.40
1925	18–28	23.16	22–40	29.24	33–55	37.54						
Philadelphia:												
1918							23–40	29.03	20–42	30.16	35–65	43.93
1919	25–40	33.78	30–45	35.05	60–100	74.00	90–125	113.18				
1920			9–25	16.42	10–20	13.40	10–30	17.80	10–18	14.10		
1921	27–40	36.94	30–50	36.04	40–60	48.54	30–68	47.80	25–45	35.40	40–50	44.40
1922	15–22	17.40	7–23	14.20	15–30	21.80	15–35	25.00	25–60	35.60	20–75	47.60

1923	20–33	26.40	15–25	19.00	15–35	25.40	25–43	32.60	25–65	42.80	35–65	50.40
1924	10–20	15.40	8–23	14.60	12–25	17.20	15–40	26.60	10–40	22.00	8–16	12.20
1925	12–35	19.67	18–35	26.77	28–50	35.50						
Pittsburgh:												
1918									[7] 20–35	[7] 28.14	[7] 28–60	[7] 38.84
1919					[7] 62–67	[7] 65.00	90–130	118.24	60–110	89.50		
1920	15–27	22.50	13–30	18.69	12–17	14.00	15–30	20.67	13–20	15.92	10–16	13.11
1921	[7] 28–37	[7] 32.21	[7] 30–53	[7] 44.07	45–55	52.91	43–63	51.60	38–55	44.20	35–55	47.20
1922	18–30	23.23	8–20	15.40	18–50	31.40	15–30	25.00	25–70	41.20	50–90	63.20
1923	23–40	30.20	15–28	22.00	22–32	26.80	25–40	31.60	25–80	42.80	35–80	48.00
1924	12–22	17.00	11–22	16.40	12–25	17.60	20–35	26.20	12–35	24.60	[4] 20–38	[4] 27.60
1925	15–25	21.50	22–35	26.76	25–50	35.41						
St. Louis:												
1918							18–60	36.24	15–40	27.75	25–65	43.80
1919	25–44	34.50	24–60	38.94	50–75	68.00	80–125	112.86	80–120	102.92		
1920	12–40	24.37	8–20	16.68	10–23	18.17	10–40	22.14	15–25	19.60		
1921	32–55	43.94	35–50	44.70	48–60	52.97	45–60	51.40				
1922					17–35	26.00	20–55	27.40	40–85	56.80	55–90	66.40
1923			12–30	21.60	20–30	27.80	25–60	42.80	30–55	41.20	35–60	45.20
1924	13–30	20.00	10–25	17.80	15–40	24.00	25–35	30.60	20–35	28.80	23–30	27.60
1925	15–30	21.64	25–50	34.80	30–60	43.11						
Washington:												
1923	35–40	37.60	25–40	28.80	30–35	33.60	30–45	38.60	40–45	41.20		
1924	25–30	26.60	16–25	20.40	25–30	26.80	35–50	40.20	30–35	33.60		
1925	25–35	31.24	30–40	35.00	40–60	42.72						

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division. Average prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa, in order to obtain comparability.

[1] Unless otherwise stated, quotations are on bulk per ton sales.
[2] The season during which Danish cabbage prices are obtainable usually runs from October to March of the following year.
[3] Sacked per ton delivered.
[4] Converted from hundredweight price.
[5] Bulk per hundredweight.
[6] Converted from ton price.
[7] Car-lot sales.

TABLE 231.—*Cabbage: Estimated price per 100 pounds, received by producers, of United States, 1910–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	2.27	1.89	1.94	1.58	1.36	1.49	1.56	1.48	1.26	1.33	1.38	2.46	1.57
1911	2.93	2.47	1.94	1.58	1.51	1.83	1.89	2.24	2.88	3.17	2.98	2.67	2.23
1912	2.29	1.88	1.25	1.08	1.04	1.15	1.26	1.19	1.03	1.15	1.58	2.18	1.28
1913	2.64	2.15	1.79	1.69	1.58	1.75	1.87	2.07	2.03	2.24	2.05	2.61	1.95
Av. 1910–1913	2.53	2.10	1.73	1.48	1.37	1.56	1.64	1.74	1.80	1.97	2.00	2.48	1.76
1914	2.66	1.74	1.50	1.31	1.14	1.26	1.36	1.41	1.38	1.99	2.53	2.34	1.60
1915	1.95	1.61	1.24	1.00	.97	1.07	1.17	1.21	1.38	1.50	1.93	2.27	1.33
1916	2.15	2.26	2.17	2.40	2.61	3.04	3.95	5.65	6.77	7.61	7.53	5.10	4.45
1917	3.23	2.19	1.76	1.79	2.66	2.28	2.74	3.26	2.86	2.98	3.23	3.55	2.62
1918	3.41	2.96	2.45	2.16	1.99	2.05	2.19	2.33	2.71	3.79	4.97	4.68	2.83
1919	4.23	3.73	3.08	2.88	2.74	3.49	4.31	5.05	5.25	5.59	6.75	5.47	4.31
1920	4.71	3.28	2.03	1.95	1.67	1.77	1.91	1.86	1.71	2.03	3.10	4.04	2.19
Av. 1914–1920	3.19	2.54	2.03	1.93	1.97	2.14	2.52	2.97	3.15	3.64	4.29	3.92	2.76
1921	3.95	3.16	2.61	2.39	2.42	2.77	3.05	3.09	3.02	3.10	3.68	3.36	2.92
1922	2.96	2.12	1.72	1.55	1.46	1.63	2.11	2.42	3.00	3.62	4.01	4.11	2.44
1923	3.85	3.20	2.90	2.59	2.12	2.30	2.56	2.76	3.01	3.28	3.50	3.57	2.84
1924	3.16	2.76	2.34	2.13	2.01	2.24	2.37	2.52	2.44	2.48	3.23	3.29	2.47
1925	3.79	3.30	2.79	2.40	2.28	2.65							

Division of Crop and Livestock Estimates.

CANTALOUPES

TABLE 232.—*Cantaloupes, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
Early:	*Acres*	*Acres*	*Acres*	*1,000 crates* [1]	*1,000 crates* [1]	*1,000 crates* [1]	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California (Imperial)	26,100	30,200	27,560	4,776	5,738	4,961	10,794	8,377	8,682
Florida	2,520	760	370	86	78	28	200	126	49
Georgia	5,070	2,980	610	223	289	67	446	329	119
Texas (lower valley)	1,100	1,050	750	151	105	26	486	253	119
Intermediate:									
Arizona	2,000	4,000	6,000	450	800	1,320	450	944	990
Arkansas	3,900	4,500	7,960	179	378	462	333	711	647
California (Turlock and other)	6,770	7,460	10,120	1,219	1,044	1,417	2,365	1,253	1,190
Delaware	3,200	3,300	3,450	464	317	414	770	539	373
Illinois	720	370	400	73	30	52	131	44	47
Indiana	3,550	3,280	3,600	327	495	468	458	886	613
Maryland	4,900	5,500	5,460	725	550	885	1,791	1,023	912
Missouri	260	[2]	[2]	26	[2]	[2]	29	[2]	[2]
Nevada	1,400	930	980	164	102	129	246	153	174
North Carolina	2,290	2,570	1,960	229	193	235	234	133	268
Oklahoma	100	150	350	4	15	41	6	16	46
South Carolina	1,070	500	360	77	52	33	115	45	43
Texas (other)	870	3,790	2,730	64	265	191	151	244	283
Late:									
Colorado	8,620	7,900	9,000	1,078	1,146	1,476	1,822	1,375	1,210
Iowa	930	900	1,000	83	54	46	83	65	41
Kansas	180	780	450	18	98	58	30	118	48
Michigan	1,700	1,600	1,200	223	104	200	301	170	314
New Jersey	3,860	4,200	4,000	594	727	760	1,307	1,970	1,330
New Mexico	1,400	2,100	2,600	234	420	390	316	496	546
Tennessee	880	360	660	132	65	79	317	68	87
Washington	770	1,330	1,510	146	262	275	320	403	352
Total	84,160	90,510	93,080	11,745	13,327	14,013	23,501	19,741	18,483

Division of Crop and Livestock Estimates.

[1] Standard crate.
[2] Not reported.

TABLE 233.—*Cantaloupes, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per crate [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Crts.	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Early:														
California (Imperial)	209	182	173	140	183	190	180	2.17	1.83	1.63	3.61	2.26	1.46	1.75
Florida	116	124	150	100	34	102	75	1.00	.75	1.62	3.19	2.33	1.61	1.75
Georgia	122	164	195	100	44	97	110	1.17	1.45	1.33	1.54	2.00	1.14	1.78
Texas (lower valley)	146	162	98	150	137	100	35	5.00	3.00	2.00	1.37	3.22	2.41	4.56
Intermediate:														
Arizona	160	170	172	180	225	200	220	1.75	1.75	1.25	1.35	1.00	1.18	.75
Arkansas	83	79	87	65	46	84	58	1.62	2.20	1.46	1.71	1.86	1.88	1.40
California (Turlock and other)	162	170	156	126	180	140	140	1.21	.93	.90	.85	1.94	1.20	.84
Delaware	118	111	96	155	145	96	120	.93	.90	1.18	1.54	1.66	1.70	.90
Illinois	156	160	165	160	102	80	130	1.08	1.25	.86	1.71	1.80	1.47	.91
Indiana	152	140	125	110	92	151	130	1.56	1.24	1.48	1.73	1.40	1.79	1.31
Maryland	174	135	154	160	148	100	162	1.25	1.28	1.12	1.99	2.47	1.86	1.03
Missouri	166	150	147	100	100	[2]	[2]	2.25	2.00	1.62	2.01	1.11	[2]	[2]
Nevada	145	146	80	90	117	110	132	1.70	1.65	1.35	1.75	1.50	1.50	1.35
North Carolina	126	116	126	110	100	75	120	1.05	1.03	1.30	1.03	1.02	.69	1.14
Oklahoma	----	----	125	60	40	100	118	----	----	1.25	1.67	1.44	1.07	1.12
South Carolina	110	100	90	100	72	104	92	1.00	1.16	1.38	1.28	1.49	.87	1.31
Texas (other)	146	162	60	65	74	70	70	1.45	1.62	1.08	1.44	2.36	.92	1.48
Late:														
Colorado	165	150	182	100	125	145	164	1.25	1.60	.84	1.75	1.69	1.20	.82
Iowa	172	135	126	80	89	60	46	1.62	1.50	1.25	1.50	1.00	1.20	.90
Kansas	----	----	----	90	100	125	130	----	----	----	1.25	1.69	1.20	.82
Michigan	166	140	125	115	131	65	167	1.60	2.00	1.70	1.25	1.35	1.63	1.57
New Jersey	158	160	174	182	154	173	190	.73	.84	.97	1.41	2.20	2.71	1.75
New Mexico	160	200	180	125	167	200	150	1.25	1.25	.85	1.45	1.35	1.18	1.40
Tennessee	150	158	175	140	150	180	120	1.12	1.38	1.25	1.50	2.40	1.05	1.10
Washington	160	217	194	193	190	197	182	1.75	1.50	1.20	2.25	2.19	1.54	1.28
Average	154	166	149	124	140	148	151	1.53	1.51	1.30	2.25	2.00	1.48	1.32

Division of Crop and Livestock Estimates.

[1] Average for season.
[2] Not reported.

TABLE 234.—*Cantaloupes:[1] Car-lot shipments by State of origin, April, 1920–November, 1925*

State	Crop movement season [2]					
	1920	1921	1922	1923	1924	1925 [3]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Indiana	632	644	894	681	822	1,087
Michigan	209	232	465	306	114	146
Delaware	600	942	843	818	511	657
Maryland	781	1,153	1,233	1,270	699	1,116
North Carolina	358	894	700	620	401	655
South Carolina	131	281	270	70	116	29
Georgia	387	619	1,632	217	586	117
Arkansas	986	1,554	1,002	337	1,052	1,203
Texas	169	156	186	387	456	500
Colorado	2,482	3,288	4,420	2,306	3,229	3,692
New Mexico	968	508	275	364	518	574
Arizona	1,159	1,504	1,558	1,208	2,145	3,829
Washington	380	208	371	207	298	226
California	[4] 13,251	13,166	15,304	16,486	19,932	[5] 18,717
Other States	460	666	777	646	617	1,080
Total	[4] 22,953	25,815	29,930	25,923	31,496	[5] 33,628

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Includes honeydews and other miscellaneous melons not separately reported until 1923. The shipments of melons, other than cantaloupes, amounted in 1923 to 1,152 cars; in 1924, to 2,565; and in 1925, to 3,665.
[2] Crop-movement season extends from April 1 through November of a given year.
[3] Preliminary.
[4] Includes 1 car in December.
[5] Includes 17 cars in December.

CAULIFLOWER

TABLE 235.—*Cauliflower, commercial crop: Acreage, production, and total value, by States, year beginning October, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*1,000 crates*	*1,000 crates*	*1,000 crates*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California [1]	7,260	6,550	6,610	2,105	1,703	2,148	2,736	1,430	2,320
Colorado	260	400	1,000	72	64	160	131	115	163
New Jersey	-------	130	300	-------	18	39	-------	25	54
New York	3,500	4,350	5,550	1,015	652	771	2,223	1,206	1,079
Oregon [1]	510	1,400	1,600	117	280	320	170	406	445
Virginia	50	70	70	13	18	14	24	36	20
Total	11,580	12,900	15,130	3,322	2,735	3,452	5,284	3,218	4,081

Division of Crops and Livestock Estimates.

[1] Season of California and Oregon begins in October of the previous year.

TABLE 236.—*Cauliflower, commercial crop: Yield per acre and price, year beginning October, 1919–1925*

State	Yield per acre						Price per crate [1]					
	1920	1921	1922	1923	1924	1925	1920	1921	1922	1923	1924	1925
	Crts.	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
California	273	268	300	290	260	325	1.25	1.00	1.97	1.30	.84	1.08
Colorado	-------	-------	-------	275	160	160	-------	-------	-------	1.82	1.80	1.62
New Jersey	-------	-------	-------	-------	140	130	-------	-------	-------	-------	1.40	1.38
New York	252	274	221	290	150	139	1.84	2.00	2.79	2.19	1.85	1.40
Oregon	231	270	270	230	200	200	1.25	1.25	2.10	1.45	1.45	1.39
Virginia	-------	-------	-------	265	250	195	-------	-------	-------	1.85	2.00	1.40
Average	267	269	280	287	212	228	1.36	1.24	2.13	1.59	1.18	1.18

Division of Crop and Livestock Estimates.

[1] Average for season.

TABLE 237.—*Cauliflower: Car-lot shipments by State of origin, July, 1920–June, 1925*

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
New York	781	567	683	653	734
Michigan	2	4	1	34	67
Colorado	-------	3	4	101	61
Oregon	76	134	282	374	109
California	2,957	3,629	3,604	3,054	3,404
Other States	37	26	34	87	80
Total	3,853	4,363	4,608	4,303	4,455

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from July 1 through June of the following year.
[2] Preliminary.

CELERY

TABLE 238.—*Celery, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*1,000 crts.*	*1,000 crts.*	*1,000 crts.*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Early: Florida	3,200	4,000	4,320	1,680	1,900	2,000	3,562	4,693	5,200
Late:									
California	6,170	6,330	5,890	1,154	1,386	1,290	2,250	2,065	2,270
Colorado	670	720	800	201	248	336	233	727	380
Michigan	4,120	4,110	3,860	639	645	780	920	1,296	1,318
New Jersey	840	1,370	1,510	420	522	569	592	611	984
New York	4,000	4,790	4,780	1,048	1,676	1,386	1,803	2,363	1,719
Ohio	800	710	680	157	124	160	232	182	264
Oregon	150	300	380	62	112	124	129	248	184
Pennsylvania	400	380	380	116	128	112	177	308	172
Total	20,350	22,710	22,600	5,477	6,741	6,757	9,948	12,493	12,491

Division of Crop and Livestock Estimates.

TABLE 239.—*Celery, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per crate [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Crts.	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Crts.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Early: Florida	516	528	576	487	525	475	463	8.45	6.75	4.27	2.95	2.12	2.47	2.60
Late:														
California	240	255	255	210	187	219	219	2.72	2.86	2.06	2.63	1.95	1.49	1.76
Colorado	330	300	330	300	300	345	420	2.00	1.67	1.33	1.91	1.41	2.93	1.13
Michigan	170	181	168	180	155	157	202	1.00	1.16	1.62	1.42	1.44	2.01	1.69
New Jersey	300	345	375	315	500	381	377	1.75	1.28	1.67	2.01	1.41	1.17	1.73
New York	300	345	323	260	262	350	290	1.56	1.43	1.67	1.15	1.72	1.41	1.24
Ohio	249	208	202	202	196	174	235	2.06	2.34	1.63	2.01	1.48	1.47	1.65
Oregon	------	------	435	375	413	375	327	------	------	2.10	2.67	2.08	2.21	1.48
Pennsylvania	360	330	357	315	290	337	294	3.33	4.00	3.00	2.21	1.53	2.41	1.54
Average	279	290	305	262	269	297	299	3.46	3.00	2.52	2.20	1.82	1.85	1.85

Division of Crop and Livestock Estimates.

[1] Average for season.

TABLE 240.—*Celery: Car-lot shipments by State of origin, June, 1920–May, 1925*

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
New York	3,110	3,047	3,248	3,741	4,529
New Jersey	94	219	115	219	177
Pennsylvania	186	224	212	223	225
Ohio	46	67	76	55	64
Michigan	954	1,031	1,626	1,486	1,332
Florida	4,218	4,954	6,398	7,219	7,953
Colorado	305	211	222	125	197
Oregon	16	53	82	205	363
California	3,472	2,617	4,337	4,693	4,415
Other States	23	[3] 19	52	76	84
Total	12,424	[3] 12,442	16,368	18,042	19,339

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from June 1 of one year through May of the following year, except in Florida, where the season extends through June.

[2] Preliminary.

[3] Texas includes 1 car in May, 1921.

CORN

TABLE 241.—*Corn, sweet, for canning, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*Tons*	*Tons*	*Tons*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Delaware	4,200	4,400	3,800	11,800	8,400	10,300	118	101	185
Illinois	46,000	60,560	70,000	119,600	103,000	168,000	1,447	1,399	2,401
Indiana	19,670	21,000	31,000	47,200	35,700	74,400	519	526	1,103
Iowa	45,610	55,500	70,000	118,600	83,200	175,000	1,059	795	1,950
Maine	13,000	13,390	15,630	39,000	36,200	43,800	1,073	1,053	1,303
Maryland	32,000	32,500	33,500	73,600	58,500	90,400	967	859	1,597
Michigan	8,200	11,000	17,500	13,100	13,200	43,800	163	195	626
Minnesota	15,600	21,000	26,000	40,600	52,500	52,000	395	497	535
Nebraska	5,000	7,000	10,000	10,000	12,600	22,000	89	116	241
New Hampshire	960	1,200	1,600	2,800	3,400	4,200	64	83	105
New York	20,840	26,000	30,000	29,200	46,800	63,000	565	917	1,307
Ohio	23,430	27,450	32,000	56,200	38,400	102,400	599	409	1,394
Pennsylvania	2,580	3,200	4,500	4,900	6,400	16,200	56	113	307
Vermont	2,700	2,500	3,100	7,300	7,000	8,100	110	140	162
Wisconsin	11,000	13,720	18,000	24,200	17,800	45,000	253	212	555
Other States	1,800	2,370	3,750	5,200	4,700	8,600	86	63	120
Total	252,590	302,790	370,380	603,300	527,800	927,200	7,563	7,478	13,891

Division of Crop and Livestock Estimates.

TABLE 242.—*Corn, sweet, for canning, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per ton						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Delaware	2.0	1.8	2.0	2.7	2.8	1.9	2.7	16.80	15.60	9.00	10.00	10.00	12.00	18.00
Illinois	2.2	2.2	2.6	2.2	2.6	1.7	2.4	13.80	19.75	12.67	9.77	12.10	13.58	14.29
Indiana	2.4	2.5	2.9	2.5	2.4	1.7	2.4	14.93	18.50	12.00	10.00	11.00	14.74	14.83
Iowa	2.6	2.3	2.8	3.0	2.6	1.5	2.5	13.27	15.60	8.60	7.20	8.93	9.55	11.14
Maine	3.5	3.1	3.2	2.5	3.0	2.7	2.8	34.62	30.00	27.60	27.50	27.51	29.10	29.76
Maryland	2.0	2.6	2.5	2.5	2.3	1.8	2.7	21.88	23.00	11.70	10.00	13.14	14.69	17.67
Michigan	2.0	2.0	2.2	2.0	1.6	1.2	2.5	16.96	14.46	15.00	11.41	12.42	14.76	14.30
Minnesota	2.4	2.5	2.8	2.0	2.6	2.5	2.0	14.19	15.00	10.40	9.14	9.73	9.46	10.28
Nebraska	1.5	2.0	2.9	2.6	2.0	1.8	2.2	11.66	12.33	15.00	8.33	8.88	9.18	10.94
New Hampshire	3.0	2.8	2.9	2.2	2.9	2.8	2.6	29.12	25.00	22.85	22.70	22.73	24.40	25.00
New York	2.0	2.0	2.3	2.0	1.4	1.8	2.1	19.11	22.28	18.29	17.82	19.36	19.59	20.74
Ohio	2.5	2.0	2.5	2.2	2.4	1.4	3.2	16.37	18.67	10.29	8.70	10.66	10.64	13.61
Pennsylvania	2.2	2.2	2.7	2.4	1.9	2.0	3.6	18.50	17.00	14.00	10.00	11.33	17.72	18.93
Vermont	2.5	2.2	2.3	2.0	2.7	2.8	2.6	20.00	20.00	15.00	15.00	15.00	20.00	19.94
Wisconsin	2.4	2.0	2.8	2.5	2.2	1.3	2.5	14.41	15.50	11.22	10.54	10.46	11.93	12.33
Other States	2.1	2.6	2.9	2.7	2.9	2.0	2.3	16.17	15.91	13.59	13.98	16.47	13.50	14.00
Average	2.3	2.3	2.6	2.4	2.4	1.7	2.5	17.69	19.32	13.50	10.99	12.54	14.17	14.98

Division of Crop and Livestock Estimates.

TABLE 243.—*Corn, canned: Production in the United States, 1917–1925*

[Thousand cases [1]—i. e., 000 omitted]

State	1917	1918	1919	1920	1921	1922	1923	1924	1925
Maine	567	1,113	1,652	1,588	911	1,066	923	1,294	1,693
New York	257	489	1,014	829	564	616	434	749	1,311
Ohio	1,200	1,584	1,360	1,544	850	1,073	1,390	787	2,375
Indiana	742	513	586	861	709	665	1,208	846	2,223
Illinois	2,422	2,199	2,225	2,271	1,711	1,939	2,833	2,310	4,030
Wisconsin	166	373	635	590	576	625	648	388	1,148
Minnesota	202	309	456	643	573	598	898	1,199	1,541
Iowa	2,280	2,300	2,496	3,246	1,190	1,959	2,382	1,764	4,105
Maryland	2,002	2,033	2,081	2,217	1,130	1,944	2,256	1,707	3,678
Other States	965	809	1,045	1,251	629	934	1,134	1,087	2,216
United States	10,803	11,722	13,550	15,040	8,843	11,419	14,106	12,131	24,320

Division of Statistical and Historical Research. Compiled from National Canners' Association data.

[1] Stated in cases of 24 No. 2 cans.

CUCUMBERS

TABLE 244.—*Cucumbers for consumption fresh, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*1,000 hamp.*[1]	*1,000 hamp.*[1]	*1,000 hamp.*[1]	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Early:									
Alabama	1,360	2,540	2,220	220	432	413	530	445	607
Florida	10,760	12,370	10,830	1,463	1,002	1,256	4,535	3,697	3,366
Georgia	600	2,260	570	48	120	66	96	134	75
Louisiana	250	540	690	32	108	53	32	190	82
South Carolina	2,780	3,560	2,900	473	605	458	970	484	705
Texas (southern district)	1,720	950	980	165	163	66	282	302	127
Virginia	840	1,730	1,560	130	260	257	195	208	193
Second early:									
California (southern district)	450	[2]	[2]	72	[2]	[2]	95	[2]	[2]
North Carolina	2,650	3,560	5,310	610	890	860	976	730	1,127
Intermediate:									
Arkansas	-------	500	1,370	-------	50	147	-------	64	225
Delaware	640	740	900	115	118	102	208	183	80
Illinois (southern)	440	520	740	73	104	130	104	185	98
Maryland	1,250	1,420	2,080	231	220	416	434	310	212
New Jersey	1,860	1,800	2,000	382	308	400	657	477	268
Late:									
New York	2,080	3,400	4,490	343	544	516	539	832	356
Total	27,480	35,890	36,640	4,357	4,924	5,140	9,653	8,241	7,521

Division of Crop and Livestock Estimates.

[1] Bushel hamper.

[2] Not reported.

TABLE 245.—*Cucumbers for consumption fresh, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per hamper [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early:	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Alabama	152	158	150	180	162	170	186	1.61	1.16	0.70	1.40	2.41	1.03	1.47
Florida	316	276	280	296	136	81	116	3.67	3.16	2.49	1.93	3.10	3.69	2.68
Georgia	------	------	------	180	80	53	115	------	------	------	2.17	2.00	1.12	1.14
Louisiana	------	------	------	------	130	200	77	------	------	------	------	1.00	1.76	1.55
South Carolina	280	234	203	115	170	170	158	1.39	1.65	1.83	.69	2.05	.80	1.54
Texas (southern district)	124	124	105	110	96	172	67	1.62	1.18	.85	.93	1.71	1.85	1.93
Virginia	205	136	160	150	155	150	165	2.50	2.50	2.00	1.00	1.50	.80	.75
Second Early:														
California (southern district)	180	176	168	135	160	(2)	(2)	1.50	1.30	1.25	1.80	1.32	(2)	(2)
North Carolina	276	255	226	180	230	250	162	.79	.68	.93	.88	1.60	.82	1.31
Intermediate:														
Arkansas	------	------	------	------	------	100	107	------	------	------	------	------	1.28	1.53
Delaware	164	150	165	150	180	160	113	.84	.75	.70	.59	1.81	1.55	.78
Illinois (southern)	164	184	250	160	165	200	175	.90	1.00	.98	1.92	1.42	1.78	.75
Maryland	202	182	163	209	185	155	200	1.01	.83	1.14	.87	1.88	1.41	.51
New Jersey	319	266	285	304	230	171	200	1.25	1.40	1.10	1.08	1.72	1.55	.67
Late:														
New York	160	152	150	184	165	160	115	1.32	1.68	1.21	1.30	1.57	1.53	.69
Average	252	218	216	213	159	137	140	2.32	2.08	1.72	1.51	2.22	1.67	1.46

Division of Crop and Livestock Estimates.

[1] Average for season.
[2] Not reported.

TABLE 246.—*Cucumbers for pickles, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California	2,033	2,150	3,210	268	245	491	230	245	535
Colorado	3,250	2,800	3,340	254	98	341	394	98	341
Illinois	1,410	1,310	1,630	73	37	114	104	51	158
Indiana	7,390	7,240	8,430	377	188	430	475	244	477
Iowa	3,530	2,250	2,850	191	45	177	172	48	193
Michigan	26,840	35,440	36,810	1,154	851	2,025	1,316	962	2,248
Minnesota	1,330	3,940	4,340	72	67	195	72	84	201
Missouri	400	330	960	19	13	56	13	18	51
New York	1,420	1,530	1,320	70	50	152	88	62	152
Ohio	700	1,560	1,600	32	50	115	34	74	145
Washington	480	430	670	66	13	97	66	13	97
Wisconsin	12,130	17,990	20,960	606	504	1,216	733	504	1,252
Other States	3,570	8,440	13,110	132	388	1,337	132	501	1,043
Total	64,480	85,410	99,230	3,314	2,549	6,746	3,829	2,904	6,893

Division of Crop and Livestock Estimates.

TABLE 247.—*Cucumbers for pickles, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per bushel						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
California	64	86	100	125	132	114	153	1.23	1.20	1.24	1.00	0.86	1.00	1.09
Colorado	69	81	75	65	78	35	102	.70	1.00	1.15	1.45	1.55	1.00	1.00
Illinois	57	15	80	45	52	28	70	1.07	1.26	1.26	1.17	1.43	1.39	1.39
Indiana	50	24	70	40	51	26	51	.94	1.30	.87	.98	1.26	1.30	1.11
Iowa	47	22	70	30	54	20	62	.94	1.00	1.63	1.00	.90	1.07	1.09
Michigan	57	34	70	40	43	24	55	.79	.93	1.04	.87	1.14	1.13	1.11
Minnesota	63	20	60	50	54	17	45	.79	1.06	1.25	1.00	1.00	1.25	1.03
Missouri	45	45	70	60	48	40	58	.88	.90	1.00	.60	.70	1.42	.91
New York	70	98	80	75	49	33	115	1.00	1.00	.95	1.00	1.25	1.25	1.00
Ohio	55	47	80	75	45	32	72	1.09	1.25	1.25	1.00	1.05	1.48	1.26
Washington	59	110	80	125	138	30	145	1.25	1.00	1.00	.71	1.00	1.00	1.00
Wisconsin	69	28	65	50	50	28	58	1.03	.79	.92	.83	1.21	1.09	1.03
Other States	46	51	73	62	37	46	102	1.00	.96	.98	.74	1.00	1.29	.78
Average	59	38	71	50	51	30	68	.89	.98	1.04	.93	1.16	1.14	1.04

Division of Crop and Livestock Estimates.

TABLE 248.—*Cucumbers: Car-lot shipments by State of origin, 1920–1925*

State	1920	1921	1922	1923	1924	1925 [1]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New York	312	540	395	383	694	684
New Jersey	287	271	164	258	276	432
Ohio	52	118	124	68	111	89
Illinois	142	164	68	15	77	246
Delaware	256	137	191	225	240	302
Maryland	297	343	368	446	311	598
Virginia	83	19	221	84	387	448
North Carolina	408	641	687	1,175	1,639	1,562
South Carolina	525	664	887	720	918	793
Georgia	1	3	211	45	154	72
Florida	835	1,414	2,034	1,647	1,381	1,948
Alabama	259	109	702	367	576	706
Texas	95	64	119	46	147	72
California	----------	89	68	125	23	114
Other States	137	256	110	96	248	348
Total	3,689	4,832	6,349	5,790	7,182	8,464

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Preliminary.

LETTUCE

TABLE 249.—*Lettuce, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per crate [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early:	*Crts.* [2]	*Crts.* [2]	*Crts.* [2]	*Crts.* [2]	*Crts.* [2]	*Crts.* [2]	*Crts.* [2]	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Arizona	234	255	246	285	260	225	225	.88	.72	1.35	.93	1.40	1.06	1.19
California [3]	249	258	238	175	226	200	189	1.44	.97	1.33	2.02	1.43	1.49	1.41
Imperial	-----	-----	190	150	185	185	200	-----	-----	1.42	2.15	1.52	1.75	1.74
Other	-----	-----	278	214	281	217	177	-----	-----	1.28	1.88	1.36	1.23	1.03
Florida	350	352	410	412	270	262	225	1.47	1.59	1.76	1.73	1.64	1.07	1.72
North Carolina	231	231	230	225	195	169	270	4.35	4.15	3.33	3.48	1.96	1.33	1.32
South Carolina	220	200	225	169	109	135	167	3.49	3.65	3.48	3.43	2.00	1.53	1.64
Texas	243	243	224	185	198	175	100	1.31	1.19	.74	.89	1.20	.55	.76
Virginia	186	205	234	188	131	121	130	3.13	3.40	2.67	2.33	1.96	1.33	2.07
Late:														
Colorado	235	250	270	180	145	85	133	3.00	1.80	1.50	1.71	1.60	2.09	1.54
Idaho	-----	230	250	170	138	135	120	-----	1.80	1.75	2.00	1.53	1.32	2.00
Michigan	180	108	150	125	120	125	130	2.24	2.02	2.50	3.00	3.20	2.24	1.60
Minnesota	180	130	133	135	100	140	150	3.50	3.00	3.00	2.00	2.18	2.19	3.00
New Jersey	158	156	163	167	160	265	257	2.94	3.50	3.52	1.88	3.48	2.84	3.04
New Mexico	-----	-----	-----	-----	-----	225	200	-----	-----	-----	-----	-----	1.05	1.20
New York	150	172	192	150	162	177	194	2.52	2.58	3.22	1.84	2.00	2.00	1.68
Oregon	-----	-----	-----	150	138	160	150	-----	-----	-----	2.12	1.35	1.50	1.30
Pennsylvania	132	132	192	162	150	75	152	3.84	3.08	4.46	1.80	2.00	2.38	1.94
Utah	-----	-----	-----	260	250	265	374	-----	-----	-----	1.35	1.45	1.13	1.50
Washington	235	245	375	325	280	225	200	2.50	1.75	2.00	1.30	1.33	1.16	2.38
Wyoming	-----	-----	-----	230	225	260	142	-----	-----	-----	1.25	1.48	1.85	1.50
Average	232	248	248	197	201	191	187	1.87	1.43	1.87	1.89	1.58	1.54	1.53

Division of Crop and Livestock Estimates.

[1] Average for season.
[2] Crates of 4 dozen heads each.
[3] Year beginning October of previous year.

TABLE 250.—*Lettuce, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
Early:	*Acres*	*Acres*	*Acres*	*1,000 crates* [1]	*1,000 crates* [1]	*1,000 crates* [1]	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Arizona	2,900	4,800	4,400	754	1,080	990	1,056	1,145	1,178
California [2]	24,700	33,020	49,320	5,584	6,589	9,305	8,012	9,837	13,134
Imperial	14,130	18,000	25,000	2,614	3,330	5,000	3,973	5,828	8,700
Other	10,570	15,020	24,320	2,970	3,259	4,305	4,039	4,009	4,434
Florida	3,780	3,490	3,400	1,021	914	765	1,674	978	1,316
North Carolina	1,230	1,540	1,730	240	260	467	470	346	616
South Carolina	1,980	1,120	1,480	216	151	247	432	231	405
Texas	1,140	760	680	226	133	68	271	73	52
Virginia	310	300	300	41	36	39	80	48	81
Late:									
Colorado	6,710	5,600	10,500	973	476	1,396	1,557	995	2,150
Idaho	3,150	1,420	1,500	435	192	180	666	253	360
Michigan	380	210	80	46	26	10	147	58	16
Minnesota	240	180	220	24	25	33	52	55	99
New Jersey	1,310	2,300	2,320	210	610	596	731	1,732	1,812
New Mexico	-----	250	1,500	-----	56	300	-----	59	360
New York	7,150	6,290	6,520	1,158	1,113	1,265	2,316	2,226	2,125
Oregon	500	300	300	69	48	45	93	72	58
Pennsylvania	60	70	70	9	5	11	18	12	21
Utah	200	300	250	50	80	94	72	90	141
Washington	2,000	1,400	1,720	560	315	344	745	365	819
Wyoming	250	200	110	56	52	16	83	96	24
Total	57,990	63,550	86,400	11,672	12,161	16,171	18,475	18,671	24,767

Division of Crop and Livestock Estimates.

[1] Crates of 4 dozen heads each.
[2] Crop year beginning October of previous year.

TABLE 251.—*Lettuce: Car-lot shipments by State of origin, 1920–1925*

State	1920	1921	1922	1923	1924	1925 [1]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New York	1,775	3,240	3,167	3,817	3,698	3,819
New Jersey	208	469	571	456	417	469
North Carolina	207	445	622	718	714	537
South Carolina	121	716	987	577	423	700
Florida	2,940	2,267	3,323	3,146	2,257	1,510
Idaho	25	180	889	1,241	532	407
Colorado	129	234	812	1,436	1,036	3,061
Arizona	254	168	678	1,108	2,049	3,477
Washington	354	635	812	1,081	674	817
California	7,358	9,850	9,744	15,113	18,480	21,608
Other States	417	534	635	792	655	635
Total	13,788	18,738	22,240	29,485	30,935	37,040

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Preliminary.

ONIONS

TABLE 252.—*Onions, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price per season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Early (Bermuda and Creole):									
California	1,340	1,540	1,550	398	522	488	613	773	820
Louisiana	1,200	1,670	1,700	108	209	204	193	209	318
Texas	12,680	10,330	9,580	1,661	2,087	2,203	3,156	3,318	3,084
Total	15,220	13,540	12,830	2,167	2,818	2,895	3,962	4,300	4,222
Intermediate (domestic):									
Iowa	1,460	1,520	1,620	533	578	632	629	590	1,043
Kentucky	1,000	1,100	750	298	330	210	423	412	315
New Jersey	2,290	2,370	2,000	444	645	360	657	987	612
Virginia	1,290	1,000	800	328	200	180	387	210	329
Washington	1,500	1,760	1,510	675	484	340	500	465	282
Late (domestic):									
California	7,010	4,650	5,650	2,103	1,279	1,695	2,271	1,010	1,848
Colorado	2,620	3,140	3,520	655	848	1,144	707	517	1,018
Idaho	300	400	1,660	128	160	755	142	139	581
Illinois	990	830	840	286	187	218	323	150	177
Indiana	6,300	6,980	4,620	2,218	1,745	1,317	2,795	1,256	1,343
Massachusetts	3,360	3,190	3,820	1,284	1,244	1,494	1,913	1,232	1,778
Michigan	1,850	2,040	1,750	646	751	399	969	473	387
Minnesota	1,220	1,380	1,440	268	380	386	354	293	367
New York	7,550	7,640	8,680	3,156	3,209	3,342	4,387	2,599	3,609
Ohio	5,760	6,240	2,860	1,457	2,184	772	2,098	1,507	903
Oregon	600	950	1,050	192	323	369	230	245	258
Pennsylvania	280	250	190	56	81	53	80	108	85
Utah	400	320	400	150	147	240	202	147	180
Wisconsin	940	960	960	262	259	372	314	189	365
Total	46,720	46,720	44,120	15,139	15,034	14,278	19,381	12,529	15,480
Grand total	61,940	60,260	56,950	17,306	17,852	17,173	23,343	16,829	19,702

Division of Crop and Livestock Estimates.

TABLE 253.—*Onions, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per bushel [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early (Bermuda and Creole):	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
California	312	298	245	320	297	339	315	2.20	1.53	1.28	1.42	1.54	1.48	1.68
Louisiana	160	158	206	300	90	125	120	2.85	.86	.95	1.51	1.79	1.00	1.56
Texas	267	256	207	197	131	202	230	2.01	1.42	.83	1.91	1.90	1.59	1.40
Bermuda and Creole, average	259	251	213	227	142	208	226	2.09	1.42	.92	1.75	1.83	1.53	1.46
Intermediate (domestic):														
Iowa	300	350	205	380	365	380	390	1.53	.60	1.20	.75	1.18	1.02	1.65
Kentucky	300	370	300	225	298	300	280	2.05	1.05	.70	1.27	1.42	1.25	1.50
New Jersey	250	240	250	250	194	272	180	1.72	1.25	1.15	1.25	1.48	1.53	1.70
Virginia	250	320	280	225	254	200	225	1.78	1.50	1.13	.90	1.18	1.05	1.83
Washington	400	410	300	320	450	275	225	1.55	.93	1.41	.43	.74	.96	.83
Late (domestic):														
California	375	325	225	250	300	275	300	1.65	.50	1.40	.48	1.08	.79	1.09
Colorado	250	340	300	280	250	270	325	1.62	.72	1.53	.52	1.08	.61	.89
Idaho	400	485	470	460	425	400	455	1.65	.35	1.62	.75	1.11	.87	.77
Illinois	200	350	210	300	289	225	260	1.32	.81	1.28	.82	1.13	.80	.81
Indiana	200	398	265	413	352	250	285	1.32	.76	1.32	.59	1.26	.72	1.02
Massachusetts	340	450	280	275	382	390	391	1.09	.54	1.44	.70	1.49	.99	1.19
Michigan	175	350	225	511	349	368	228	1.45	.63	1.65	.58	1.50	.63	.97
Minnesota	275	300	200	350	220	275	268	1.47	.50	1.27	.43	1.32	.77	.95
New York	265	340	300	270	418	420	385	1.84	.69	1.60	.67	1.39	.81	1.08
Ohio	250	340	225	400	253	350	270	1.28	.46	1.53	.55	1.44	.69	1.17
Oregon	300	370	300	300	320	340	351	1.83	.70	1.07	.55	1.20	.76	.70
Pennsylvania	300	350	270	380	200	325	278	1.62	.32	2.00	.68	1.42	1.33	1.60
Utah	500	480	440	400	375	460	600	1.62	.72	1.60	.49	1.35	1.00	.75
Wisconsin	196	360	300	350	279	270	388	.85	.68	1.51	.49	1.20	.73	.98
Domestic average	280	353	259	320	324	322	324	1.53	.66	1.41	.63	1.28	.83	1.08
Average	277	329	248	296	279	296	302	1.61	.81	1.31	.85	1.35	.94	1.15

Division of Crop and Livestock Estimates.

[1] Average for season.

TABLE 254.—*Onions: Car-lot shipments by State of origin, March, 1920–June, 1925*

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
Massachusetts	3,914	2,244	1,912	2,454	2,481
New York	3,384	2,890	2,812	5,505	5,335
New Jersey	371	429	479	335	403
Ohio	3,239	1,749	4,493	2,714	4,492
Indiana	4,124	1,972	4,684	4,610	3,735
Illinois	409	251	487	378	241
Michigan	939	417	1,867	1,222	1,623
Wisconsin	409	90	330	273	212
Minnesota	287	169	500	189	487
Iowa	830	416	927	882	1,176
Virginia	139	280	371	274	345
Kentucky	304	382	258	263	266
Texas	4,957	4,209	4,630	3,027	3,918
Idaho	28	50	161	256	322
Colorado	150	447	651	928	1,064
Utah	9	54	170	177	216
Washington	810	702	765	1,126	1,016
Oregon	27	343	263	392	558
California	4,802	3,542	4,349	3,427	2,671
Other States	341	254	369	330	235
Total	29,473	20,890	30,478	28,762	30,796

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from March 1 of one year through June of the following year.

[2] Preliminary.

TABLE 255.—*Onions: Average l. c. l. price per 100 pounds to jobbers, at nine markets, 1920–1925*

Market. Season beginning August	Various common varieties								Bermudas					
									Apr.		May [2]		June [2]	
	Aug.[1]	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Yellow	Crystal White wax	Yellow	Crystal White wax	Yellow	Crystal White wax
New York:	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1920	2.53	2.24	1.56	1.55	1.23	1.31	0.98	0.80	4.34	3.46	3.15	3.79	2.93	3.01
1921	2.80	3.43	5.06	5.63	5.45	7.34	8.25	8.21	7.66	6.20	4.14	3.79	3.91	3.54
1922	2.08	1.52	1.72	2.00	2.99	2.83	2.45	2.98	------	------	5.31	5.19	------	------
1923	2.68	3.21	3.26	2.75	2.76	2.73	2.33	2.20	------	------	3.27	------	------	------
1924	2.17	1.89	1.84	2.08	2.84	3.05	3.05	2.86	4.19	5.04	6.16	5.01	7.18	------
1925	2.94	2.36	2.86	2.80	3.26	------	------	------	------	------	------	------	------	------
Chicago:														
1920	2.06	1.94	1.59	1.56	1.31	1.16	.98	.93	3.48	4.37	2.79	3.73	2.53	3.27
1921	2.58	3.61	4.47	5.11	5.62	7.09	7.64	8.53	6.21	6.47	4.05	4.20	3.43	3.89
1922	2.12	1.61	1.70	2.22	2.29	2.56	3.44	3.38	5.96	------	5.15	5.79	------	------
1923	3.19	3.48	3.29	3.22	3.07	3.27	3.04	2.79	5.17	------	3.37	4.10	------	------
1924	3.11	2.73	2.43	2.52	2.88	3.96	4.38	4.32	4.15	5.46	6.33	6.75	7.94	8.39
1925	3.41	2.90	3.11	3.35	3.46	------	------	------	------	------	------	------	------	------
Philadelphia:														
1920	------	2.03	1.49	1.51	1.23	1.27	.98	.87	4.04	3.88	3.26	3.70	2.75	2.61
1921	3.02	3.80	4.80	5.34	5.52	6.93	8.09	8.98	7.03	6.00	4.13	4.04	4.07	------
1922	2.19	1.63	1.57	1.82	2.73	2.90	2.54	3.20	6.03	------	------	------	------	------
1923	3.07	3.45	3.09	2.73	2.61	2.58	2.21	2.11	4.76	------	3.42	------	------	------
1924	2.91	1.99	1.70	1.76	2.59	3.01	3.00	2.82	4.19	------	6.45	------	7.46	------
1925	3.07	2.48	2.38	2.44	2.63	------	------	------	------	------	------	------	------	------
Pittsburgh:														
1920	2.34	2.30	1.74	1.65	1.05	1.26	.89	.90	4.03	4.58	3.22	3.91	2.95	3.35
1921	3.05	3.82	4.86	5.44	5.57	6.73	7.89	8.89	6.81	7.17	4.52	5.29	3.54	3.88
1922	2.36	1.56	1.52	1.63	2.74	2.95	2.70	3.33	6.95	------	5.49	5.98	------	------
1923	2.98	3.50	3.34	2.73	2.46	2.34	2.08	2.13	5.77	------	3.40	4.31	------	------
1924	3.12	1.98	1.70	1.59	2.45	2.96	2.75	2.74	4.55	5.65	6.58	7.05	7.75	------
1925	3.55	2.73	2.43	2.40	2.45	------	------	------	------	------	------	------	------	------
St. Louis:														
1920	2.40	1.67	1.55	1.55	------	1.17	.91	.70	3.30	4.40	2.83	3.47	------	3.20
1921	2.95	3.70	4.88	5.45	5.68	6.97	7.90	8.52	5.95	5.67	3.17	4.19	3.37	------
1922	------	------	1.89	2.20	2.30	2.92	2.52	3.14	------	------	5.05	5.20	------	------
1923	2.55	3.45	3.45	3.23	3.05	3.45	3.39	2.90	4.11	------	2.94	3.73	------	------
1924	------	2.23	1.70	1.86	2.79	3.82	3.78	3.58	3.86	4.65	5.97	6.29	7.40	8.29
1925	------	2.64	2.67	2.98	2.86	------	------	------	------	------	------	------	------	------
Cincinnati:														
1920	------	1.76	1.48	1.45	1.33	1.25	1.13	.85	3.43	4.49	3.17	3.95	2.72	3.73
1921	2.92	3.74	5.19	5.59	5.45	6.90	8.29	8.63	5.93	6.44	4.67	------	3.40	3.76
1922	------	------	1.78	1.96	2.87	3.08	2.93	3.94	------	------	5.38	5.71	------	------
1923	2.94	3.43	3.04	2.60	2.56	2.60	2.23	1.95	4.47	------	3.53	4.53	------	------
1924	------	1.85	1.64	1.69	2.42	2.90	2.83	2.68	4.72	5.20	6.64	6.73	------	------
1925	------	------	2.85	2.98	2.80	------	------	------	------	------	------	------	------	------
Minneapolis:														
1920	2.17	2.12	------	------	------	------	------	------	4.02	4.66	3.38	4.11	2.49	4.05
1921	2.70	3.34	4.76	4.81	4.60	6.62	8.11	8.83	------	------	4.62	4.86	3.17	3.55
1922	------	------	------	------	------	------	------	------	------	------	5.90	6.21	------	------
1923	2.73	3.44	3.72	3.14	3.22	3.50	3.05	2.89	6.12	------	3.58	4.69	------	------
1924	2.88	2.61	------	------	------	------	3.36	3.50	4.80	5.51	6.34	6.78	7.89	------
1925	------	------	------	2.62	2.52	------	------	------	------	------	------	------	------	------
Kansas City:														
1920	2.62	1.98	1.68	1.67	1.52	1.35	1.13	.66	3.60	4.27	2.78	3.46	2.39	3.41
1921	2.97	3.60	4.38	5.40	5.42	6.94	8.06	8.50	6.56	6.92	3.91	4.46	2.76	3.29
1922	------	------	2.12	2.02	2.56	3.25	3.45	3.22	------	------	------	------	------	------
1923	2.62	3.48	3.65	3.30	2.96	3.32	3.30	3.00	5.48	------	3.29	4.17	------	------
1924	3.09	2.89	2.13	2.36	2.82	4.20	3.99	4.25	4.74	5.12	6.12	6.55	7.44	7.58
1925	3.97	2.68	3.19	3.07	2.87	------	------	------	------	------	------	------	------	------
Washington:														
1923	3.44	3.90	3.62	3.32	3.11	2.89	2.76	2.56	------	------	4.22	------	------	------
1924	3.38	2.49	2.11	2.06	2.88	3.44	3.40	3.14	5.01	------	6.87	------	8.44	------
1925	4.10	2.92	2.55	2.84	3.04	------	------	------	------	------	------	------	------	------

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division.

Average prices as shown are based on stock of U. S. No. 1 grade; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa, in order to obtain comparability.

[1] Quotations began Aug. 23, 1920; Aug. 22, 1921; Aug. 7, 1922; Aug. 14, 1923; Aug. 22, 1924; July 22, 1925.
[2] Last reported quotations of season June 11, 1921; June 14, 1922; May 29, 1923; June 4, 1924; June 10, 1925.

TABLE 256.—*Onions: Estimated price per bushel, received by producers, United States, 1910–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1910	104.5	99.8	99.4	93.2	94.6	98.8	101.0	104.0	105.0	119.0	129.0	134.0	106.2
1911	122.0	116.0	104.0	102.0	103.0	113.0	117.0	140.0	167.0	175.0	177.0	155.0	129.8
1912	114.0	100.0	89.0	85.0	84.0	84.0	81.6	77.5	77.0	79.0	87.2	95.6	88.2
1913	101.7	105.1	103.9	110.2	114.9	114.9	121.0	140.7	155.2	159.2	152.6	140.8	124.0
Av. 1910–1913	110.6	105.2	99.1	97.6	99.1	102.7	105.2	115.6	126.0	133.0	136.4	131.4	112.0
1914	170.4	137.9	103.3	88.3	84.4	92.3	88.9	97.6	95.3	104.4	102.9	102.9	106.1
1915	93.0	86.3	82.8	94.8	94.8	99.6	113.2	126.3	130.3	123.5	123.3	133.8	104.5
1916	147.3	133.5	122.9	131.4	153.8	175.7	208.4	357.9	476.2	495.6	398.0	308.0	241.7
1917	201.0	154.7	142.9	157.5	174.6	177.0	178.9	183.2	147.4	134.1	134.7	138.7	156.7
1918	162.6	164.7	163.3	143.2	143.1	131.7	133.5	154.7	199.8	202.1	229.9	234.1	171.3
1919	232.0	225.8	195.4	196.4	212.5	245.8	280.8	307.3	325.6	344.2	337.6	264.2	257.0
1920	204.8	176.4	172.9	158.9	143.8	132.0	135.2	131.2	114.2	98.4	106.7	138.2	145.6
Av. 1914–1920	173.0	154.2	140.5	138.6	143.9	150.6	162.7	194.0	212.6	214.6	204.7	188.6	169.0
1921	147.7	159.1	168.5	186.6	219.9	245.2	263.8	325.3	365.7	469.6	331.4	270.9	252.5
1922	204.5	156.9	126.9	118.8	123.6	131.7	159.8	173.0	173.8	196.5	200.7	220.5	160.7
1923	207.7	185.2	179.3	185.6	174.6	178.4	181.3	182.9	181.2	173.8	184.1	155.4	181.9
1924	175.9	168.6	161.8	155.8	152.6	153.6	163.8	194.3	189.4	202.3	250.5	279.6	184.0
1925	290.4	241.3	176.8	180.9	175.4	174.1	------	------	------	------	------	------	------

Division of Crop and Livestock Estimates.

PEAS

TABLE 257.—*Peas, green, for consumption fresh; commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
Early:	*Acres*	*Acres*	*Acres*	*1,000 hamp.*[1]	*1,000 hamp.*[1]	*1,000 hamp.*[1]	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Arizona	200	450	1,150	13	14	52	20	38	87
California (Imperial)	1,420	950	1,400	78	52	66	156	111	169
Florida	2,250	1,330	2,210	135	78	84	358	229	235
Mississippi	1,920	2,380	2,050	108	162	107	215	228	193
North Carolina	3,930	4,770	3,610	295	343	390	732	580	741
South Carolina	1,630	1,720	1,140	106	71	91	186	185	191
Virginia (Norfolk)	2,530	800	800	240	68	64	382	95	102
Late:									
Colorado	380	850	2,560	28	68	256	40	128	794
New Jersey	1,320	3,200	2,700	106	182	148	219	426	231
New York	1,800	4,920	6,650	153	492	485	301	851	1,091
Total	17,380	21,370	24,270	1,262	1,530	1,743	2,609	2,871	3,834

Division of Crop and Livestock Estimates.

[1] 1-bushel hampers.

TABLE 258.—*Peas, green, for consumption fresh; commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per hamper [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early:	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Hamp.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Arizona					63	31	45					1.52	2.72	1.67
California (Imperial)	70	80	65	48	55	55	47	3.00	2.50	2.15	1.50	2.00	2.14	2.56
Florida	50	50	60	54	60	59	38	3.00	3.25	3.00	2.57	2.65	2.93	2.80
Mississippi	50	50	65	85	56	68	52	2.16	2.80	2.02	1.85	1.99	1.41	1.80
North Carolina	80	70	90	82	75	72	108	2.25	2.32	2.40	2.00	2.48	1.69	1.90
South Carolina	70	60	75	92	65	41	80	2.41	1.86	2.00	2.50	1.75	2.61	2.10
Virginia (Norfolk)	100	70	105	113	95	85	80	2.00	2.44	2.40	1.48	1.59	1.39	1.60
Late:														
Colorado				45	75	80	100				1.55	1.44	1.88	3.10
New Jersey	65	60	65	76	80	57	55	2.20	2.03	1.95	1.95	2.07	2.34	1.56
New York	60	70	60	78	85	100	73	1.35	1.37	1.30	1.58	1.97	1.73	2.25
Average	68	64	72	79	73	72	72	2.22	2.19	2.05	1.81	2.07	1.88	2.20

Division of Crop and Livestock Estimates.

[1] Average for season.

TABLE 259.—*Peas, green, for canning; commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*Tons*	*Tons*	*Tons*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California	4,410	5,260	5,270	3,100	3,700	3,700	196	259	236
Colorado	3,680	3,140	3,520	1,800	2,500	3,200	124	131	192
Delaware	3,880	2,500	2,500	2,300	2,500	2,000	138	169	142
Illinois	10,190	10,790	9,760	6,100	8,600	6,800	398	666	546
Indiana	4,760	6,190	6,270	3,800	6,200	5,000	214	287	268
Maine	340	1,030	1,770	400	900	2,100	28	63	147
Maryland	8,050	9,530	8,480	4,800	9,500	7,600	305	653	508
Michigan	10,530	12,220	12,400	4,200	9,800	6,200	210	496	314
Minnesota	2,030	5,200	7,900	2,200	5,200	4,700	88	248	223
New Jersey	610	590	490	400	600	300	27	38	20
New York	33,460	38,030	38,000	30,100	38,000	34,200	1,922	2,456	2,176
Ohio	5,300	5,830	5,070	4,800	5,800	2,500	283	348	155
Pennsylvania	510	1,280	1,300	500	1,300	600	28	78	36
Utah	7,780	10,360	10,750	11,700	12,400	17,200	686	716	964
Wisconsin	91,160	109,870	111,710	82,000	131,800	111,700	4,707	7,643	6,387
Other States	3,140	4,770	6,640	2,500	5,200	6,600	164	242	338
Total	189,830	226,590	231,830	160,700	244,000	214,400	9,518	14,493	12,652

Division of Crop and Livestock Estimates.

TABLE 260.—*Peas, green, for canning; commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per ton						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
California	0 8	1.5	0.6	1.7	0.7	0.7	0.7	58.17	66.67	70.00	58.03	63.33	70.00	63.75
Colorado	.6	.9	.8	.7	.5	.8	.9	60.00	69.00	70.00	65.00	69.00	52.54	60.00
Delaware	.7	1.1	1.3	.6	.6	1.0	.8	86.19	85.00	62.92	60.00	60.00	67.50	70.88
Illinois	.9	.8	.7	.8	.6	.8	.7	65.68	63.75	68.90	61.00	65.17	77.48	80.34
Indiana	.9	.7	1.0	.9	.8	1.0	.8	51.25	60.00	40.00	49.26	56.25	46.32	53.57
Maine					1.1	.9	1.2						70.00	70.00	70.00
Maryland	.8	1.1	1.0	.7	.6	1.0	.9	72.00	77.50	62.40	50.83	63.57	68.70	66.84
Michigan	1.0	.9	.6	.8	.4	.8	.5	59.82	61.88	59.00	50.00	50.00	50.65	50.69
Minnesota	1.0	.8	.8	.8	1.1	1.0	.6	40.00	42.50	44.00	42.00	40.00	47.60	47.52
New Jersey	.9	1.1	1.1	.6	.6	1.0	.7	70.00	70.00	65.00	60.00	67.50	64.00	67.00
New York	.7	1.2	1.1	.9	.9	1.0	.9	63.57	71.20	61.70	62.50	63.84	64.64	63.63
Ohio	.9	.8	.8	.7	.9	1.0	.5	58.76	56.67	52.50	59.00	59.00	60.00	62.00
Pennsylvania	1.0	.8	1.4	.8	1.0	1.0	.5	60.00	58.00	60.00	64.00	56.67	60.00	60.00
Utah	1.1	2.1	1.5	1.4	1.5	1.2	1.6	64.15	65.68	54.12	57.68	58.60	57.75	56.05
Wisconsin	1.0	1.2	.9	1.2	.9	1.2	1.0	59.02	64.66	56.96	56.16	57.40	57.99	57.18
Other States	1.0	.8	.8	1.0	.8	1.1	1.0	69.74	70.00	68.56	65.56	65.75	46.54	51.15
Average	.9	1.1	.9	1.0	.8	1.1	.9	61.48	66.84	58.76	57.24	59.23	59.40	59.01

Division of Crop and Livestock Estimates.

TABLE 261.—*Peas, canned: Production in the United States, 1917–1925*

[Thousand cases [1]—i. e., 000 omitted]

State	1917	1918	1919	1920	1921	1922	1923	1924	1925
New York	1,394	2,000	1,040	2,381	1,382	2,137	2,541	2,931	2,385
New Jersey [2]	755	332	248	549	345	153	199	331	257
Ohio	322	442	306	282	241	225	384	430	232
Indiana	604	454	381	271	182	268	367	483	86
Illinois	576	978	433	460	331	516	586	697	357
Michigan	523	477	425	549	317	455	392	710	451
Wisconsin	3,569	4,520	4,317	5,804	4,063	7,042	6,961	10,390	10,003
Minnesota [3]							254	470	432
Maryland	721	683	509	696	533	489	591	873	956
Utah	421	527	395	595	376	751	918	830	1,346
California	350	253	205	328	84	496	239	282	271
Other States	594	397	426	402	353	510	516	888	1,040
United States	9,329	11,063	8,685	12,317	8,207	13,042	13,948	19,315	17,816

Division of Statistical and Historical Research. Compiled from National Canners' Association data.

[1] Stated in cases of 24 No. 2 cans.
[2] Includes Delaware.
[3] Previous to 1923, included in "Other States."

POTATOES

TABLE 262.—*Potatoes: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Chicago cash price per hundredweight, fair to fancy [2]				Domestic exports, fiscal year beginning July 1 [3]	Imports, fiscal year beginning July 1 [3]
							December		Following May			
							Low	High	Low	High		
	1,000 acres	*Bushels*	*1,000 bushels*	*Cents*	*1,000 dollars*	*Dollars*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Bushels*	*Bushels*
1909	*5 669*	107.5	394,553	54.2	213,679	58.24	33	97	27	57	999,476	353,208
1910	3,720	93.8	349,032	55.7	194,566	52.30	60	80	58	125	2,383,887	218,984
1911	3,619	80.9	292,737	79.9	233,778	64.60	117	167	150	333	1,237,276	13,734,695
1912	3,711	113.4	420,647	50.5	212,550	57.28	67	108	55	117	2,028,261	337,230
1913	3,668	90.4	331,525	68.7	227,903	62.13	83	117	100	150	1,794,073	3,645,993
Average 1909–1913	3,677	97.3	357,699	60.5	216,495	58.87	70	114	78	156	1,688,595	3,658,022
1914	3,711	110.5	409,921	48.7	199,460	53.75	50	110	57	250	3,135,474	270,942
1915	3,734	96.3	359,721	61.7	221,992	59.45	88	158	133	183	4,017,760	209,532
1916	3,565	80.5	286,953	146.1	419,333	117.62	208	317	333	625	2,489,001	3,079,025
1917	4,384	100.8	442,108	122.8	542,774	123.81	155	225	80	250	3,453,307	1,180,480
1918	4,295	95.9	411,860	119.3	491,527	114.44	90	225	125	250	3,688,840	3,534,076
1919	3,542	91.2	322,867	159.5	514,855	145.36	280	360	685	925	3,723,434	6,940,930
1920	3,657	110.3	403,296	114.5	461,778	126.27	120	225	40	500	4,803,159	3,423,189
Average 1914–1920	3,841	98.1	376,675	108.2	407,388	106.06	142	231	208	426	3,615,854	2,662,596
1921	3,941	91.8	361,659	110.1	398,362	101.08	100	245	190	235	2,327,147	2,109,537
1922	4,307	105.3	453,396	58.1	263,355	61.15	75	175	90	700	2,979,951	572,147
1923	3,816	109.0	416,105	78.1	324,889	85.13	80	200	105	525	3,074,946	564,046
1924	3,348	127.0	425,283	62.6	266,047	79.46	80	220	312	515	3,652,972	477,554
1925 [4]	3,113	103.8	323,243	187.2	605,327	194.45	325	450	----	----	----------	----------

Division of Crop and Livestock Estimates; figures in italics are census returns.

[1] Based on farm price Dec. 1.

[2] Burbank to 1910.

[3] Compiled from Commerce and Navigation of United States 1909–1918 and June issues of Monthly Summaries of Foreign Commerce, 1919–1925.

[4] Preliminary.

TABLE 263.—*Potatoes: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis, Dec. 1, price, thousands of dollars		State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1, price, thousands of dollars	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]		1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
Me	140	134	44,100	34,170	18,963	68,340	N. C	59	58	6,195	4,524	6,938	8,143
N. H	11	11	1,870	1,595	1,571	3,748	S. C	30	25	3,330	2,175	4,828	4,568
Vt	21	21	3,360	2,625	2,856	5,644	Ga	20	17	1,440	833	2,160	1,749
Mass	15	15	2,250	2,100	2,160	5,145	Fla	29	23	2,552	2,599	4,211	6,757
R. I	2	2	280	280	266	686	Ky	48	46	4,800	2,760	4,896	5,520
Conn	15	15	1,950	2,025	1,950	5,062	Tenn	35	37	2,800	2,072	3,136	4,040
N. Y	310	279	43,400	23,994	24,738	51,587	Ala	28	25	2,520	1,425	3,906	3,135
N. J	67	57	10,050	6,042	6,734	13,897	Miss	12	10	972	670	1,594	1,340
Pa	215	207	25,370	25,461	20,296	49,394	Ark	26	28	1,924	1,680	2,463	3,528
Ohio	108	113	9,504	11,978	8,459	23,956	La	28	30	1,904	1,800	2,856	3,780
Ind	52	50	5,148	4,150	4,118	8,964	Okla	32	39	2,240	2,808	2,912	6,318
Ill	80	76	8,800	4,560	6,600	10,716	Tex	25	26	1,675	1,378	2,848	3,307
Mich	260	237	33,800	24,411	11,830	39,546	Mont	34	35	2,992	3,780	2,603	6,048
Wis	242	211	31,460	23,632	11,326	40,174	Idaho	65	67	11,050	13,132	5,967	19,041
Minn	340	276	44,880	26,772	12,118	41,229	Wyo	15	14	1,425	1,680	1,240	2,688
Iowa	79	83	10,744	5,229	5,909	12,288	Colo	88	86	13,200	14,190	7,920	21,994
Mo	85	88	8,330	5,016	6,831	11,286	N. Mex	2	2	104	150	108	300
N. Dak	125	88	11,500	6,160	4,485	9,240	Ariz	3	3	162	171	243	393
S. Dak	70	61	5,740	3,965	2,755	7,137	Utah	14	15	1,904	2,700	1,409	3,591
Nebr	89	84	7,743	6,300	4,801	11,340	Nev	4	4	600	900	636	1,710
Kans	54	54	5,130	3,618	4,668	8,502	Wash	51	54	7,650	7,830	6,502	12,920
Del	7	6	630	384	504	768	Oreg	40	42	3,840	4,368	3,648	6,552
Md	42	44	3,990	3,212	3,232	6,231	Calif	46	42	7,360	6,510	6,624	13,020
Va	140	126	18,340	11,340	15,039	22,113							
W. Va	45	47	4,275	4,089	4,190	7,892	U. S	3,348	3,113	425,283	323,243	266,047	605,327

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 264.—*Potatoes: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.
Maine	225	220	180	198	220	209	260	179	204	125	200	230	177	196	298	187	258	315	255	263
New Hampshire	130	150	125	140	122	133	159	95	120	107	140	102	127	121	160	100	190	170	145	153
Vermont	155	130	105	140	127	131	168	108	112	100	130	100	130	121	150	120	200	160	125	151
Massachusetts	125	125	93	130	105	116	155	120	91	115	133	90	125	118	115	90	180	150	140	135
Rhode Island	125	136	110	113	130	123	165	110	74	135	130	100	110	118	115	90	165	140	140	130
Connecticut	120	125	85	107	92	106	140	95	95	110	95	75	115	104	103	140	160	130	135	134
New York	120	102	74	106	74	95	145	62	70	95	98	109	125	101	103	110	123	140	86	112
New Jersey	90	105	73	108	95	94	108	130	122	114	92	96	156	117	95	173	95	150	106	124
Pennsylvania	78	88	56	109	88	84	105	72	70	92	80	100	115	91	86	108	105	118	123	108
Ohio	93	82	65	112	64	83	95	82	45	100	69	61	100	79	58	89	98	88	106	88
Indiana	95	84	58	114	53	81	80	95	44	92	80	44	96	76	51	76	105	99	83	83
Illinois	91	75	50	101	46	73	60	110	58	90	72	52	65	72	53	63	92	110	60	76
Michigan	105	105	94	105	96	101	121	59	48	95	84	90	105	86	80	106	114	130	103	107
Wisconsin	102	95	116	120	109	108	124	87	47	114	110	94	108	98	68	124	96	130	112	106
Minnesota	115	61	115	135	110	107	114	106	60	112	105	87	99	98	75	90	102	132	97	99
Iowa	89	72	74	109	48	78	86	105	42	95	72	46	110	79	43	105	84	136	63	86
Missouri	85	86	27	84	38	64	45	98	60	87	61	75	82	73	58	60	100	98	57	75
North Dakota	110	41	120	128	85	97	109	90	93	43	99	63	79	82	96	90	83	92	70	86
South Dakota	80	44	72	105	78	76	90	115	66	90	91	50	106	87	61	78	88	82	65	75
Nebraska	78	60	52	80	48	64	80	105	73	85	86	55	99	83	80	84	80	87	75	81
Kansas	79	57	22	82	40	56	62	83	71	57	53	76	85	70	64	64	86	95	67	75
Delaware	96	103	60	100	87	89	80	95	90	95	87	83	106	91	50	96	80	90	64	76
Maryland	80	95	45	112	87	84	78	97	95	100	80	94	102	92	65	101	80	95	73	83
Virginia	92	98	45	87	94	83	65	125	130	99	94	114	120	107	108	107	93	131	90	106
West Virginia	98	92	45	112	83	86	54	117	88	115	87	90	120	96	85	99	120	95	87	97
North Carolina	74	89	48	85	80	75	52	90	95	90	95	80	91	85	88	94	86	105	78	90
South Carolina	85	90	70	90	80	83	70	80	75	96	102	85	100	87	85	76	103	111	87	92
Georgia	81	82	72	78	81	79	60	65	60	84	70	70	74	69	75	68	70	72	49	67
Florida	95	90	90	93	76	89	80	80	74	91	100	76	105	87	92	110	92	88	113	99
Kentucky	92	92	39	101	49	75	45	126	84	96	75	70	99	85	65	80	85	100	60	78
Tennessee	75	80	41	88	64	70	43	88	82	94	70	67	83	75	52	80	90	80	56	72
Alabama	80	80	78	81	84	81	79	80	90	72	80	80	67	78	75	80	80	90	57	76
Mississippi	87	85	83	89	80	85	80	90	65	78	80	85	87	81	68	85	74	81	67	75
Arkansas	70	84	55	70	72	70	60	90	65	80	50	73	78	71	55	68	59	74	60	36
Louisiana	75	55	69	73	70	68	70	51	65	64	79	64	65	65	67	65	63	68	60	65

Oklahoma	70	60	18	60	60	54	70	85	53	69	34	75	74	66	58	68	66	70	72	67
Texas	50	51	57	63	52	55	61	65	50	60	55	73	52	59	56	62	55	67	53	59
Montana	180	120	150	165	140	151	140	155	125	95	135	60	110	117	115	126	110	88	108	109
Idaho	200	142	180	185	170	175	155	125	150	156	185	155	180	158	185	185	180	170	196	183
Wyoming	160	100	42	140	140	116	108	150	130	155	150	80	125	128	108	110	100	95	120	107
Colorado	160	100	35	95	115	101	120	135	138	160	160	115	130	137	132	130	123	150	165	140
New Mexico	85	47	80	100	68	76	100	100	102	116	100	58	75	93	60	50	50	52	75	57
Arizona	90	92	95	125	75	95	110	95	115	105	85	70	90	96	115	85	60	54	57	74
Utah	180	142	140	185	180	165	140	125	180	189	180	136	189	163	161	197	168	136	180	168
Nevada	180	150	160	178	160	166	130	172	190	207	171	135	135	163	148	174	174	150	225	174
Washington	170	131	160	167	123	150	128	135	165	125	132	125	155	138	135	145	155	150	145	146
Oregon	160	105	130	155	135	137	97	115	150	108	110	94	130	115	90	105	95	96	104	98
California	130	130	135	130	119	129	138	130	141	145	143	130	140	138	140	130	150	160	155	147
United States	107.5	93.8	80.9	113.4	90.4	97.2	110.5	96.3	80.5	100.8	95.9	91.2	110.3	97.9	91.8	105.3	109.0	127.0	103.8	107.4

Division of Crop and Livestock Estimates.

TABLE 265.—*Potatoes, early and second early, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price per season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Early:									
Alabama	7,140	12,500	8,940	621	1,412	715	950	1,271	779
California	11,000	11,000	14,100	1,298	1,012	1,946	1,661	1,326	2,530
Florida	19,310	28,000	21,920	1,777	2,184	2,477	4,976	4,895	4,632
Georgia	2,730	2,630	2,010	273	274	86	521	400	135
Louisiana	11,000	15,510	15,630	990	1,241	1,047	1,426	1,477	1,550
Mississippi	1,200	1,300	1,240	101	104	68	88	90	116
North Carolina	16,340	26,000	22,100	1,765	3,640	2,144	2,277	3,458	2,873
South Carolina	15,520	20,000	14,860	2,142	2,760	1,828	3,963	3,036	2,376
Texas	10,230	10,000	10,710	512	680	932	1,126	850	1,426
Virginia	92,300	100,520	86,100	9,230	15,983	9,815	14,214	15,024	13,447
Second early:									
Arkansas	2,240	2,500	2,940	134	188	250	149	203	338
Kansas (Kaw Valley)	15,700	16,770	16,800	1,648	2,817	1,730	1,582	2,141	2,266
Kentucky	5,700	5,680	5,620	598	841	601	879	505	1,082
Maryland	15,300	16,000	14,500	1,469	1,520	1,247	2,262	1,155	1,634
Missouri (Orrick)	4,100	4,500	4,800	390	495	480	370	322	715
Nebraska (Kearney district)	5,250	3,000	1,800	357	225	207	357	160	298
New Jersey	41,100	37,700	31,000	2,466	5,881	2,821	4,168	4,764	3,808
Oklahoma	5,580	6,000	12,000	474	576	1,200	720	541	1,644
Total	281,740	319,610	287,070	26,245	41,833	29,594	41,689	41,528	41,649

Division of Crop and Livestock Estimates.

TABLE 266.—*Potatoes, early and second early, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per bushel [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early:	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Alabama	82	96	110	110	87	113	80	1.56	2.68	1.20	1.28	1.53	0.90	1.09
California	124	124	124	132	118	92	138	2.28	3.48	1.08	.80	1.28	1.31	1.30
Florida	82	96	96	110	92	78	113	2.04	3.08	2.20	1.98	2.80	2.20	1.87
Georgia	96	82	69	116	100	104	43	2.00	2.00	1.20	1.33	1.91	1.46	1.57
Louisiana	82	69	82	96	90	80	67	.60	2.16	1.32	1.29	1.44	1.19	1.48
Mississippi	82	69	82	110	84	80	55	2.00	2.52	1.00	1.41	.87	.87	1.70
North Carolina	110	124	124	124	108	140	97	1.56	2.36	1.08	1.31	1.29	.95	1.34
South Carolina	96	165	165	138	138	138	123	1.88	3.36	1.20	1.56	1.85	1.10	1.30
Texas	82	69	82	63	50	68	87	1.72	2.28	2.04	1.21	2.20	1.25	1.53
Virginia	124	110	124	110	100	159	114	1.80	2.88	.88	1.23	1.54	.94	1.37
Second early:														
Arkansas	82	96	55	116	60	75	85	1.64	2.52	1.48	1.14	1.11	1.08	1.35
Kansas (Kaw Valley)	96	138	96	91	105	168	103	1.04	2.56	.88	.75	.96	.76	1.31
Kentucky	82	96	69	110	105	148	107	1.00	1.40	1.00	1.22	1.47	.60	1.80
Maryland	110	138	124	138	96	95	86	1.40	2.28	.92	1.01	1.54	.76	1.31
Missouri (Orrick)	110	110	82	82	95	110	100	1.52	2.64	.76	1.00	.95	.65	1.49
Nebraska (Kearney District)	110	120	94	108	68	75	115	1.74	3.43	1.35	.82	1.00	.71	1.44
New Jersey	124	138	124	155	60	156	91	1.52	1.72	1.32	.69	1.69	.81	1.35
Oklahoma	96	82	41	96	85	96	100	1.88	2.64	1.56	1.14	1.52	.94	1.37
Average	109	114	114	116	93	131	103	1.67	2.57	1.13	1.17	1.59	.99	1.41

Division of Crop and Livestock Estimates.

[1] Average for season.

TABLE 267.—*Potatoes: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	11.3	2.8	0.3	1.8	0.2	0.2	(1)	0.1	16.7	1.7	1.7	0.1	0.2	0.9	21.3
1910	16.7	1.3	.2	1.2	.1	.4	(1)	.4	20.3	3.0	4.8	.2	.3	.9	29.5
1911	27.1	1.4	------	1.2	.1	2.9	(1)	.6	33.3	2.6	2.6	.1	.5	3.1	42.2
1912	5.9	3.1	.4	.6	.1	.2	.1	.4	10.8	5.5	3.6	.1	.3	1.1	21.4
1913	22.0	1.1	.2	1.8	.1	.7	(1)	.7	26.6	1.4	3.8	.1	.4	1.8	34.1
1914	17.1	1.4	.1	.7	.1	.5	(1)	.3	20.2	1.3	3.2	------	.2	1.7	26.6
1915	2.2	8.7	.5	2.2	.1	.1	.1	.1	14.0	13.0	2.4	(1)	.1	.9	30.4
1916	19.7	6.5	.4	1.9	.2	1.4	.1	1.3	31.5	5.6	4.5	(1)	.2	1.8	43.6
1917	8.8	3.5	.2	3.0	.2	.3	(1)	.3	16.3	4.1	2.4	(1)	.1	.9	23.8
1918	14.7	1.0	.2	1.5	.1	.6	(1)	.3	18.4	5.3	3.3	(1)	.2	1.1	28.3
1919	16.3	5.0	.4	.7	.1	.7	.1	.3	23.6	8.8	4.7	(1)	.3	.7	38.1
1920	6.7	2.2	.3	.6	.2	.2	(1)	------	10.2	8.1	2.8	.1	.2	.4	21.8
1921	21.7	1.0	.1	1.2	.2	1.8	(1)	.1	26.1	5.7	3.5	.1	.3	.5	36.2
1922	10.6	2.8	.4	.3	.3	.2	(1)	.1	14.7	5.7	2.6	(1)	.2	.2	23.4
1923	11.7	1.6	.2	1.2	.3	.3	(1)	.1	15.4	3.4	2.7	(1)	.2	.3	22.0
1924	8.8	3.0	.3	1.0	.2	.1	(1)	(1)	13.4	4.0	2.0	.1	.2	.2	19.9

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 268.—*Potatoes: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913[1]	1922	1923	1924	1925 preliminary	Average 1909–1913[1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Canada	483	684	561	562	546	161.2	135.8	164.9	168.0	129.4
United States	3,677	4,307	3,816	3,348	3,113	97.3	105.3	109.0	127.0	103.8
Total North America	4,160	4,991	4,377	3,910	3,659	------	------	------	------	------
EUROPE										
United Kingdom:										
England and Wales	434	561	467	452	493	230.2	267.0	220.5	222.7	243.3
Scotland	144	157	137	138	142	240.8	283.2	223.7	228.6	257.5
Ireland	588	570	554	541	------	203.9	224.7	159.2	157.8	------
Norway	102	126	113	117	117	242.9	259.5	214.8	183.9	276.2
Sweden	377	400	392	390	393	152.7	177.2	152.8	131.9	179.7
Denmark	161	204	204	177	185	202.7	241.4	223.0	154.1	282.0
Netherlands	411	477	398	414	418	253.2	340.3	268.4	238.4	271.6
Belgium	404	445	377	392	394	274.3	324.6	275.1	268.6	241.5
Luxemburg	36	37	38	38	37	178.9	189.4	182.9	167.7	208.5
France	4,066	3,619	3,586	3,615	3,596	129.6	128.4	101.6	156.0	149.7
Spain	[2] 642	810	757	779	------	176.0	130.1	126.2	114.6	------
Portugal	------	51	51	------	------	------	130.0	129.9	------	------
Italy	759	861	860	860	865	89.0	62.4	76.7	83.7	93.6
Switzerland	[3] 115	112	110	111	111	214.5	221.6	211.7	206.3	245.4
Germany	6,775	6,724	6,738	6,821	6,941	202.7	222.2	177.7	196.1	220.8
Austria	436	403	373	414	416	122.4	127.5	140.5	146.2	197.0
Czechoslovakia	1,849	1,606	1,573	1,567	1,580	132.6	207.5	145.4	152.7	169.9
Hungary	619	635	646	612	633	114.9	76.4	75.9	92.2	133.8
Yugoslavia	458	532	526	538	------	101.1	58.5	81.1	70.2	------
Bulgaria	11	23	23	24	27	48.4	46.3	53.0	75.8	89.6
Rumania (grown alone)	[4] 343	355	430	466	460	122.1	106.2	168.0	121.9	------
Rumania (grown with corn)	55	149	150	175	------	------	------	------	------	------
Poland	5,693	5,409	5,632	5,760	5,872	156.2	225.7	172.8	171.4	182.1
Lithuania	403	326	353	436	403	101.4	208.3	169.7	139.7	144.1

[1] Averages for countries having changed boundaries are estimates for territory within present boundaries.
[2] Two-year average.
[3] Three-year average.
[4] Four-year average.

TABLE 268.—*Potatoes: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE—Continued										
EUROPE—continued	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
Latvia	209	171	196	185	196	120.7	145.1	108.4	134.2	158.4
Esthonia	190	187	179	166	162	144.9	141.1	140.1	149.5	138.6
Finland	[5] 181	167	167	166	167	101.9	115.6	101.7	140.4	131.4
Russia (Territory in Europe)	6,764	6,119	9,017	9,927	10,648	104.2	113.8	129.7	105.8	99.1
Total Europe countries reporting all periods	30,482	29,124	32,009	33,248	34,256					
NORTH AFRICA										
Algeria	44	47	46	18	23	42.0	55.0	26.0	41.9	32.3
Tunis		3	2	3	3		55.0	73.5	47.0	49.0
Total North Africa countries reporting all periods	44	47	46	18	23					
ASIA										
Russia (territory in Asia)	445	[6] 230	[6] 354	506	[6] 478	79.3	95.0	110.0	114.7	134.4
Japanese Empire:										
Japan	169	247	238			146.4	136.2	132.2		
Chosen	[2] 65	186	189	180		107.1	98.8	78.7	78.3	
Total Northern Hemisphere countries reporting all periods	34,686	34,162	36,432	37,176	37,938					
SOUTHERN HEMISPHERE										
Brazil		80	74	111			95.7	118.4	76.9	
Chile	69	80	72	67		123.3	141.5	135.8	155.0	
Uruguay		8	12	12			24.6	28.8	34.8	
Argentina	217	361	402	291		140.6	92.1	87.7	87.2	
Union of South Africa	[5] 62	80	71			49.5	44.0	49.7		
Southern Rhodesia		2	2				53.0	42.5		
Australia	144	136	134			100.5	90.1	124.7		
New Zealand	28	20	21	23		205.8	212.4	187.6	198.3	
Total Southern Hemisphere countries reporting all periods through 1924	314	461	495	381						
Total all countries reporting for all periods through 1925	34,686	34,162	36,432	37,176	37,938					

Division of Statistical and Historical Research. Official sources and the International Institute of Agriculture except as otherwise stated. Estimates given are for crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Averages for countries having changed boundaries are estimates for territory within present boundaries.
[2] Two-year average.
[5] One year only.
[6] Does not include Transcaucasia and Turkestan.

TABLE 269.—*Potatoes: Production in specified countries, average 1909–1913, annual 1922–1925*

[Thousand bushels—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925
NORTHERN HEMISPHERE					
NORTH AMERICA					
Canada	77,843	92,908	92,495	94,413	70,633
United States	357,699	453,396	416,105	425,283	323,243
Mexico	[2] 540	927	962	1,029	943
Total North America	436,082	547,231	509,562	520,725	394,819

[1] Averages for countries having changed boundaries are estimates for territory within present boundaries.
[2] One year only.

TABLE 269.—*Potatoes: Production in specified countries, average 1909–1913, annual 1922–1925*—Continued

[Thousand bushels—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925
NORTHERN HEMISPHERE—Continued					
EUROPE					
United Kingdom:					
England and Wales	99,893	149,781	102,965	100,651	119,952
Scotland	34,673	44,464	36,651	31,547	36,560
Ireland	119,874	128,091	88,219	85,344	----------
Norway	24,780	32,699	24,269	21,517	32,319
Sweden	57,581	70,877	59,917	51,440	70,618
Denmark	32,642	49,249	45,496	27,271	52,176
Netherlands	104,051	162,328	106,839	98,716	113,539
Belgium	110,830	144,453	103,697	105,306	95,165
Luxemburg	6,439	7,007	6,952	6,372	7,716
France	526,793	464,661	364,446	564,020	538,459
Spain	[3] 112,997	105,351	95,496	89,269	----------
Portugal	----------	6,628	6,624	6,598	----------
Italy	67,514	53,689	65,984	71,943	81,000
Switzerland	[4] 24,664	24,820	23,292	22,902	27,234
Germany	1,373,609	1,494,005	1,197,095	1,337,540	1,532,872
Austria	53,373	51,378	52,403	60,524	81,939
Czechoslovakia	245,210	333,231	228,701	239,358	268,367
Hungary	71,118	48,490	49,024	56,406	84,712
Yugoslavia	46,288	31,100	42,638	37,753	----------
Bulgaria	532	1,065	1,220	1,819	2,418
Rumania (grown alone)	[4] 41,868	37,691	67,920	56,815	----------
Rumania (grown with corn)	[4] 1,218	3,320	3,830	4,503	----------
Poland	889,531	1,220,576	973,487	987,292	1,069,451
Lithuania	40,864	67,902	59,899	60,927	58,091
Latvia	25,217	24,806	21,253	24,828	31,038
Esthonia	27,526	26,378	25,073	24,817	22,461
Finland	18,443	19,297	16,987	23,301	21,944
Russia (territory in Europe)	704,994	696,638	1,169,316	1,049,886	1,055,055
Total Europe countries reporting all periods through 1925	4,540,278	5,187,794	4,728,966	4,968,383	5,403,086
NORTH AFRICA					
Algeria	1,847	2,587	1,194	755	744
Tunis	----------	165	147	141	147
Total North Africa, countries reporting all periods	1,847	2,587	1,194	755	744
ASIA					
Russia (Territory in Asia)	35,296	[5] 21,855	[5] 38,944	58,051	71,962
Japanese Empire:					
Japan	24,738	33,634	31,469	----------	----------
Chosen (Korea)	[2] 6,960	18,385	14,874	14,093	----------
Total Northern Hemisphere countries reporting all periods	4,978,207	5,737,612	5,239,722	5,489,863	5,798,649
SOUTHERN HEMISPHERE					
Brazil	----------	7,658	8,762	8,532	----------
Chile	8,510	11,320	9,778	10,386	----------
Uruguay	----------	197	345	418	----------
Argentina	30,515	33,246	35,273	25,368	----------
Union of South Africa	[2] 3,071	3,518	3,530	----------	----------
Southern Rhodesia	----------	106	85	----------	----------
Australia	14,469	12,258	16,709	----------	----------
New Zeland	5,763	4,249	3,940	4,562	----------
Total Southern Hemisphere countries reporting all periods through 1924	44,788	48,815	48,991	40,316	----------
Total all countries reporting for all periods through 1925	4,978,207	5,737,612	5,239,722	5,489,863	5,798,649
Estimated world total [6]	5,444,000	6,196,000	5,708,000	5,939,000	----------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Estimates given are for the crops harvested during the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Averages for countries having changed boundaries are estimates for territory within present boundaries.
[2] One year only.
[3] Two-year average.
[4] Four-year average.
[5] Does not include Transcaucasia and Turkestan.
[6] Excludes a few minor producing regions which do not enter into world trade in potatoes and for which production estimates are not available.

TABLE 270.—*Potatoes: Car-lot shipments by State of origin, April, 1920–December, 1925*

State	Crop movement season [1]					Quarters 1925 [2]		
	1920	1921	1922	1923	1924	Apr.-June	July-Sept.	Oct.-Dec.
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Maine	18,695	38,035	24,404	34,764	43,145	----------	5,755	11,876
New York	17,340	18,990	19,292	18,634	20,130	----------	3,894	3,765
New Jersey	16,878	10,367	18,335	6,352	8,637	----------	3,202	128
Pennsylvania	6,723	3,554	5,751	4,092	3,948	----------	1,149	3,179
Michigan	17,171	15,237	[3] 19,836	20,555	17,438	----------	2,854	4,497
Wisconsin	19,832	11,051	21,788	17,137	16,035	----------	2,922	5,759
Minnesota	23,879	29,579	28,931	33,602	31,695	----------	6,734	6,907
Iowa	947	96	843	273	553	----------	163	40
North Dakota	1,924	10,592	8,351	10,384	6,059	----------	1,021	2,472
South Dakota	1,993	3,386	2,703	3,860	1,881	----------	477	450
Nebraska	3,055	5,375	5,564	4,833	2,918	----------	920	1,751
Kansas	1,994	2,349	2,433	3,565	4,797	75	2,630	9
Maryland	3,275	2,402	3,497	2,728	2,673	25	1,439	36
Virginia	15,877	17,698	19,023	15,923	23,608	7,574	8,245	18
North Carolina	2,644	3,089	4,194	3,478	6,568	3,774	264	----------
South Carolina	2,437	2,446	4,345	4,210	5,266	3,676	3	----------
Florida	3,441	2,391	[4] 5,047	3,499	4,377	[5] 5,125	2	3
Kentucky	1,233	643	496	1,241	1,593	----------	714	4
Alabama	324	593	1,925	1,384	2,920	1,041	1	1
Arkansas	247	138	341	231	449	507	19	----------
Louisiana	1,067	1,211	1,083	825	1,425	1,279	1	----------
Oklahoma	580	267	1,000	1,034	1,263	2,291	33	7
Texas	822	[6] 1,135	1,499	801	1,425	[7] 1,413	1	11
Montana	968	1,845	1,412	757	423	----------	34	622
Idaho	8,636	14,795	16,213	15,616	11,942	----------	2,190	6,521
Wyoming	572	958	1,037	687	652	----------	347	321
Colorado	11,229	17,697	15,468	13,869	12,413	----------	4,045	4,820
Utah	617	1,078	2,037	1,017	727	9	719	219
Nevada	437	469	744	700	452	----------	11	424
Washington	3,937	6,193	5,059	6,160	6,695	----------	1,536	2,867
Oregon	1,759	1,368	1,842	1,615	927	6	199	713
California	10,953	9,301	7,766	5,724	6,588	715	2,833	1,200
Other States	1,400	1,675	2,086	2,577	2,980	501	1,404	767
Total	202,886	[8] 236,003	[8] 254,345	242,127	252,602	[9] 28,011	55,761	59,387

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from April 1 of one year through July of the following year, except in Florida where the season begins in March.
[2] Preliminary.
[3] Includes 8 cars in August, 1923.
[4] Includes 1 car in February, 1922.
[5] Includes 28 cars in February, 1925.
[6] Includes 32 cars in March, 1921.
[7] Includes 11 cars in March, 1925.
[8] Includes 1 car in February, 1922, and 8 in August, 1923.
[9] Includes 28 cars in February and 11 in March, 1925.

TABLE 271.—*Potatoes: Car-lot shipments by State of origin, April, 1920–December, 1925*

State and year	Crop movement season [1]															
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
Maine:	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
1920					313	1,172	2,262	2,109	1,704	2,497	2,090	2,546	1,831	1,696	459	16	18,695
1921					575	4,398	4,097	2,901	2,771	3,571	3,390	4,477	4,816	4,465	1,918	56	38,035
1922					198	1,778	3,077	2,676	2,361	2,717	2,782	3,513	2,589	1,533	1,137	43	24,404
1923					293	3,959	5,780	3,645	3,025	4,321	3,878	4,103	3,143	2,087	528	2	34,764
1924					107	2,767	5,955	4,051	3,908	4,999	5,244	5,105	4,861	3,961	1,904	283	43,145
1925 [2]					1,206	4,549	5,780	3,005	3,091								
New York:																	
1920				57	367	1,051	2,502	2,924	1,090	1,393	1,887	2,367	2,066	1,446	190		17,340
1921				211	1,369	2,160	4,852	1,945	1,364	2,138	1,517	1,818	1,130	428	57	1	18,990
1922				93	815	1,770	3,397	2,656	1,838	2,207	2,058	2,851	1,159	354	91	3	19,292
1923			6	65	1,866	1,716	2,346	1,903	1,070	1,771	1,839	2,321	2,135	1,406	185	5	18,634
1924				30	465	1,419	2,887	2,709	1,732	2,275	2,282	2,539	2,167	1,273	323	29	20,130
1925 [2]				582	1,694	1,618	2,293	643	829								
New Jersey:																	
1920				1,609	5,317	6,035	2,608	966	111	40	28	114	40	10			16,878
1921				2,031	5,825	1,637	367	287	49	23	55	75	16	2			10,367
1922			7	2,234	8,387	4,756	1,971	609	73	34	9	174	72	9			18,335
1923				86	3,869	1,706	343	184	15	13	18	90	21	7			6,352
1924				42	4,213	3,635	530	76	26	14	19	70	11	1			8,637
1925 [2]				299	2,733	170	58	64	6								
Pennsylvania:																	
1920				2	17	390	1,357	1,924	421	561	423	734	577	299	15	3	6,723
1921					66	436	1,147	588	248	413	286	211	121	36	1	1	3,554
1922					124	893	1,432	1,176	444	492	290	496	318	74	10	2	5,751
1923					31	178	584	884	288	534	393	428	468	259	45		4,092
1924				1	5	372	745	707	351	450	483	329	317	172	14	2	3,948
1925 [2]					102	1,047	1,715	917	547								
Michigan:																	
1920				2	39	577	2,219	3,126	1,290	1,631	990	1,655	2,174	2,629	813	26	17,171
1921					3	799	3,213	1,887	880	1,516	1,240	2,041	1,523	1,414	718	3	15,237
1922					76	1,216	2,600	2,477	1,380	1,474	1,419	2,170	2,924	2,321	1,630	[3] 149	[3] 19,836
1923					46	896	2,490	2,587	1,292	1,823	2,201	2,567	2,917	2,657	1,065	14	20,555
1924					37	1,648	2,250	1,964	1,132	1,876	1,798	2,110	1,668	2,168	774	13	17,438
1925 [2]				5	949	1,900	2,554	1,088	855								

[1] Crop movement season extends from Apr. 1 of one year through July of the following year, except in Florida where the season begins in March.
[2] Preliminary.
[3] Includes 8 cars in August, 1923.

TABLE 271.—*Potatoes: Carlot shipments by State of origin, April, 1920–December, 1925*—Continued

State and year	Crop movement season [1]															
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Wisconsin:					27	565	3,507	3,044	1,333	2,493	2,070	2,457	2,283	1,618	434	1	19,832
1920					65	760	2,128	725	628	1,367	1,201	1,993	1,166	755	260	3	11,051
1921					205	1,377	3,685	2,018	1,635	2,496	1,909	2,998	2,725	1,737	945	58	21,788
1922					189	1,295	2,633	1,481	1,102	1,956	2,209	2,014	1,917	1,728	605	8	17,137
1923					2	768	2,359	1,558	1,145	2,279	1,860	2,160	1,578	1,785	533	8	16,035
1924				1	658	2,263	3,073	1,515	1,171								
1925 [2]																	
Minnesota:				65	1,427	2,899	7,095	3,423	931	1,520	1,774	2,531	1,137	849	220	8	23,879
1920					1,049	5,027	8,857	2,167	858	1,894	1,442	4,443	2,514	1,080	248		29,579
1921				508	1,432	4,167	7,062	2,466	659	1,724	1,532	4,215	3,274	1,390	481	21	28,931
1922				15	1,755	6,157	7,904	2,712	1,095	2,568	3,852	3,821	2,419	1,012	290	2	33,602
1923				29	571	2,659	8,785	3,672	1,214	3,096	3,828	4,176	1,946	1,362	355	2	31,695
1924				498	2,649	3,587	4,684	1,496	727								
1925 [2]																	
North Dakota:						131	856	254	93	105	134	234	62	48	7		1,924
1920					13	2,228	5,653	588	101	369	278	865	373	104	20		10,592
1921					12	1,039	2,844	891	224	393	346	1,064	1,293	220	23	2	8,351
1922					19	1,829	4,160	754	239	514	801	1,214	705	113	35	1	10,384
1923					3	283	2,005	580	159	588	778	1,055	361	191	56		6,059
1924				2	16	1,003	1,987	355	130								
1925 [2]																	
Nebraska:				1	197	391	857	568	140	260	308	272	50	10	1		3,055
1920			1	290	471	950	1,246	393	294	495	342	456	238	184	15		5,375
1921				51	570	744	903	461	376	743	432	504	530	210	40		5,564
1922				12	281	389	648	699	286	777	817	464	316	114	30		4,833
1923				6	175	314	414	275	207	633	455	269	95	64	11		2,918
1924				48	275	597	924	611	216								
1925 [2]																	
Kansas:			34	1,276	623	25	12	7	2	5	6	3	1				1,994
1920			19	1,189	983	112	32	8	1	3	1	1					2,349
1921			61	1,340	886	102	23	15	2	1		3					2,433
1922				1,853	1,692	11		1	2		3	1		2			3,565
1923				2,520	1,845	337	53	3	1	1		1	1				4,797
1924			35	2,237	391	2	7	2									
1925 [2]			75														
Virginia:			5,086	7,534	1,569	272	148	718	145	126	72	84	123				15,877
1920		400	9,000	6,798	534	59	59	373	87	43	56	131	98	60			17,698
1921			8,404	9,317	651	74	94	246	40	60	43	58	75	6			19,023
1922			5,213	9,445	562	75	29	297	20	57	34	119	59	13			15,923
1923			3,810	15,229	3,495	549	157	144	110	20	9	55	20	10			23,608
1924			7,574	8,045	181	19	4	5	9								
1925 [2]																	

North Carolina:																
1920		88	2,375	123	10	2	23	22	1							2,644
1921		308	2,215	415	106	19	1	6	1	2	7	1	7	1		3,089
1922		201	3,525	396	41	1	14	6		2	2	3	3			4,194
1923		14	3,141	215	71	19	4		1	12	1					3,478
1924	3	33	4,956	1,276	157	109	13	5	1	1	6	6	2			6,568
1925 [2]		521	3,253	207	57											
South Carolina:																
1920	1	642	1,775	16						1	2					2,437
1921		2,009	412	14	2					3		6				2,446
1922		3,293	1,044	4	1				1	2						4,345
1923		1,848	2,347	11	1			2		1						4,210
1924		1,527	3,666	68	4						1					5,266
1925 [2]		3,055	621	3												
Florida: [4]																
1920	122	2,353	926	37			1	2								3,441
1921	1,814	550	25							2						2,391
1922	2,713	2,214	113		3		1			3						5,047
1923	1,089	2,291	108	3				1	2	1	4					3,499
1924	1,444	2,801	126	4					1	1						4,377
1925 [2]	3,296	1,817	12	1	1			2	1							
Idaho:																
1920				43	1,019	727	1,288	1,710	715	1,111	574	918	405	110	16	8,636
1921				169	1,936	1,373	2,457	1,071	847	1,060	939	1,713	1,936	1,087	198	14,795
1922				35	1,415	1,310	1,669	1,482	981	1,320	878	2,178	2,874	1,430	631	16,213
1923				66	1,763	1,540	1,707	1,844	1,354	1,641	1,430	2,204	1,244	740	83	15,616
1924				128	667	1,373	1,750	1,400	1,025	1,766	1,141	1,369	1,155	134	34	11,942
1925 [3]				243	779	1,168	2,296	2,412	1,813							
Colorado:																
1920				27	677	2,164	2,468	1,504	688	1,275	912	792	510	199	13	11,229
1921				90	1,008	3,124	2,529	1,406	915	1,981	1,510	2,125	1,821	997	188	3	17,697
1922				74	788	2,365	1,865	1,294	1,123	1,875	1,627	2,104	1,326	790	236	1	15,468
1923				204	1,099	1,772	1,965	1,140	1,002	2,071	1,638	1,470	739	664	105		13,869
1924				207	598	2,080	1,968	1,493	913	1,883	1,354	855	566	448	48		12,413
1925 [2]				537	685	2,823	3,026	1,062	732							
Washington:																
1920				71	140	281	856	779	149	206	160	428	551	205	111		3,937
1921				98	194	379	1,200	858	418	575	384	476	595	589	429		6,193
1922				178	190	241	479	506	292	401	339	709	1,145	394	185		5,059
1923				140	133	231	803	1,000	427	754	652	1,030	693	154	143		6,160
1924				201	262	552	1,242	896	482	886	325	472	955	266	156		6,695
1925 [2]				286	411	839	1,441	1,082	344							
California:																
1920		112	1,012	1,805	1,227	1,070	1,287	1,270	1,076	792	596	462	198	46		10,953
1921		88	1,155	1,780	862	887	901	623	610	737	566	584	331	177		9,301
1922		6	956	1,473	744	623	719	717	582	739	544	420	201	42		7,766
1923		110	787	717	637	854	706	538	470	437	258	153	44	13		5,724
1924		98	549	784	823	956	788	709	635	532	343	210	125	36		6,588
1925 [2]		141	574	848	1,015	970	555	323	322							

[2] Preliminary.

[4] Includes cars moved earlier as follows: 11 in March, 1920; 105 in March, 1921; 1 in February and 221 in March, 1922; 36 in March, 1923; 109 in March, 1924; 28 in February and 373 in March, 1925.

TABLE 271.—*Potatoes: Car-lot shipments by State of origin, April, 1920–December, 1925*—Continued

State and year	Crop movement season [1]																
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
Other States:	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
1920	105	790	2,324	2,613	1,150	1,123	2,824	1,717	522	461	461	715	949	419	66	2	16,241
1921	[5] 314	1,987	1,249	2,467	1,179	1,974	3,617	903	368	520	507	697	815	554	109	4	[5] 17,264
1922	68	2,637	3,833	3,059	1,701	1,964	3,403	1,354	437	579	399	972	1,544	481	112	2	22,545
1923	94	1,048	3,172	3,618	2,420	1,436	3,122	1,065	287	511	688	832	1,071	288	78		19,730
1924	232	3,020	4,511	3,067	2,965	1,566	2,240	610	195	413	438	469	416	165	33	3	20,343
1925 [2]	[5] 989	2,632	3,451	3,554	1,020	988	1,887	1,398	330								
Total:																	
1920	[4] 228	3,985	13,532	15,281	14,119	18,875	32,170	26,067	10,411	14,477	12,487	16,312	12,957	9,584	2,345	56	[4] 202,886
1921	[4] 2,128	5,342	14,076	15,550	16,240	26,322	42,956	16,729	10,440	16,721	13,721	22,113	17,500	11,933	4,161	71	[6] 236,003
1922	[6] 2,781	8,351	17,943	18,762	18,239	24,420	35,193	21,050	12,448	17,262	14,609	24,432	22,052	10,991	5,521	[3] 291	[7] 254,345
1923	[4] 1,183	5,311	14,774	16,450	16,727	24,063	35,224	20,737	11,977	19,762	20,716	22,831	17,891	11,257	3,192	32	[4] 242,127
1924	[4] 1,679	7,479	17,653	23,592	16,394	21,387	34,141	20,352	13,237	21,713	20,364	21,250	16,244	12,036	4,241	340	[4] 252,602
1925	[5] 4,285	8,166	15,560	17,396	14,822	23,543	32,284	15,980	11,123								

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Preliminary.
[3] Includes 8 cars in August, 1923.
[4] Includes cars moved earlier as follows: In March, 1920: 105 in March, 1921; 1 in February and 221 in March, 1922, 36 in March, 1923; 109 in March, 1924; 28 in February and 373 in March, 1925.
[5] Texas includes 32 cars in March, 1921, and 11 in March, 1925.
[6] Includes 137 cars in March, 1921.
[7] Includes 1 car in February, 221 in March, 1922, and 8 in August, 1923.
[8] Includes 28 cars in February and 384 cars in March, 1925.

TABLE 272.—*Potatoes: International trade, average 1911–1913, annual 1922–1924*

[Thousand bushels—i. e., 000 omitted]

Country	Year ended December 31							
	Average 1911-1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	1,337	543	113	1,243	81	1,179	55	2,557
Belgium	4,921	8,692	6,769	3,035	3,230	6,513	2,752	2,806
Canada	525	1,207	347	3,609	375	2,976	940	3,130
China	36	288	----	468	----	201	----	320
Czechoslovakia	----	----	319	2,834	358	2,037	146	122
Denmark	40	928	121	2,244	213	506	175	334
Esthonia [1]	----	----	----	1,712	2	537	----	791
Hungary [1]	----	----	404	4	131	1,060	17	626
Italy	242	3,975	3	4,526	39	6,114	69	6,791
Japan	----	440	----	237	----	321	----	303
Netherlands	1,952	16,451	735	11,538	747	13,399	506	15,344
Norway	215	60	398	77	8	15	1	102
Poland	----	----	62	5,252	17	6,068	33	10,972
Portugal	273	500	[1] 319	[1] 19	1,362	[1] 29	661	----
Russia	309	7,762	[1] 179	([1]) ([2])	----	----	----	----
Spain	----	1,835	506	1,346	1,325	1,624	[3] 179	[3] 867
United States	3,707	1,814	1,775	2,897	732	2,696	452	3,862
PRINCIPAL IMPORTING COUNTRIES								
Algeria	1,218	931	1,200	614	993	955	1,305	1,067
Austria	----	----	3,666	2	2,979	94	1,666	[1] 15
Austria-Hungary	4,070	1,451	----	----	----	----	----	----
Brazil	939	([2])	94	3	59	1	----	----
British India	----	----	874	12	1,193	23	[4] 21	[4] 2
Cuba	2,001	2	3,755	1	3,992	----	4,860	3
Egypt	599	[5] 28	593	219	763	53	765	68
Finland	479	15	527	1	1,167	([2])	614	----
France	7,143	8,683	13,635	5,145	10,880	8,064	5,840	10,288
Germany	29,180	12,412	6,158	2,468	6,394	743	10,652	2,317
Philippine Islands	334	----	300	----	322	----	300	----
Sweden	700	64	78	750	364	14	268	5
Switzerland	3,172	42	2,260	19	1,461	7	2,930	4
Tunis	[6] 294	[6] 2	320	4	[1] 394	[1] 1	365	3
United Kingdom	11,382	6,246	6,397	5,433	9,055	2,412	16,791	1,531
Uruguay	[5] 768	1	[1] 1,325	----	[7] 1,304	([2])	[1] 1,234	[1] 1
Other countries	931	779	2,287	1,606	3,301	2,241	4,139	2,107
Total	78,767	75,151	55,519	57,318	53,241	59,883	57,736	66,338

Division of Statistical and Historical Research. Official sources except where otherwise noted.

[1] International Institute of Agriculture.
[2] Less than 500 bushels.
[3] Six months.
[4] Three months.
[5] One year only.
[6] Two-year average.
[7] Eleven months.

TABLE 273.—*Potatoes: Estimated price per bushel, received by producers, United States, 1909–1925*

Year beginning July	July 15	Aug. 15	Sept 15	Oct. 15	Nov. 15	Dec 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	88.0	78.3	67.9	61.0	56.0	55.0	56.1	55.4	51.0	42.9	37.9	38.8	57.9
1910	52.5	68.9	70.4	61.8	55.7	54.9	54.6	55.2	55.4	59.0	62.9	79.8	61.3
1911	116.2	124.8	101.0	82.3	78.1	82.2	89.4	98.2	109.6	122.2	123.5	111.6	99.6
1912	95.0	75.8	58.0	48.3	48.0	50.6	51.8	52.6	51.2	49.2	51.7	52.5	55.6
1913	59.5	72.2	74.6	71.8	69.2	68.6	69.0	70.2	70.4	70.7	71.4	76.4	70.6
Av. 1909–1913	82.2	84.0	74.4	65.0	61.4	62.3	64.2	66.3	67.5	68.8	69.5	71.8	69.0
1914	84.3	81.0	69.8	58.8	50.8	49.2	50.0	50.4	49.1	49.2	50.6	51.4	58.0
1915	54.2	53.4	49.6	54.8	61.2	66.2	79.3	91.2	96.0	96.2	96.8	100.6	70.8
1916	98.8	102.4	110.6	123.8	140.9	146.7	159.8	206.6	237.7	257.2	276.8	261.0	166.3
1917	209.4	155.0	130.5	125.0	125.3	121.9	122.0	121.6	106.4	86.4	77.8	85.2	122.5
1918	118.2	145.2	146.2	135.4	123.2	117.7	115.2	111.9	107.4	112.2	120.2	124.9	125.6
1919	160.6	190.2	175.8	158.5	156.2	169.0	198.1	230.6	269.6	344.6	407.4	403.6	223.8
1920	344.4	243.9	159.8	126.6	116.4	110.0	100.6	89.8	80.9	72.9	67.6	68.5	131.5
Av. 1914–1920	152.8	138.7	120.3	111.8	110.6	111.5	117.9	128.9	135.3	145.5	156.7	156.5	128.4
1921	103.4	152.8	153.1	130.6	116.8	109.4	112.0	116.6	115.7	109.0	104.2	103.7	121.3
1922	109.0	101.4	78.8	66.2	60.5	58.8	62.0	64.2	68.6	77.4	79.0	79.8	73.9
1923	102.9	120.8	109.6	91.4	82.5	81.5	86.4	88.1	87.8	91.1	91.3	100.7	94.2
1924	109.0	111.3	81.0	68.8	63.5	64.1	70.2	72.3	71.4	70.5	70.6	84.4	76.5
1925	125.5	155.4	121.1	125.6	198.4	201.5	----	----	----	----	----	----	----

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, July, 1909–December, 1923.

TABLE 274.—*Potatoes: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Maine	55	33	70	142	130	120	140	125	109	85	45	70	43	200	89
New Hampshire	69	60	95	166	167	145	175	155	138	135	105	115	84	235	135
Vermont	59	47	81	139	140	138	157	125	118	104	93	100	85	215	119
Massachusetts	81	71	94	175	175	170	190	150	146	152	95	135	96	245	145
Rhode Island	84	70	92	185	175	173	180	160	148	160	90	130	95	245	144
Connecticut	85	65	96	175	164	165	195	150	144	150	100	147	100	250	149
New York	65	44	82	158	130	122	145	118	114	108	60	95	57	215	107
New Jersey	80	61	75	155	141	170	169	125	128	142	72	110	67	230	124
Pennsylvania	69	58	75	148	135	151	154	124	121	133	75	105	80	194	117
Ohio	66	53	70	182	143	150	192	135	132	155	90	100	89	200	127
Indiana	65	56	56	177	139	135	195	133	127	145	84	86	80	216	122
Illinois	72	61	59	179	152	148	196	145	134	140	90	88	75	235	126
Michigan	46	30	56	160	105	89	135	92	95	95	34	44	35	162	74
Wisconsin	45	30	45	147	90	80	140	86	88	95	33	47	36	170	76
Minnesota	47	32	39	130	91	75	153	80	86	90	35	39	27	154	69
Iowa	63	59	54	175	131	133	192	122	124	140	67	77	55	235	115
Missouri	80	73	60	180	137	153	184	151	134	135	92	88	82	225	124
North Dakota	55	42	41	115	130	73	160	98	94	70	31	35	39	150	65
South Dakota	63	47	35	137	111	93	190	97	101	107	44	44	48	180	85
Nebraska	73	54	42	150	107	118	190	120	112	120	47	70	62	180	96
Kansas	88	77	74	165	152	144	190	150	136	135	92	99	91	235	130
Delaware	75	70	75	125	130	140	125	100	109	110	70	102	80	200	112
Maryland	67	60	62	133	119	120	130	95	103	110	60	100	81	194	109
Virginia	74	77	61	137	125	120	157	95	110	110	65	87	82	195	108
West Virginia	78	81	65	158	132	160	175	135	129	163	87	105	98	193	129
North Carolina	84	92	73	140	143	135	163	142	127	143	101	120	112	180	131
South Carolina	117	125	115	175	210	193	200	180	171	150	128	160	145	210	159
Georgia	101	105	99	175	195	185	217	208	169	165	140	160	150	210	165
Florida	118	113	115	200	205	200	210	200	178	190	175	190	165	260	196
Kentucky	80	84	55	142	140	165	210	150	135	165	100	120	102	200	137
Tennessee	82	91	63	149	126	165	172	160	132	165	110	112	112	195	139
Alabama	101	101	90	169	182	181	215	200	163	170	150	150	155	220	169
Mississippi	99	95	84	160	168	165	185	200	151	200	160	154	164	200	176
Arkansas	97	97	76	190	157	184	205	175	155	180	130	136	128	210	157
Louisiana	92	97	95	167	184	150	220	208	159	180	150	150	150	210	168
Oklahoma	103	90	84	195	180	195	205	180	161	185	123	128	130	225	158
Texas	112	104	105	190	210	200	210	220	177	190	160	160	170	240	184
Montana	63	64	50	120	102	80	160	105	97	80	40	65	87	160	86
Idaho	51	48	56	127	79	81	151	68	87	77	31	50	54	145	71
Wyoming	82	70	60	128	104	85	190	120	108	118	50	93	87	160	102
Colorado	63	50	55	135	91	99	170	80	97	73	37	53	60	155	76
New Mexico	102	95	95	175	165	160	190	210	156	180	145	160	104	200	158
Arizona	131	120	100	180	150	205	195	190	163	140	90	140	150	230	150
Utah	59	60	63	130	78	97	137	80	92	85	40	70	74	133	80
Nevada	77	70	70	130	120	123	150	156	117	120	60	105	106	190	116
Washington	57	55	53	98	92	101	145	95	91	99	45	70	85	165	93
Oregon	57	60	60	90	80	100	150	80	89	109	52	70	95	150	95
California	77	70	75	140	150	120	171	150	125	130	72	112	90	200	121
United States	61.8	48.7	61.7	146.1	122.8	119.3	159.5	114.5	110.4	110.1	58.1	78.1	62.6	187.2	99.2

Division of Crop and Livestock Estimates

TABLE 275.—*Potatoes: Average l. c. l. price per 100 pounds, to jobbers, at nine markets, 1919-1925*

Market. Season beginning April [1]	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
New York:	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1919	6.25	4.29	4.37	3.43	3.39	2.79	2.57	2.63	3.09	4.23	4.49	5.49	7.58	7.19
1920	------	9.03	6.93	5.54	2.56	1.83	1.93	1.96	1.82	1.80	1.31	1.51	1.28	1.22
1921	4.41	4.18	1.90	2.23	2.90	2.11	2.09	1.92	2.07	2.33	2.18	2.03	1.79	1.58
1922	4.07	3.27	3.03	1.81	1.04	.95	.96	1.22	1.36	1.39	1.44	1.87	2.09	1.76
1923	7.24	4.13	3.08	3.08	2.57	1.49	1.85	1.67	1.59	1.96	2.01	1.96	2.12	1.73
1924	5.92	4.12	2.34	1.48	1.41	1.37	1.33	1.22	1.26	1.46	1.56	1.21	1.20	1.36
1925	4.03	3.34	2.83	3.18	2.83	2.43	3.23	4.09	4.20	------	------	------	------	------
Chicago:														
1919	6.40	5.32	4.33	4.18	[2] 3.99	[2] 2.73	[2] 2.40	[2] 2.90	3.83	5.54	4.80	6.00	[2] 6.98	[2] 7.40
1920	------	9.14	8.38	[2] 6.44	[2] 3.42	[2] 2.40	[2] 1.85	[2] 2.13	[2] 1.58	[2] 1.29	[2] 1.15	[2] 1.25	[2] .98	[2] .87
1921	4.83	4.50	[2] 2.42	[2] 2.33	[2] 3.11	[2] 2.65	[2] 2.00	[2] 1.75	[2] 1.83	[2] 1.98	[2] 1.96	[2] 1.80	[2] 1.69	[2] 1.70
1922	4.16	3.57	[2] 3.03	[2] 2.29	[2] 1.63	[2] 1.17	[2] 1.00	[2] 1.05	[2] .96	[2] 1.02	[2] 1.07	[2] 1.35	[2] 1.53	[2] 1.13
1923	------	4.80	[2] 3.15	[2] 2.76	[2] 2.18	[2] 1.70	[2] 1.14	[2] 1.24	[2] 1.27	[2] 1.58	[2] 1.71	[2] 1.75	[2] 1.79	[2] 1.50
1924	5.68	4.69	2.65	[2] 1.76	[2] 1.40	[2] 1.32	[2] .97	[2] 1.31	[2] 1.36	[2] 1.47	[2] 1.63	[2] 1.44	[2] .84	[2] 1.18
1925	4.75	3.90	[2] 2.96	[2] 3.28	[2] 2.68	[2] 2.00	[2] 2.67	[2] 3.47	[2] 3.64	------	------	------	------	------
Philadelphia:														
1919	5.31	4.77	4.11	3.61	3.48	2.51	2.48	2.64	3.25	4.07	4.35	5.24	6.74	7.13
1920	[3] 11.00	8.39	6.87	5.58	2.59	1.89	1.87	2.09	1.48	1.65	1.20	[4] 1.07	1.05	1.03
1921	3.96	4.14	1.93	2.11	3.07	2.41	2.19	2.01	2.00	2.29	2.23	1.98	1.69	1.39
1922	3.76	3.13	2.89	1.77	1.10	1.00	1.09	1.25	1.32	1.36	1.36	1.79	2.17	1.61
1923	7.21	4.03	3.02	3.24	2.84	2.06	1.96	1.66	1.73	1.98	2.00	1.86	1.92	1.79
1924	5.16	4.20	2.29	1.43	1.27	1.39	1.35	1.22	1.31	1.51	1.61	1.24	1.12	1.44
1925	4.09	3.51	2.89	3.26	2.95	2.16	2.84	3.99	4.14	------	------	------	------	------
Pittsburgh:														
1919	6.59	4.99	4.56	4.07	4.10	3.18	2.74	2.80	3.33	4.51	4.52	5.57	7.00	7.66
1920	------	9.54	7.48	5.98	3.01	2.31	2.33	2.48	1.84	1.60	1.36	1.48	1.11	1.08
1921	4.50	4.37	2.28	2.73	3.43	2.71	2.30	2.10	2.01	2.26	2.13	2.01	1.85	1.61
1922	4.36	3.47	3.19	2.20	1.43	1.39	1.33	1.30	1.11	1.16	1.20	1.67	1.60	1.36
1923	7.30	4.44	3.35	3.44	3.13	2.38	1.67	1.46	1.33	1.67	1.65	1.60	1.74	1.55
1924	6.23	4.23	2.64	1.86	1.58	1.59	1.35	1.24	1.18	1.41	1.39	1.30	1.17	1.36
1925	4.55	3.73	3.24	3.65	3.20	2.22	2.75	3.81	3.92	------	------	------	------	------
St. Louis:														
1919	5.98	5.62	3.33	3.62	3.12	2.90	2.71	2.99	------	4.61	4.49	------	7.55	7.57
1920	------	10.75	8.35	6.60	3.69	2.71	2.25	2.33	1.87	1.58	1.39	1.48	1.23	1.22
1921	5.76	3.49	2.77	2.84	3.16	2.83	2.28	1.89	1.93	2.27	2.14	1.98	1.89	1.91
1922	5.87	3.81	2.96	2.49	1.73	1.53	1.26	1.20	1.10	1.16	1.18	1.44	1.59	1.45
1923	7.32	5.56	3.05	------	------	1.94	1.38	1.40	1.44	1.73	1.71	1.71	1.77	1.56
1924	5.60	3.91	2.48	1.86	1.31	1.54	1.27	1.25	1.38	1.55	1.56	1.42	1.08	1.48
1925	4.89	3.36	2.77	3.06	3.00	2.43	2.73	3.73	3.83	------	------	------	------	------
Cincinnati:														
1919	5.54	4.71	4.33	3.87	3.83	3.12	2.94	2.97	3.29	4.60	4.51	5.51	7.28	[4] 7.36
1920	------	8.65	7.59	6.49	3.41	2.57	2.19	2.60	1.92	1.68	1.58	1.77	1.22	1.13
1921	4.12	4.10	2.49	2.65	3.52	2.96	2.46	1.93	1.97	2.30	2.16	2.06	1.94	1.93
1922	3.96	3.28	3.01	2.44	1.74	1.48	1.30	1.17	1.15	1.20	1.21	1.46	1.45	1.27
1923	6.62	4.43	3.33	------	------	1.85	1.36	1.24	1.26	1.69	1.65	1.61	1.65	1.56
1924	5.35	3.93	2.48	1.97	1.58	1.59	1.24	1.19	1.29	1.49	1.61	1.52	1.30	1.34
1925	5.05	3.56	3.50	3.60	3.19	2.45	2.93	4.15	4.12	------	------	------	------	------
Minneapolis:														
1919	------	------	------	4.13	------	------	------	------	------	------	------	------	------	------
1920	------	------	9.02	8.29	------	------	------	------	------	------	------	------	------	------
1921	------	------	3.05	2.90	3.43	------	------	------	------	------	------	------	------	------
1922	------	------	3.36	2.86	------	------	------	------	------	------	------	------	------	------
1923	------	------	3.37	3.04	------	------	------	------	------	------	------	------	------	------
1924	------	------	------	2.52	------	------	------	------	------	------	------	------	------	------
1925	------	3.77	3.38	3.38	------	------	------	------	------	------	------	------	------	------
Kansas City:														
1919	8.11	7.01	3.32	------	------	------	------	------	------	------	------	------	[2] 1.37	[2] 1.20
1920	------	------	8.77	------	2.81	2.69	2.06	2.27	------	------	------	------	------	------
1921	6.36	3.93	3.06	------	3.09	2.63	[2] 1.97	[2] 1.51	[2] 1.65	[2] 2.04	[2] 1.99	[2] 1.88	[2] 1.77	1.84
1922	5.62	3.93	2.87	------	------	[2] 1.23	[2] 1.12	[2] 1.07	[2] 1.03	[2] 1.05	[2] 1.07	[2] 1.24	[2] 1.21	[2] 1.05
1923	------	6.14	2.99	------	[2] 1.79	[2] 1.52	[2] 1.16	[2] 1.30	[2] 1.30	[2] 1.62	[2] 1.57	[2] 1.65	[2] 1.89	[2] 1.70
1924	5.99	4.50	2.55	------	------	[2] 1.40	[2] 1.05	[2] 1.10	[2] 1.43	[2] 1.35	[2] 1.34	[2] 1.32	[2] .97	[2] 1.32
1925	5.27	3.50	2.75	------	[2] 2.59	[2] 2.22	[2] 2.75	[2] 3.73	[2] 3.66	------	------	------	------	------
Washington:														
1923	------	------	------	------	------	2.43	1.83	1.54	1.70	2.04	1.95	1.84	1.89	1.84
1924	6.29	4.76	2.43	1.69	1.57	1.63	1.56	1.35	1.42	1.64	1.65	1.46	1.29	1.41
1925	4.53	3.77	2.92	3.60	3.38	2.53	2.92	4.21	4.23	------	------	------	------	------

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division. Average prices as shown are based on stock of U. S. No. 1 grade; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa, in order to obtain comparability.

[1] Crop movement season extends from April of one year through May of the following year, with irregular quotations continuing through June and July.

[2] Car-lot sales. [3] Eight-day average. [4] Bulk only.

TABLE 276.—*Potatoes, "Maine" and "New York State": Average l. c. l. price per bushel to jobbers at New York, 1900–1925*

Season beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1900	0.50	0.45	0.46	0.56	0.56	0.52	0.48	0.48	0.61
1901	.76	.72	.76	.78	.76	.75	.84	.85	.75
1902		.62	.58	.60	.66	.66	.68	.64	.67
1903	.48	.60	.59	.74	.81	.94	.96	1.16	1.02
1904	.48	.51	.51	.50	.49	.46	.42	.36	.30
1905	.62	.67	.74	.68	.66	.60	.68	.80	.76
1906	.55	.58	.51	.48	.48	.57	.60	.56	.74
1907	.56	.63	.58	.64	.70	.81	.83	.84	.80
1908	.74	.69	.79	.79	.79	.81	.88	.92	.91
1909	.65	.56	.56	.56	.58	.54	.49	.40	.39
1910	.55	.55	.51	.49	.52	.49	.47	.62	.57
1911	.81	.79	.90	.95	1.12	1.14	1.28	1.38	1.25
1912	.60	.59	.64	.68	.63	.67	.62	.66	.77
1913	.74	.69	.71	.70	.80	.83	.81	.85	.85
Average 1909–1913	.67	.64	.66	.68	.73	.73	.73	.78	.77
1914	.62	.56	.54	.51	.51	.48	.47	.50	.46
1915		.78	.76	.90	1.22	1.21	1.23	1.14	1.12
1916	1.18	1.25	1.69	1.61	1.98	2.67	2.67	3.00	3.18
1917	1.20	1.62	1.37	1.39	1.66	1.47	1.14	1.11	.82
1918	1.58	1.44	1.37	1.50	1.42	1.26	1.11	1.43	1.49
1919	1.51	1.37	1.57	1.79	2.31	2.64	3.33	4.28	4.17
1920		1.25	1.38	1.27	1.16	.88	.88	.78	.66
Average 1914–1920		1.18	1.24	1.28	1.47	1.52	1.55	1.75	1.70
1921	1.37	1.16	1.25	1.23	1.43	1.35	1.25	1.12	.90
1922	.86	.78	.82	.86	.93	.96	1.21	1.25	1.10
1923	1.46	1.13	1.06	1.05	1.20	1.20	1.17	1.19	1.17
1924	.91	.72	.70	.73	.82	.94	.73	.71	.76
1925	1.28	1.76	2.28	2.42					

Division of Statistical and Historical Research. Compiled from Friday or Saturday issues, New York Producers' Price Current, average of weekly range.

In earlier years New York "State" quotations were included in the general term "State and Western."

SPINACH

TABLE 277.—*Spinach for consumption fresh, commercial crop: Acreage, production, and total value, by States, year beginning October, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1922–23	1923–24	1924–25	1922–23	1923–24	1924–25	1922–23	1923–24	1924–25
	Acres	*Acres*	*Acres*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California	1,420	2,070	1,710	1,065	1,784	855	362	571	239
Illinois	400	(1)	(1)	150	(1)	(1)	142	(1)	(1)
Maryland	1,980	2,190	2,300	842	1,183	1,150	379	592	391
Missouri	640	820	1,000	234	287	360	105	103	112
New Jersey		1,110	1,440		544	626		408	545
New York	50	(1)	(1)	11	(1)	(1)	10	(1)	(1)
North Carolina	150	200	200	58	80	78	44	58	53
South Carolina	1,200	1,500	1,000	480	384	480	475	173	566
Texas	9,440	8,700	14,100	2,549	2,740	4,639	1,274	2,192	2,876
Virginia	6,250	8,000	8,500	2,188	3,296	3,060	1,553	2,340	2,020
Total	21,530	24,590	30,250	7,577	10,298	11,248	4,344	6,437	6,802

Division of Crop and Livestock Estimates.

[1] Not reported.

TABLE 278.—*Spinach for consumption fresh, commercial crop: Yield per acre and price, year beginning October, 1919–1925*

State	Yield per acre						Price per bushel [1]					
	1919–20	1920–21	1921–22	1922–23	1923–24	1924–25	1919–20	1920–21	1921–22	1922–23	1923–24	1924–25
	Bus.	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Bus.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
California	817	893	800	750	862	500	0.49	0.66	0.51	0.34	0.32	0.28
Illinois				375	(2)	(2)				.95	(2)	(2)
Maryland	344	481	407	425	540	500	.50	.70	.42	.45	.50	.34
Missouri				365	350	360				.45	.36	.31
New Jersey					490	435					.75	.87
New York				225	(2)	(2)				.87	(2)	(2)
North Carolina				390	400	390				.75	.73	.68
South Carolina		550	450	400	256	480		1.00	1.54	.99	.45	1.18
Texas	300	253	280	270	315	329	.81	.55	.66	.50	.80	.62
Virginia	482	378	320	350	412	360	.60	.68	.86	.71	.71	.66
Average	393	341	347	352	419	372	.66	.63	.70	.57	.62	.60

Division of Crop and Livestock Estimates.

[1] Average for season. [2] Not reported.

TABLE 279.—*Spinach for canning, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*Tons*	*Tons*	*Tons*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California	8,290	8,290	9,690	48,100	41,400	29,100	979	729	512
Maryland	730	1,460	1,500	2,200	4,700	4,500	84	226	169
Total	9,020	9,750	11,190	50,300	46,100	33,600	1,063	955	681

Division of Crop and Livestock Estimates.

TABLE 280.—*Spinach for canning, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per ton						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
California	4.9	5.4	4.5	5.2	5.8	5.0	3.0	23.45	24.92	19.71	19.56	20.35	17.61	17.64
Maryland	3.6	3.6	2.8	2.5	3.0	3.2	3.0	31.25	49.44	35.00	37.60	38.38	48.12	37.50
Average	4.3	4.5	3.9	4.5	5.6	4.7	3.0	26.45	34.59	23.40	22.00	21.13	20.72	20.27

Division of Crop and Livestock Estimates.

TABLE 281.—*Spinach: Car-lot shipments by State of origin, August, 1920–July, 1925*

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
Missouri	126	57	28	84	152
Maryland	391	372	663	818	846
Virginia	2,475	2,212	3,208	3,105	2,946
South Carolina		161	422	161	501
Texas	1,463	1,455	2,433	3,038	3,235
California	149	302	473	70	241
Other States	64	132	126	341	253
Total	4,668	4,691	7,353	7,617	8,174

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from Aug. 1 of one year through July of the following year.
[2] Preliminary.

SWEET POTATOES

TABLE 282.—*Sweet potatoes: Acreage, production, and value, United States, 1909–1925*

Year	Acreage	Average yield per acre	Production	Price per bushel received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]
	1,000 acres	*Bushels*	*1,000 bushels*	*Cents*	*1,000 dollars*	*Dollars*
1909	641	90.1	57,764	68.5	39,585	61.76
1910	641	93.5	59,938	67.1	40,216	62.74
1911	605	90.1	54,538	75.5	41,202	68.10
1912	583	95.2	55,479	72.6	40,264	69.06
1913	625	94.5	59,057	72.6	42,884	68.61
Average, 1909–1913	619	92.7	57,355	71.2	40,830	65.96
1914	603	93.8	56,574	73.0	41,294	68.48
1915	731	103.5	75,639	62.1	46,980	64.27
1916	774	91.7	70,955	84.8	60,141	77.70
1917	919	91.2	83,822	110.8	92,916	101.11
1918	940	93.5	87,924	135.2	118,863	126.45
1919	941	103.2	97,126	134.4	130,514	138.70
1920	992	104.8	103,925	113.4	117,834	118.78
Average, 1914–1920	843	97.6	82,281	105.7	86,935	103.14
1921	1,066	92.5	98,654	88.1	86,894	81.51
1922	1,117	97.9	109,394	77.1	84,295	75.47
1923	993	97.9	97,177	97.9	95,091	95.74
1924	691	79.0	54,564	129.2	70,500	102.03
1925 [2]	778	80.3	62,494	136.9	85,554	109.97

Division of Crop and Livestock Estimates.

[1] Based on farm price Dec. 1.

[2] Preliminary

TABLE 283.—*Sweet potatoes: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars		State	Thousands of acres		Production, thousands of bushels		Total value, basis Dec. 1 price, thousands of dollars	
	1924	1925[1]	1924	1925[1]	1924	1925[1]		1924	1925[1]	1924	1925[1]	1924	1925[1]
N. J.	17	18	2,380	2,106	3,689	5,054	Fla.	25	29	2,100	2,465	2,730	3,451
Pa.	2	2	234	230	351	483	Ky.	12	14	960	1,260	1,229	1,928
Ohio	3	3	336	345	548	724	Tenn.	30	36	2,850	3,240	3,990	4,536
Ind.	2	2	230	216	327	410	Ala.	60	65	4,380	4,550	5,475	5,688
Ill.	8	8	864	704	1,201	1,338	Miss.	50	62	2,550	5,952	4,412	5,952
Iowa	3	3	240	327	456	752	Ark.	27	36	2,187	3,060	2,777	3,825
Mo.	6	6	600	570	750	940	La.	60	72	3,000	5,760	4,740	6,624
Kans.	3	3	339	348	458	592	Okla.	18	20	1,566	1,880	2,349	2,538
Del.	10	11	1,300	1,210	1,638	2,299							
Md.	8	10	1,120	1,290	1,422	2,193	Tex.	70	84	3,990	6,132	6,304	8,707
							N. Mex.	1	1	120	140	306	231
Va.	35	37	4,200	3,996	4,620	5,195	Ariz.	2	2	250	260	595	546
W. Va.	3	3	330	276	465	552	Calif.	6	9	678	1,107	1,478	1,882
N. C.	80	80	7,360	7,040	7,654	8,448							
S. C.	50	52	3,400	2,860	3,536	4,204	U. S.	691	778	54,564	62,494	70,500	85,554
Ga.	100	110	7,000	5,170	7,000	6,462							

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 284.—*Sweet potatoes: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*
N. J.	123	140	130	120	138	130	100	155	100	120	115	125	143	123	110	175	122	140	117	133
Pa.	88	105	121	120	110	109	105	105	100	110	120	140	138	117	124	140	130	117	115	125
Ohio	110	98	113	118	90	106	110	95	99	95	96	100	103	100	107	120	112	112	115	113
Ind.	101	104	114	116	78	103	100	104	100	106	108	105	120	106	132	125	118	115	108	120
Ill.	110	110	89	98	70	95	84	110	90	97	82	95	97	94	110	95	110	108	88	102
Iowa	110	98	105	90	80	97	100	95	91	90	93	67	104	91	104	78	70	80	109	88
Mo.	90	102	91	88	56	85	84	100	70	112	91	104	110	96	100	95	108	100	95	100
Kans.	96	101	75	99	50	84	110	110	92	92	80	109	135	104	125	104	107	113	116	113
Del.	125	115	140	120	135	127	120	135	125	112	120	138	128	125	100	156	112	130	110	122
Md.	115	110	115	125	141	121	125	130	126	118	130	140	126	128	100	153	130	140	129	130
Va.	100	100	90	90	108	98	92	110	130	104	120	140	127	118	95	135	120	120	108	116
W. Va.	100	101	110	115	91	103	92	110	140	140	106	115	119	117	115	134	130	110	92	116
N. C.	99	105	85	90	100	96	90	105	107	95	110	107	104	103	101	113	105	92	88	100
S. C.	95	91	84	105	92	93	85	105	86	95	95	90	105	94	95	92	97	68	55	81
Ga.	93	83	81	90	87	87	85	85	80	93	92	92	93	89	85	83	84	70	47	74
Fla.	105	108	108	112	110	109	120	112	100	95	110	100	95	105	85	85	98	84	85	87
Ky.	88	85	96	90	75	87	105	105	90	95	95	105	105	100	104	101	103	80	90	96
Tenn.	87	85	85	90	80	85	100	105	100	95	98	112	102	102	100	95	110	95	90	98
Ala.	80	85	97	100	95	91	93	90	74	90	96	94	97	91	90	95	104	73	70	86
Miss.	82	94	85	97	98	91	90	110	82	65	95	105	110	94	80	105	98	51	96	86
Ark.	58	98	92	88	90	85	95	130	91	110	90	100	105	103	105	80	95	81	85	89
La.	90	93	90	81	85	88	87	92	90	79	75	90	101	88	94	92	90	50	80	81
Okla.	70	70	75	92	64	74	102	115	74	90	65	110	115	96	98	76	90	87	94	89
Tex.	50	56	71	75	80	66	101	98	89	78	58	110	105	91	82	83	80	57	73	75
N. Mex.	180	100	150	141	125	139	143	160	125	118	125	120	118	130	120	112	134	120	140	125
Ariz.	163	120	200	140	135	152	200	150	160	150	135	150	125	153	125	150	170	125	130	140
Calif.	160	160	140	156	170	157	161	135	160	167	170	130	127	150	120	110	115	113	123	116
U. S.	90.1	93.5	90.1	95.2	94.5	92.7	93.8	103.5	91.7	91.2	93.5	103.2	104.8	97.4	92.5	97.9	97.9	79.0	80.3	89.5

Division of Crop and Livestock Estimates.

TABLE 285.—*Sweet potatoes: Car lot shipments by States of origin, July, 1920–June, 1925*

State	Crop movement season [1]				
	1920	1921	1922	1923	1924 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*
New Jersey [3]	2,392	2,196	2,858	1,528	1,898
Delaware	1,877	1,722	2,632	1,549	1,750
Maryland	1,363	1,286	1,750	1,123	1,155
Virginia	4,839	5,300	6,633	5,374	5,213
North Carolina	823	1,022	679	563	816
South Carolina	56	135	235	155	120
Georgia	1,036	1,400	781	610	1,018
Florida	95	110	[4] 128	59	175
Tennessee [3]	924	1,578	1,495	726	1,137
Alabama	579	591	537	382	649
Mississippi	93	181	116	61	36
Arkansas	568	584	240	263	369
Louisiana	772	893	1,033	463	558
Oklahoma	91	147	85	110	107
Texas	632	759	974	535	221
California	856	1,000	982	684	466
Other States [3]	216	479	408	345	381
Total [3]	17,206	19,383	[4] 21,566	14,530	16,069

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from July 1 of one year through June of the following year.

[2] Preliminary.

[3] Figures for certain States include shipments in July of succeeding crop year as follows: New Jersey—1920 15 cars; 1922, 4 cars; 1924, 4 cars; Arkansas—1921, 1 car; Kentucky—1921, 1 car; New Mexico—1921, 5 cars; Tennessee—1921, 17 cars; 1924, 3 cars.

[4] Florida includes 2 cars in June, 1922.

TABLE 286.—*Sweet potatoes: Estimated price per bushel, received by producers, United States, 1910–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1910	73.5	82.9	79.5	75.7	67.8	70.9	79.1	81.6	87.3	95.0	103.6	93.8	78.7
1911	104.1	107.4	97.9	85.6	76.2	79.0	86.9	93.5	102.4	117.4	118.6	111.4	92.2
1912	113.0	102.5	88.9	79.9	73.7	77.2	83.7	87.0	90.8	94.3	93.2	90.8	85.6
1913	89.4	98.8	89.8	78.0	73.4	75.8	82.5	86.1	87.3	91.9	92.7	92.5	84.0
Av. 1910–1913	95.0	97.9	89.0	79.8	72.8	75.7	83.0	87.0	92.0	99.6	102.0	97.1	85.1
1914	94.5	98.4	90.1	79.3	72.3	74.9	81.0	85.0	90.8	100.8	98.1	97.6	84.6
1915	93.1	97.2	80.0	69.7	62.9	65.0	72.7	76.4	80.1	81.0	78.9	83.9	75.4
1916	87.5	99.0	88.1	80.3	80.3	86.4	92.9	100.0	115.5	126.0	132.6	135.8	92.9
1917	124.4	126.3	120.3	110.5	105.6	110.8	123.1	129.8	149.2	158.1	158.2	134.0	122.3
1918	142.1	151.6	164.3	152.4	137.4	131.8	137.8	149.2	157.2	176.2	174.4	162.7	150.0
1919	159.7	195.4	174.6	150.9	135.1	135.6	151.1	163.6	179.2	193.9	199.7	205.2	161.7
1920	200.7	210.8	190.0	138.7	116.5	112.3	126.3	122.1	125.5	135.7	136.8	141.9	144.8
Av. 1914–1920	128.9	139.8	129.6	111.7	101.4	102.4	112.1	118.0	128.2	138.8	139.8	137.3	118.8
1921	151.2	154.2	118.2	104.0	91.5	95.3	102.3	106.9	114.3	116.0	117.1	120.7	110.9
1922	125.3	127.5	106.0	90.4	79.0	84.8	92.5	96.9	100.1	103.8	107.9	107.4	97.4
1923	112.1	151.3	133.6	114.8	101.0	103.8	112.5	123.7	129.0	140.4	139.2	138.9	121.7
1924	130.7	151.4	157.0	145.1	130.3	140.1	145.5	160.2	180.8	196.2	189.1	170.2	152.4
1925	188.7	196.3	177.4	169.4	144.4	141.5							

Division of Crop and Livestock Estimates.

TABLE 287.—*Sweet potatoes: Estimated price per bushel, received by producers, December 1, average 1909–1913, annual, 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
New Jersey	80	95	70	120	160	190	220	155	144	170	72	145	155	240	156
Pennsylvania	87	86	75	135	140	185	180	155	137	180	111	140	150	210	158
Ohio	93	96	98	150	175	175	215	175	155	178	135	150	163	210	167
Indiana	91	90	90	150	165	195	215	160	152	150	120	125	142	190	145
Illinois	97	95	82	125	150	175	175	135	134	90	105	110	139	190	127
Iowa	113	127	108	192	210	210	250	247	192	175	140	150	190	230	177
Missouri	95	96	82	150	141	186	187	155	142	100	105	108	125	165	121
Kansas	111	106	100	150	160	222	185	160	155	115	105	125	135	170	130
Delaware	63	70	62	81	120	125	110	100	95	110	50	115	126	190	118
Maryland	65	70	70	88	100	150	133	115	104	140	50	115	127	170	120
Virginia	70	76	65	90	110	145	155	95	105	125	87	105	110	130	111
West Virginia	93	98	92	126	140	204	210	150	146	180	140	148	141	200	162
North Carolina	60	65	56	75	105	132	138	114	98	97	80	98	104	120	100
South Carolina	68	70	65	85	104	142	148	117	104	90	71	86	104	147	100
Georgia	67	69	61	81	105	125	110	97	93	63	61	76	100	125	85
Florida	75	80	68	86	115	125	140	120	105	96	94	116	130	140	115
Kentucky	83	77	70	100	125	175	160	150	122	115	110	120	128	153	125
Tennessee	73	69	59	87	105	136	117	123	99	95	78	100	140	140	111
Alabama	68	65	57	74	92	115	113	100	88	73	75	83	125	125	96
Mississippi	63	63	55	67	97	104	112	105	86	74	69	91	173	100	101
Arkansas	83	77	61	90	96	138	115	105	97	82	89	92	127	125	103
Louisiana	64	64	50	66	104	128	115	93	89	65	61	95	158	115	99
Oklahoma	112	89	73	135	160	220	180	132	141	106	118	113	150	135	124
Texas	102	87	70	90	140	175	150	130	120	85	85	114	158	142	117
New Mexico	123	113	120	180	205	250	225	220	188	260	200	200	255	165	216
Arizona	152	150	150	185	227	238	250	230	204	182	175	210	238	210	203
California	98	87	80	100	150	150	179	160	129	125	67	165	218	170	149
United States	71.7	73.0	62.1	84.8	110.8	135.2	134.4	113.4	102.0	88.1	77.1	97.9	129.2	136.9	105.8

Division of Crop and Livestock Estimates.

TABLE 288.—*Sweet potatoes: Average l. c. l. price per bushel to jobbers at nine markets, 1920–1925*

Market. Season beginning August	August [1]		September [1]		October average	November average	December average	January average	February average	March average	April [2]		May [2]	
	Range	Average	Range	Average							Range	Average	Range	Average
New York:	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1920	2.31–3.08	2.70	1.04–2.77	1.76	1.36	1.23	1.56	1.76	1.82	2.40	1.50–2.75	2.32	2.00–3.00	2.73
1921	1.23–2.00	1.51	.88–2.25	1.48	1.26	1.36	1.67	2.02	1.93	1.92	1.50–2.50	2.27	1.25–2.50	2.23
1922			.50–1.75	1.00	.70	.73	.96	1.03	1.01	.94	.75–2.00	1.39		
1923			.46–1.75	1.16	1.20	1.95	2.51	2.94	3.38	3.62	3.40–4.50	3.98		
1924			1.08–3.25	1.98	1.47	1.88	2.47	2.75	2.74	2.63				
1925	1.08–2.00	1.53	.92–2.50	1.70	1.68	1.70	2.23							
Chicago:														
1920	2.00–3.00	2.61	1.35–2.85	2.05	1.85	1.96	2.21	2.20	2.29	2.35	1.75–3.25	2.40	1.75–2.50	2.13
1921	1.14–2.75	2.01	.80–2.50	1.70	1.57	1.48	1.65	1.81	1.89	1.93	1.00–2.50	1.69	.75–2.40	1.29
1922			.69–2.75	1.44	1.00	1.22	1.26	1.43	1.44	1.47	1.00–2.50	1.62		
1923			1.08–2.35	1.67	1.52	2.03	2.73	3.09	3.31	3.76	3.50–4.50	4.04		
1924			1.38–4.00	2.29	1.88	2.33	2.80	2.92	3.26	2.94				
1925	1.25–3.50	2.04	1.00–3.00	2.04	2.02	2.25	2.42							
Philadelphia:														
1920	1.23–2.77	2.27	.85–2.31	1.40	.99	.84	1.35	1.53	1.55	1.74	1.25–2.00	1.66	.80–1.90	1.63
1921	1.15–1.50	1.33	.92–1.36	1.14	1.02	1.03	1.43	1.51	1.65	1.72	1.00–1.80	1.42		
1922			.46–1.00	.68	.57	.41	.68	.65	.58	.61	.60–1.00	.76		
1923			.54–1.08	.80	.84	1.18	1.98	2.48	2.49	3.65				
1924			1.08–1.62	1.29	.89	1.24	1.88	2.30	2.18	1.99				
1925	.85–1.50	1.26	.92–1.69	1.32	1.32	1.25	1.83							
Pittsburgh:														
1920	2.31	2.31	1.31–3.00	1.95	1.49	1.38	1.95	1.91	1.73	2.03	1.40–2.15	1.89	1.50–2.15	1.92
1921	.75–2.50	1.55	1.14–2.25	1.62	1.49	1.50	1.69	1.88	1.94	1.82	1.25–2.00	1.71	.75–2.00	1.32
1922			.62–2.25	1.14	.90	.87	.98	1.15	1.10	.81	.75–1.50	1.03		
1923			.92–2.15	1.45	1.43	1.94	2.47	2.55	2.75	3.15	2.75–3.75	3.31		
1924			1.08–3.35	1.97	1.60	1.99	2.49	2.71	2.78	2.63				
1925	1.15–2.75	1.65	1.08–2.75	1.79	1.88	2.04	2.17							
St Louis:														
1920	1.75–2.75	2.25	.86–2.30	1.66	1.16	1.61	1.40	1.68	1.85	1.78	1.50–2.10	1.81	1.80–1.90	1.84
1921	1.00–1.40	1.23	.50–1.38	1.09	.94		1.11	1.20	1.10	1.18	.70–1.90	1.04		
1922			.65–1.00	.87	.84	.92	.98	1.03	.97	.96	.90–1.50	1.12		
1923						1.49	1.97	2.23	2.29	3.00	2.25–4.00	3.25		
1924			2.00–2.35	2.17		2.03	2.16	2.54	2.56	2.61				
1925	1.15–1.90	1.56	1.00–2.00	1.43	1.38	1.57	1.90							
Cincinnati:														
1920	1.77–2.35	1.98	1.00–2.19	1.63	1.31	1.15	1.54	1.71	1.95	1.78	1.31–3.00	1.80	1.35–2.10	1.89
1921	.90–1.54	1.19	.90–1.40	1.21	1.11	.98	1.27	1.21	1.16	1.15	.75–1.15	1.03	.40–1.15	.80
1922			.69–1.15	.84	.66	.65	.88	1.05	1.02	.96	.90–1.35	1.12		
1923			1.08–1.15	1.12	1.09	1.48	2.06	2.19	2.40	3.11	2.25–3.25	2.85		
1924			1.54–2.15	1.85	1.46	1.60	2.15	2.42	2.71	2.68				
1925	1.00–1.75	1.45	1.00–1.65	1.44	1.47	1.68	1.63							

Minneapolis:													
1920	3.08–3.25	3.19	1.88–3.75	2.80	2.03	1.99	2.09	2.25	2.28	2.41	2.25	2.25	
1921	2.15–3.25	2.47	1.62–2.75	2.24	1.89	1.85	2.07	2.19	1.85	2.08	1.25–2.75	1.76	.25–2.00 .95
1922			1.00–2.65	1.76	1.21	1.40	1.81	1.87	1.60	1.50	1.25–2.15	1.63	
1923			1.38–2.50	1.92	1.65	2.09	2.96	2.91	2.98	3.42	3.50	3.50	
1924			1.85–3.25	2.60	1.85	2.36	2.95	3.09		2.86			
1925													
Kansas City:													
1920	2.00–2.25	2.15				1.62	1.48	1.59	1.64	1.66	1.75–2.25	1.92	1.85–2.25 2.01
1921	1.50–1.65	1.56	1.00–1.50	1.25	1.01	1.10	1.21	1.30	1.22	1.19	.85–1.25	1.09	.85–1.00 .92
1922			.75–1.00	.89	.78	.62	1.04	1.12	1.12	1.13	.90–1.75	1.19	
1923							1.54	1.89	1.98	2.44	2.75–3.50	3.14	
1924						1.99	2.12	2.21					
1925	1.75–2.00	1.79	1.25–1.75	1.53		1.42	1.50						
Washington:													
1923			.77–1.38	1.06	.95	1.19	1.87	2.14	2.28	2.24	1.85–2.77	2.31	
1924			1.23–2.00	1.71	1.24	1.33	1.69	2.18	1.99	2.10			
1925	1.23–1.54	1.36	.92–2.00	1.40	1.33	1.40	1.55						

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division.

Average prices as shown are based on stock of good merchantable quality and condition; they are simple averages of daily range of selling prices. In some cases conversions have been made from larger to smaller units or vice versa, in order to obtain comparability.

[1] Quotations began Aug. 23, 1920 and 1921; Sept. 1, 1922; Sept. 18, 1923; Sept. 2, 1924; Aug. 25, 1925.

[2] Last reported quotations of season May 26, 1921 and 1922; May 4, 1923; April 15, 1924; April 3, 1925.

TOMATOES

TABLE 289.—*Tomatoes for consumption fresh, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
Early:				*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
California (Imperial County)	*Acres* 1,200	*Acres* 600	*Acres* 860	226	90	64	981	391	269
Florida	36,480	50,070	33,470	4,159	3,956	2,811	13,558	10,642	9,276
Georgia	460	2,000	530	37	66	38	57	107	107
Mississippi	11,190	15,300	10,800	940	1,683	1,274	1,861	3,181	4,153
South Carolina	1,600	2,000	2,650	163	182	217	235	264	501
Texas	6,600	9,460	10,780	574	870	884	1,401	1,984	2,316
Intermediate:									
Illinois (Union County)	480	1,750	2,000	60	228	168	173	591	375
New Jersey	10,730	11,000	12,000	1,953	2,552	3,000	3,476	4,900	2,550
Ohio (Washington County)	560	800	980	57	170	227	142	388	781
Tennessee	1,880	2,690	4,000	233	336	508	582	753	1,539
Late:									
California (except Imperial County)	11,900	11,140	11,020	3,403	1,437	2,358	8,882	3,090	4,575
Colorado	970	350	530	208	80	161	366	139	187
Delaware	3,090	2,000	2,110	550	264	399	962	348	239
Illinois (except Union County)	3,390	4,000	2,910	485	856	707	1,339	1,738	1,237
Indiana	3,470	6,560	8,000	618	866	1,512	742	1,134	2,434
Iowa	400	620	410	86	75	59	96	75	53
Kentucky	3,740	4,130	3,510	535	735	502	802	1,058	838
Maryland	4,910	7,620	2,740	702	952	488	1,523	1,219	376
Michigan	1,170	580	1,110	167	124	238	219	186	200
Missouri	2,250	6,750	5,470	241	648	684	402	1,464	903
New York	3,640	2,920	2,310	648	835	578	752	835	566
Ohio (except Washington County)	3,460	6,000	4,330	644	1,242	1,082	1,307	1,615	1,396
Pennsylvania	1,680	1,350	2,420	240	251	518	480	359	471
Utah			2,000			800			872
Virginia	3,130	1,390	3,080	448	259	385	748	368	716
Total	118,380	151,080	130,020	17,377	18,757	19,662	41,086	36,829	36,930

Division of Crop and Livestock Estimates.

TABLE 290.—*Tomatoes for manufacture, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
	Acres	*Acres*	*Acres*	*Tons*	*Tons*	*Tons*	*1,000 dolls.*	*1,000 dolls.*	*1,000 dolls.*
Arkansas	6,100	13,400	18,400	14,600	53,600	55,200	159	670	753
California	28,300	26,000	29,000	175,500	148,200	174,000	2,554	2,496	2,834
Colorado	2,600	2,000	3,000	13,000	14,400	25,500	117	148	293
Delaware	17,800	18,000	19,000	97,900	54,000	100,700	1,442	988	1,638
Illinois	5,000	6,000	6,800	15,000	25,200	25,800	176	346	318
Indiana	54,000	59,000	72,000	156,600	200,600	324,000	1,615	2,489	4,144
Iowa	3,200	3,500	3,700	17,300	9,800	13,700	212	125	199
Kentucky	3,500	6,200	8,200	7,000	24,800	32,800	81	334	441
Maryland	43,000	43,200	43,000	236,500	142,600	215,000	3,604	2,781	3,434
Michigan	2,200	2,300	2,600	7,700	13,100	17,700	73	135	211
Missouri	21,000	27,000	31,000	50,400	67,500	108,500	571	881	1,467
New Jersey	21,600	22,800	28,000	99,400	79,800	168,000	1,544	1,625	2,695
New York	12,900	11,700	13,100	51,600	74,900	89,100	777	1,204	1,453
Ohio	10,000	9,000	13,000	46,000	48,600	78,000	540	562	1,021
Pennsylvania	3,300	2,500	4,500	15,800	11,500	24,300	201	172	389
Tennessee	6,300	8,500	12,000	13,900	26,400	24,000	180	369	369
Utah	4,600	4,800	7,000	40,500	30,700	126,000	405	307	1,509
Virginia	12,000	12,500	12,300	50,400	45,000	43,000	723	730	696
Other States	3,500	3,600	4,000	13,300	10,800	20,000	178	162	305
Total	260,900	282,000	330,600	1,122,400	1,081,500	1,665,300	15,152	16,524	24,169

Division of Crop and Livestock Estimates.

TABLE 291.—*Tomatoes for consumption fresh, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per bushel [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early:														
California (Imperial County)	*Bus.* 145	*Bus.* 180	*Bus.* 150	*Bus.* 103	*Bus.* 188	*Bus.* 150	*Bus.* 75	*Dols.* 3.15	*Dols.* 3.05	*Dols.* 3.00	*Dols.* 3.20	*Dols.* 4.34	*Dols.* 4.34	*Dols.* 4.20
Florida	115	103	144	116	114	79	84	1.88	1.92	2.26	2.52	3.26	2.69	3.30
Georgia	100	83	117	75	80	33	71	1.89	1.48	1.86	2.37	1.53	1.62	2.81
Mississippi	103	87	112	132	84	110	118	1.27	1.52	1.27	1.12	1.98	1.89	3.26
South Carolina	100	83	104	53	102	91	82	2.02	1.70	2.04	1.51	1.44	1.45	2.31
Texas	137	83	85	78	87	92	82	1.37	1.36	1.58	1.98	2.44	2.28	2.62
Intermediate:														
Illinois (Union County)	120	131	117	130	125	130	84	1.65	1.80	1.86	1.59	2.88	2.59	2.23
New Jersey	107	178	178	189	182	232	250	1.34	1.39	1.27	1.89	1.78	1.92	.86
Ohio (Washington County)	169	182	158	180	102	212	232	1.52	2.00	1.98	2.62	2.50	2.28	3.44
Tennessee (Gibson County)	110	106	89	131	124	125	127	2.21	2.14	1.98	2.60	2.50	2.24	3.03
Late:														
Calif. (except Imperial County)	250	214	196	268	286	129	214	1.55	2.01	2.60	3.19	2.61	2.15	1.94
Colorado	321	250	250	303	214	228	303	1.29	1.60	1.65	1.29	1.76	1.74	1.16
Delaware	71	161	161	107	178	132	189	1.12	1.60	1.35	1.78	1.75	1.32	.60
Illinois (except Union County)	129	178	125	178	143	214	243	1.50	1.69	1.34	1.88	2.76	2.03	1.75
Indiana	150	161	178	196	178	132	189	1.30	1.41	1.19	1.39	1.20	1.31	1.61
Iowa	161	178	125	178	214	121	143	1.50	1.58	1.38	1.29	1.12	1.00	.90
Kentucky	161	150	125	143	143	178	143	1.51	1.42	1.69	1.96	1.50	1.44	1.67
Maryland	71	125	125	125	143	125	178	.96	1.10	1.32	2.62	2.17	1.28	.77
Michigan	143	196	200	178	143	214	214	1.20	1.31	1.02	1.21	1.31	1.50	.84
Missouri	89	125	107	125	107	96	125	1.37	1.60	1.74	1.50	1.67	2.26	1.32
New York	268	303	286	286	178	286	250	1.39	1.96	1.44	1.74	1.16	1.00	.98
Ohio (except Washington County)	196	214	196	214	186	207	250	1.25	1.45	1.55	1.60	2.03	1.30	1.29
Pennsylvania	129	178	178	214	143	186	214	1.41	1.69	1.09	1.76	2.00	1.43	.91
Utah							400							1.09
Virginia	107	125	107	96	143	186	125	1.83	1.94	1.65	1.69	1.67	1.42	1.86
Average	136	154	146	148	147	124	151	1.51	1.67	1.76	2.06	2.36	1.96	1.88

Division of Crop and Livestock Estimates.

[1] Average for season.

TABLE 292.—*Tomatoes for manufacture, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per ton						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Arkansas	2.8	3.3	3.3	4.0	2.4	4.9	3.0	14.57	16.80	16.96	10.75	10.92	12.50	13.66
California	7.0	5.5	5.4	6.8	6.2	5.7	6.0	16.35	20.00	12.58	15.12	14.55	16.84	16.29
Colorado	9.1	6.3	6.0	8.2	5.0	7.2	8.5	12.90	15.00	9.00	8.67	9.00	10.25	11.50
Delaware	1.6	4.5	5.0	4.0	5.5	3.0	5.3	24.08	21.98	18.63	14.23	14.73	18.30	16.27
Illinois	3.6	3.3	3.5	4.2	3.0	4.2	3.8	17.03	16.25	12.55	12.15	11.75	13.72	12.33
Indiana	4.5	4.5	5.0	5.8	2.9	3.4	4.5	15.38	16.01	9.68	10.48	10.31	12.11	12.79
Iowa	4.8	5.6	3.3	6.9	5.4	2.8	3.7	14.50	17.00	12.00	13.38	12.23	12.80	14.55
Kentucky	5.5	4.1	3.3	3.8	2.0	4.0	4.0	15.59	13.26	10.00	11.00	11.52	13.48	13.46
Maryland	1.5	3.5	4.2	3.6	5.5	3.3	5.0	25.90	21.98	12.15	14.66	15.24	19.50	15.97
Michigan	4.1	4.5	5.6	4.6	3.5	5.7	6.8	16.00	15.00	13.57	10.50	9.50	10.29	11.91
Missouri	2.0	3.5	2.9	3.1	2.4	2.5	3.5	15.30	16.59	11.92	11.00	11.33	13.05	13.52
New Jersey	3.0	4.9	5.0	5.2	4.6	3.5	6.0	24.78	25.37	11.26	14.70	15.53	20.36	16.04
New York	6.5	8.0	8.2	7.9	4.0	6.4	6.8	18.64	21.32	13.65	13.72	15.05	16.08	16.31
Ohio	6.0	6.0	5.5	5.2	4.6	5.4	6.0	16.51	15.83	11.00	11.00	11.73	11.57	13.09
Pennsylvania	3.6	6.9	4.8	5.4	4.8	4.6	5.4	20.86	23.20	11.83	11.20	12.74	14.98	16.00
Tennessee	3.3	3.2	3.0	3.5	2.2	3.1	2.0	19.12	20.05	11.33	14.18	12.92	13.99	15.39
Utah	9.5	9.6	12.3	10.0	8.8	6.4	18.0	13.71	15.00	8.00	8.63	10.00	10.00	11.98
Virginia	2.7	3.5	3.0	4.5	4.2	3.6	3.5	22.38	25.12	14.92	13.66	14.35	16.22	16.19
Other States	4.1	4.0	4.1	4.2	3.8	3.0	5.0	18.68	16.87	15.50	12.66	13.40	15.00	15.24
Average	3.8	4.7	4.9	5.1	4.3	3.8	5.0	18.14	19.71	11.46	12.59	13.50	15.28	14.51

Division of Crop and Livestock Estimates.

TABLE 293.—*Tomatoes: Car-lot shipments by State of origin, 1920–1925*

State	1920	1921	1922	1923	1924	1925 [1]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New York	1,945	1,073	1,902	1,261	954	1,020
New Jersey	2,798	2,121	1,930	1,648	2,150	1,903
Ohio	450	411	558	956	1,035	1,277
Indiana	1,265	552	1,332	1,185	1,479	1,858
Illinois	450	155	229	250	230	536
Delaware	185	207	413	327	26	32
Maryland	194	110	242	271	66	313
South Carolina		59	145	431	421	568
Florida	4,144	5,795	10,261	9,791	9,128	7,134
Kentucky	468	341	153	121	546	504
Tennessee	805	370	920	501	985	1,397
Mississippi	1,393	1,945	3,441	2,144	3,776	3,149
Texas	1,395	2,025	1,886	1,091	1,694	2,386
Utah	261	100	378	369	380	1,419
California	2,008	1,819	2,346	3,296	2,788	2,871
Other States	591	342	587	363	1,159	1,531
Total	18,352	17,425	26,723	24,005	26,817	27,898

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Preliminary.

TABLE 294.—*Tomatoes: Monthly range and average l. c. l. price, per 4-basket carrier, to jobbers at nine markets, 1919–1925*

Market and season [1]	June		July	
	Range	Average	Range	Average
Chicago:	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1919	.75–2.50	1.53	.75–2.25	1.56
1920	1.25–4.00	2.51	.75–2.00	1.43
1921	.75–2.15	1.56	.50–1.75	1.05
1922	.40–2.75	1.19		
1923	1.00–3.50	2.08	.75–1.60	1.21
1924	.50–1.25	.91	1.00–2.15	1.64
1925	.75–2.25	1.51	1.25–1.75	1.65
Cincinnati:				
1919	1.25–2.00	1.56	1.25–2.00	1.79
1920	1.75–2.50	2.02	.90–1.90	1.44
1921	1.15–1.75	1.54	.70–1.25	1.10
1922	.40–1.50	.92		
1923	1.50–2.15	1.82	1.15–2.00	1.66
1924	.50–1.50	.93	1.10–1.90	1.49
1925	1.00–2.00	1.58	1.50–1.75	1.69
Kansas City:				
1919	1.00–2.50	1.63	1.25–1.50	1.32
1920	1.60–3.00	2.11	1.00–2.25	1.44
1921	.65–3.00	1.68	.50–.80	.67
1922	.60–3.50	1.52		
1923	1.50–4.00	2.35	1.50	1.50
1924	1.00–2.00	1.50	1.00–1.85	1.38
1925	1.25–2.00	1.54	2.50–3.50	3.00
Minneapolis:				
1921	1.75–2.25	1.93	1.75	1.75
1922	.85–2.00	1.32		
1923	1.90–2.75	2.26	2.00	2.00
1924	.85–1.50	1.08	.85–2.10	1.27
1925	1.10–2.75	1.79	1.35–2.00	1.73
New York:				
1920	1.50–3.00	2.07	1.00–2.50	1.84
1921	1.25–2.50	1.67	.90–1.50	1.24
New York—Continued				
1922	.40–2.65	1.25		
1923	2.00–3.00	2.35	1.00–2.00	1.50
1924	.60–1.35	1.03	1.25–2.15	1.55
1925	1.10–2.00	1.53	1.25–1.90	1.63
Philadelphia:				
1919	1.10–2.10	1.54		
1920	1.25–2.75	1.81	1.35–2.25	1.76
1921	1.00–2.25	1.58		
1922	.35–2.25	1.08		
1923	1.75–2.75	2.14	.65–1.50	.98
1924	.50–1.50	.94	1.25–1.90	1.58
1925	1.25–2.00	1.58	1.25–2.00	1.50
Pittsburgh:				
1919	1.00–2.60	1.61	1.00–2.25	1.68
1920	1.25–3.50	2.15	1.00–2.00	1.52
1921	1.00–2.75	1.66	.90–1.50	1.22
1922	.50–2.15	1.18		
1923	1.40–3.00	2.16	1.40–2.00	1.76
1924	.65–1.65	.97	.90–2.25	1.63
1925	1.15–2.00	1.58	1.40–1.75	1.60
St. Louis:				
1919	1.10–2.50	1.59	1.25–1.75	1.46
1920	1.35–3.00	2.18	.50–1.60	1.20
1921	.90–2.50	1.68	.50–.90	.71
1922	.50–2.75	1.26		
1923	1.75–2.75	2.31	1.35–1.50	1.41
1924	.50–2.10	1.19	.90–1.85	1.41
1925	1.00–1.85	1.49	1.85–2.50	2.14
Washington:				
1924	.75–1.40	1.03	1.10–2.25	1.63
1925	1.40–2.15	1.76	1.50–1.85	1.66

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division. Average prices as shown are based on stock of good merchantable quality and condition, fancy count; they are simple averages of daily range of selling prices.

[1] Quotations usually begin about June 1. Last reported quotations of season July 21, 1919; July 26, 1920; July 16, 1921; June 30, 1922; July 5, 1923; July 9, 1924; July 8, 1925.

TABLE 295.—*Tomatoes: Estimated price per bushel, received by producers, United States, 1913–1925*

Month	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
July	161.4	167.4	141.4	161.5	194.3	219.1	240.3	324.4	319.6	270.0	310.7	196.7	292.2
August	95.8	92.5	66.4	88.4	124.3	133.1	177.0	168.4	142.4	102.0	165.2	134.7	176.7
September	68.0	63.0	56.9	75.6	109.5	103.0	137.2	104.4	103.6	------	106.6	111.6	115.8
October	73.0	60.3	67.9	82.1	117.6	108.6	117.7	98.9	113.5	79.6	122.8	122.5	111.1

Division of Crop and Livestock Estimates.

TABLE 296.—*Tomatoes: Monthly range and average l. c. l. price, per 6-basket carrier, to jobbers at six markets, 1925*

Market and season [1]	March		April		May		June		July	
	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average
	Dolls.	*Dolls*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
Cincinnati	4.00–5.25	4.60	4.25–6.00	5.16	3.25–5.00	4.18	2.75–4.25	3.49	----------	------
New York	3.50–8.00	6.09	4.50–7.50	5.52	3.00–5.50	4.34	2.25–6.00	3.97	3.00–4.50	3.85
Philadelphia	3.50–7.00	5.43	3.50–7.50	5.45	2.75–5.50	4.22	2.00–5.00	3.91	----------	------
Pittsburgh	3.50–7.00	5.82	5.00–6.50	5.76	2.50–5.25	4.18	----------	------	----------	------
St. Louis	5.00–6.00	5.28	----------	------	3.25–5.00	4.04	----------	------	----------	------
Washington	5.00–6.00	5.32	4.00–6.50	5.79	3.50–5.50	4.46	----------	------	3.50–4.50	3.94

Division of Statistical and Historical Research. Compiled from Daily Market Report of Fruit and Vegetable Division. Average prices as shown are based on stock of good merchantable quality and condition, fancy count; they are simple averages of daily range of selling prices.

[1] Quotations began December 18, 1924, but only occasional quotations were received until March, 1925. Last reported quotation of season July 8, 1925.

TABLE 297.—*Tomatoes, canned: Production in the United States, 1917–1925*

(Thousand cases [1], i. e., 000 omitted)

State	1917	1918	1919	1920	1921	1922	1923	1924	1925
New York	553	396	437	515	214	340	266	325	389
New Jersey	380	667	60	517	116	337	412	186	418
Pennsylvania	[2] 488	[2] 441	[2] 384	[2] 680	[2] 186	[2] 644	258	150	338
Ohio	107	357	172	142	71	179	174	133	179
Indiana	398	968	876	778	530	1,312	717	1,050	1,955
Missouri	704	353	439	715	136	775	839	871	1,836
Delaware	1,381	879	189	553	176	590	1,216	803	1,272
Maryland	5,934	6,649	2,529	3,347	1,656	3,205	5,722	3,825	6,175
Virginia [3]	1,170	1,547	953	1,162	217	891	963	1,116	1,138
Kentucky [2]	----------	----------	----------	----------	----------	----------	59	136	275
Tennessee [2]	----------	----------	----------	----------	----------	----------	176	386	382
Arkansas [4]	----------	----------	----------	----------	----------	----------	270	768	1,168
Colorado [5]	213	306	290	218	62	168	182	180	309
Utah	513	953	594	444	132	664	584	417	1,353
California	2,603	1,790	3,052	1,773	339	1,701	2,397	1,767	1,839
Other States	632	576	835	524	182	732	437	406	744
United States	15,076	15,882	10,810	11,368	4,017	11,538	14,672	12,519	19,770

Division of Statistical and Historical Reserach. Compiled from National Canners' Association data.

[1] Stated in cases of 24 No. 3 cans.
[2] Previous to 1923, Pennsylvania, Kentucky, and Tennessee composed one group.
[3] Includes West Virginia.
[4] Previous to 1923, included in "other States."
[5] Includes Washington.

WATERMELONS

TABLE 298.—*Watermelons, commercial crop: Acreage, production, and total value, by States, 1923–1925*

State	Acreage			Production			Total value, basis, average price for season		
	1923	1924	1925	1923	1924	1925	1923	1924	1925
Early:	*Acres*	*Acres*	*Acres*	*Cars* [1]	*Cars* [1]	*Cars* [1]	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Alabama	7,130	8,500	7,650	1,697	2,465	1,997	180	301	339
Arizona	900	1,120	1,100	288	168	352	50	37	88
California (Imperial)	3,400	3,800	4,000	2,040	2,280	2,660	979	561	612
Florida	30,880	28,280	20,910	5,404	6,929	7,841	1,762	2,259	2,964
Georgia	42,410	45,890	42,900	7,973	16,750	14,843	1,818	2,094	3,518
Mississippi	750	800	810	202	212	304	40	40	68
North Carolina	4,730	4,850	3,020	1,745	728	960	379	104	198
South Carolina	11,200	11,680	9,710	4,200	5,198	4,117	886	431	889
Texas	24,920	30,800	32,020	9,195	6,930	5,636	2,161	1,040	1,330
Late:									
Arkansas	780	950	1,260	226	380	315	51	70	67
California (central)	5,080	5,070	5,530	2,032	2,429	2,212	534	459	221
Colorado	400	300	300	140	90	97	23	12	18
Delaware	920	1,180	1,200	350	330	440	64	54	73
Idaho	170	[2]	[2]	61	[2]	[2]	14	[2]	[2]
Illinois	1,870	1,630	1,750	720	408	508	168	58	94
Indiana	3,050	2,600	1,900	854	780	665	235	225	128
Iowa	2,200	2,670	1,880	660	734	658	116	174	127
Maryland	1,850	2,160	2,100	703	540	756	163	78	97
Missouri	6,420	6,560	9,020	1,926	1,640	3,247	466	331	390
New Jersey	1,160	1,650	1,400	454	652	700	170	141	150
Oklahoma	3,850	3,800	4,000	962	950	1,260	192	180	229
Virginia	2,480	3,040	3,100	662	608	976	149	111	159
Washington	800	820	840	240	287	294	45	43	43
Total	157,350	168,150	156,400	42,734	51,488	50,838	10,645	8,803	11,802

Division of Crop and Livestock Estimates.

[1] Cars of 1,000 melons. [2] Not reported.

TABLE 299.—*Watermelons, commercial crop: Yield per acre and price, 1919–1925*

State	Yield per acre							Price per car [1]						
	1919	1920	1921	1922	1923	1924	1925	1919	1920	1921	1922	1923	1924	1925
Early:	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Alabama	292	283	328	310	238	290	261	114	123	156	108	106	122	170
Arizona	405	405	360	340	320	150	320	150	150	155	150	175	223	250
California (Imperial)	850	960	640	540	600	600	665	275	300	215	180	480	246	230
Florida	315	374	360	380	175	245	375	215	239	241	146	326	326	378
Georgia	328	373	499	310	188	365	346	129	141	221	166	228	125	237
Mississippi	310	330	375	335	270	265	375	175	170	150	165	200	187	223
North Carolina	324	400	364	320	369	150	318	131	145	177	160	217	143	206
South Carolina	468	565	500	300	375	445	424	108	119	107	173	211	83	216
Texas	270	364	273	335	369	225	176	211	240	168	126	235	150	236
Late:														
Arkansas	279	350	330	310	290	400	250	201	187	125	181	225	185	214
California (Central)	480	500	410	420	400	479	400	250	250	233	184	263	189	100
Colorado	375	315	375	350	350	300	323	175	150	200	180	167	138	188
Delaware	480	431	416	250	380	280	367	200	200	157	176	184	164	165
Idaho	370	325	370	300	360	[2]	[2]	238	250	115	150	225	[2]	[2]
Illinois	274	349	375	325	385	250	290	155	139	138	120	233	142	186
Indiana	320	340	365	350	280	300	350	196	184	148	141	275	288	193
Iowa	382	360	392	350	300	275	350	125	112	190	146	176	237	193
Maryland	350	378	400	350	380	250	360	174	111	150	130	232	144	128
Missouri	382	407	385	310	300	250	360	146	160	190	171	242	202	120
New Jersey	450	430	400	425	391	395	500	250	150	200	175	375	216	215
Oklahoma	338	382	330	350	250	250	315	160	275	100	175	200	190	182
Virginia	364	366	375	350	267	200	315	233	218	150	170	225	182	163
Washington	425	400	350	400	300	350	350	75	138	125	171	188	151	146
Average	344	391	397	337	272	306	325	169	185	191	155	249	171	232

Division of Crop and Livestock Estimates.

[1] Average for season. [2] Not reported.

TABLE 300.—*Watermelons: Car-lot shipments by State of origin, April, 1920—December, 1925*

State	Crop movement season [1]					
	1920	1921	1922	1923	1924	1925 [2]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Indiana	741	721	542	484	378	638
Illinois	278	477	289	433	188	334
Iowa	337	884	684	586	50	263
Missouri	2,789	3,157	2,752	1,783	1,432	3,333
Delaware	188	498	289	245	259	348
Maryland	463	741	379	566	427	531
Virginia	318	371	156	166	99	359
North Carolina	817	1,657	993	1,542	664	895
South Carolina	4,823	4,490	4,677	4,009	4,972	4,162
Georgia	9,980	15,041	13,418	7,222	16,347	14,758
Florida	5,175	5,963	11,341	4,317	[3] 6,355	7,070
Alabama	1,332	1,475	1,941	1,256	2,278	1,808
Arkansas	300	605	325	190	352	348
Oklahoma	567	559	308	66	205	147
Texas	5,195	4,347	4,203	5,317	6,513	3,035
Washington	212	154	252	175	215	258
California	3,390	3,773	4,302	4,054	4,305	4,519
Other States	409	836	774	618	706	811
Total	37,314	45,749	47,625	33,029	[3] 45,745	43,617

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Crop movement season extends from Apr. 1 through December of a given year.
[2] Preliminary.
[3] Includes 2 cars in January.

TRUCK CROPS

TABLE 301.—*Truck crops, commercial crop: Acreage and production, United States, 1919–1925*

ACREAGE

Crop	Number of States producing	1919	1920	1921	1922	1923	1924	1925
		Acres	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Asparagus	12	28,290	31,440	32,140	32,860	42,050	48,300	56,380
Beans (snap)	30	38,560	34,550	34,830	49,550	61,280	85,000	94,640
Cabbage	28	92,020	119,210	104,580	133,830	104,880	108,670	107,890
Cantaloupes	23	72,950	74,530	77,450	103,300	84,160	90,510	93,080
Carrots	8					9,770	12,220	16,950
Cauliflower	5	8,640	8,200	8,510	9,250	11,580	12,900	15,130
Celery	10	13,760	15,790	14,880	19,190	20,350	22,710	22,600
Corn (sweet)	20	250,030	261,580	136,280	197,600	252,590	332,230	403,150
Cucumbers	29	64,810	66,450	80,610	82,200	91,960	121,300	135,870
Eggplant	3			2,420	2,210	2,470	2,660	2,490
Lettuce	14	18,360	31,930	31,240	44,900	57,990	63,550	86,400
Onions	22	52,520	64,940	57,070	63,290	61,940	60,260	56,950
Peas (green)	23	135,430	149,340	133,850	171,800	207,210	247,960	256,100
Peppers	4			7,530	7,860	8,030	10,960	12,330
Potatoes (early Irish)	19	225,450	262,750	265,920	311,930	281,740	319,610	287,070
Spinach	9			22,810	23,760	30,550	34,340	41,440
Strawberries	27	86,910	93,410	109,590	132,800	148,360	151,230	134,000
Tomatoes	33	376,260	333,560	160,010	345,420	379,280	433,080	456,020
Watermelons	22	122,310	149,640	155,660	211,060	157,350	168,150	156,400

TABLE 301.—*Truck crops, commercial crop: Acreage and production, United States, 1919–1925*—Continued

PRODUCTION

Crop	1919	1920	1921	1922	1923	1924	1925
Asparagus, crates	3,669,000	3,842,000	3,287,000	4,041,000	5,854,000	6,241,000	6,442,000
Beans (snap), tons	76,500	64,200	66,800	79,600	100,300	113,600	136,800
Cabbage, do	613,800	1,062,300	687,000	1,089,000	805,700	961,700	869,200
Cantaloupes, crates	10,188,000	10,508,000	11,549,000	12,805,000	11,745,000	13,432,000	14,013,000
Carrots, bushels					3,184,000	4,302,000	4,727,000
Cauliflower, crates	2,245,000	2,190,000	2,293,000	2,589,000	3,322,000	2,735,000	3,452,000
Celery, do	3,841,000	4,573,000	4,542,000	5,030,000	5,477,000	6,741,000	6,757,000
Corn (sweet), tons	587,400	594,900	360,600	474,700	603,300	589,500	993,000
Cucumbers, bushels	6,629,000	5,385,000	8,267,000	8,867,000	7,671,000	7,473,000	11,886,000
Eggplant, do			882,000	856,000	850,000	787,000	694,000
Lettuce, crates	4,316,000	7,928,000	7,799,000	8,837,000	11,672,000	12,161,000	16,171,000
Onions, bushels	14,548,000	21,343,000	14,165,000	18,763,000	17,306,000	17,852,000	17,173,000
Peas (green), tons	124,700	169,300	125,800	181,700	180,900	268,500	242,300
Peppers, bushels			2,874,000	2,654,000	2,953,000	3,613,000	3,172,000
Potatoes (early Irish), bushels	24,667,000	30,056,000	30,193,000	36,198,000	26,245,000	41,833,000	29,594,000
Spinach, tons			61,700	67,900	95,800	107,900	101,100
Strawberries, quarts	155,800,000	155,588,000	189,670,000	260,403,000	256,409,000	276,592,000	209,586,000
Tomatoes, tons	1,436,000	1,532,800	724,200	1,658,000	1,609,000	1,606,700	2,188,200
Watermelons, number	41,354,000	57,521,000	61,774,000	71,128,000	42,734,000	53,488,000	50,838,000

Division of Crop and Livestock Estimates.

FRUITS AND VEGETABLES

TABLE 302.—*Fruits and vegetables: Shipping-point inspections made by the United States Department of Agriculture, year ended June 30, 1923–1925*

	1923	1924	1925
IN COOPERATION WITH THE STATES	*Cars*	*Cars*	*Cars*
Alabama		251	
Arkansas		88	528
California	17,778	46,424	37,517
Colorado	24,815	10,341	14,086
Delaware		50	108
Florida	162	8,370	10,710
Georgia	45	1,392	7,510
Idaho	13,338	18,403	11,366
Illinois		208	269
Indiana			631
Kansas			1,420
Louisiana		266	273
Maine	384		105
Maryland			549
Massachusetts	67	7	
Michigan			730
Mississippi		1,709	336
Missouri	36		584
Montana	444	305	115
Nebraska		4,830	2,835
Nevada		34	23
New Jersey	1,499	719	669
New York	905	1,475	1,685
North Carolina		566	2,707
North Dakota	432		
Ohio	78	169	662
Oklahoma			1,038
Oregon	387	4,442	3,686
Oregon (Malheur County)			442
Pennsylvania		274	203
South Carolina	1,091	1,712	1,082
South Dakota	368	368	188
Tennessee	51	232	134
Texas		6,349	8,289
Utah	651	1,642	1,518
Virginia	4	526	2,099
Washington	8,917	15,360	14,980
West Virginia	39	232	317
Wisconsin	1,035	2,305	1,460
Total	72,466	129,049	132,622
STRAIGHT FEDERAL INSPECTION			
Arizona		300	4
Indiana		551	
Iowa			229
Kansas		855	
Missouri		204	
Total		1,910	233
Grand total	72,466	130,959	132,855

Division of Fruits and Vegetables.

TABLE 303.—*Fruits and vegetables: Receiving point inspections by markets, years ended June 30, 1918–1925*

Markets	1918	1919	1920	1921	1922	1923	1924	1925
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Atlanta	38	98	464	385	436	563	694	600
Baltimore	118	274	833	691	864	542	421	360
Boston	517	1,106	1,399	1,028	1,049	1,154	1,649	1,718
Buffalo	89	286	535	598	609	567	839	682
Butte	5	40						
Chicago	1,124	2,302	4,115	2,671	4,120	3,257	2,967	3,172
Cincinnati	154	356	880	729	695	678	519	444
Cleveland	223	784	1,122	1,296	1,324	1,266	1,178	1,743
Columbus	43	70	297	187	253	449	665	345
Denver		184	212		16	103	171	141
Des Moines	23	124	62					
Detroit	78	694	781	561	1,061	1,222	1,109	1,417
Erie						16		
Fargo		16						
Fort Worth and Dallas	170	221	445	75	122	192	142	138
Harrisburg					27	46	25	25
Houston and Galveston	95	242	359	339	99	235	147	150
Jacksonville	64	72	7					
Indianapolis	44	358	474	510	456	450	333	318
Kansas City	363	727	1,347	865	835	791	980	953
Los Angeles		39	5	36	26	30	25	12
Louisville				9	80			
Memphis	104	276	422	321	452	441	363	452
Milwaukee	6	56	360	248	480	864	447	413
Minneapolis and St. Paul	164	500	577	558	1,035	770	629	655
New Haven						25	514	480
New Orleans	99	294	654	744	684	949	1,292	1,411
New York	1,262	2,016	2,036	2,717	4,262	4,764	7,249	9,955
Norfolk				12	146	243	454	1,179
Omaha	56	419	593	288	471	316	379	293
Oklahoma City	12	32						
Philadelphia	247	429	1,740	3,351	5,196	3,358	1,057	1,086
Pittsburgh	492	1,236	3,894	4,412	4,375	2,227	1,981	1,730
Portland	6	46	8				379	433
Sacramento				4				
Salt Lake City							13	29
San Antonio							55	21
San Diego				3				58
San Francisco	3	80	42	5	5	6	10	32
Spokane	4	25						
St. Louis	312	932	1,329	786	1,357	1,879	1,952	1,375
Washington	154	158	496	448	536	558	486	342
Wichita						52		
Wilkes-Barre					136	156	159	172
Total	6,069	14,492	25,488	23,877	31,207	28,169	29,283	32,334

Division of Fruits and Vegetables.

TABLE 304.—*Vegetables: Inspections at shipping points and receiving points, year ended June, 1925*

Commodity	Shipping point	Receiving point	Commodity	Shipping point	Receiving point	Commodity	Shipping point	Receiving point
	Cars	*Cars*		*Cars*	*Cars*		*Cars*	*Cars*
Potatoes	30,814	8,597	Cabbage	2,799	589	Other vegetables	5,184	2,253
Lettuce	7,731	859	Celery	2,432	554			
Onions	5,801	1,163	Cauliflower	1,340	218			
Cantaloupes	5,106	625	Beans	171	819	Total	66,379	17,406
Tomatoes	4,883	1,126	Watermelons	118	603			

Division of Fruits and Vegetables.

TABLE 305.—*Fruit: Inspections at shipping points and receiving points, year ended June, 1925*

Commodity	Shipping point	Receiving point	Commodity	Shipping point	Receiving point	Commodity	Shipping point	Receiving point
	Cars	*Cars*		*Cars*	*Cars*		*Cars*	*Cars*
Apples	19,771	4,897	Grapefruit	2,272	1,089	Mixed berries	239	168
Grapes	19,570	1,571	Plums and prunes	1,115	370	Other fruits	1,959	2,318
Peaches	12,625	908						
Oranges	3,595	680	Strawberries	633	1,317	Total	64,708	14,928
Pears	2,652	695	Cherries	277	915			

Division of Fruits and Vegetables.

TABLE 306.—*Vegetable seed: Imports into United States, 1910–1925*

[Thousand pounds—i. e., 000 omitted]

Kind of seed	Year ended June 30									Calendar year						
	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925 [1]
Beet, sugar	10,309	11,109	11,390	14,783	10,490	15,893	9,048	14,466	15,637	9,830	23,446	7,726	5,603	15,671	11,082	12,472
Beet, all other	624	639	872	887	1,077	991	786	483	448	161	238	257	272	335	423	421
Cabbage	162	261	311	273	255	425	278	108	83	169	391	253	181	181	210	321
Carrot	176	155	97	149	172	87	38	15	33	16	69	48	37	42	134	53
Cauliflower	6	10	7	9	11	13	9	8	8	12	17	12	13	14	14	18
Collard	1	1	[2]	2	[2]	2	[2]	[2]	[2]	1	[2]	[2]				
Corn salad	7	10	8	6	6	5	5	4	2	8	14	3	2			
Eggplant	3	1	2	2	1	1	2	1	2	1	1	1	1			
Kale	17	25	39	32	38	49	40	16	8	19	77	40	25	35	50	71
Kohl-rabi	50	17	11	14	16	16	10	9	17	17	23	14	10	16	13	22
Mushroom spawn	368	423	168	240	195	124	66	48	17	23	19	23	7	7	8	
Onions [3]													7	118	104	209
Parsley	75	75	56	129	255	139	70	38	66	53	180	151	144	68	147	376
Parsnip	89	57	55	117	130	100	100	65	7	44	17	57	40	19	58	44
Pepper	16	16	18	10	12	15	15	5	22	6	2	9	4	3	3	4
Radish	470	581	373	504	527	550	309	119	103	112	320	213	272	350	651	758
Spinach	935	972	1,218	1,698	1,386	1,136	838	634	805	367	1,139	1,222	1,927	2,017	2,686	2,958
Turnip	1,234	1,759	2,868	1,233	1,581	2,112	1,816	1,066	2,151	1,810	1,847	2,242	[5] 1,299	776	1,350	1,435
Rutabaga [4]													61	152	201	335
Mangel-wurzel [3]													79	125	298	345

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1910–1924, and from official records of the Bureau of Foreign and Domestic Commerce, 1925.

[1] Preliminary.
[2] Less than 500 pounds.
[3] Not shown separately prior to 1922.
[4] Included with turnip prior to 1922.
[5] Includes some rutabaga seed.

TABLE 307.—*Vegetable seed: Average yearly import price, per pound, 1910–1925*

Kind of seed	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925 [1]
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Beet, garden	9.4	10.3	16.4	15.7	15.0	11.0	12.0	17.2	49.2	67.2	21.1	14.2	18.0	17.7	15.0	15.8
Beet, sugar	6.5	6.6	9.7	7.2	7.6	8.8	11.2	11.6	29.0	21.7	22.2	19.6	10.7	9.8	9.8	10.4
Cabbage	22.9	34.1	37.6	47.6	49.0	35.0	42.2	44.4	170.8	211.8	76.6	57.0	61.0	46.7	43.7	47.2
Carrot	15.2	17.0	36.3	25.1	30.6	25.0	34.0	45.4	86.1	120.4	22.6	27.0	31.3	29.5	27.3	40.0
Cauliflower	334.0	400.0	562.0	537.0	381.0	313.0	524.0	601.0	458.7	382.3	820.9	813.4	688.2	645.0	606.0	648.0
Collard	19.6	12.4	14.3	13.1	17.0	15.4	24.0	77.0	88.2	175.0	26.0	23.1				
Corn salad	15.6	12.7	20.7	14.6	12.6	13.5	15.0	16.8	38.1	49.1	44.9	47.3	32.1			
Eggplant	78.6	71.9	61.1	80.8	80.6	80.5	86.2	68.7	157.1	219.7	187.6	143.5	118.8			
Kale	22.9	15.5	14.8	19.3	25.8	20.9	17.3	27.1	75.3	63.9	26.7	29.2	29.2	27.2	19.7	19.8
Kohl-rabi	11.0	18.9	28.0	28.0	35.2	28.0	28.4	40.6	78.1	98.5	52.8	46.7	54.0	46.3	45.1	36.2
Parsley	8.5	9.0	19.2	28.1	18.6	11.0	12.2	14.4	19.7	39.3	11.9	12.5	12.7	13.3	12.3	13.4
Parsnip	7.2	7.6	10.4	8.6	8.2	7.0	8.1	8.4	49.2	60.4	21.9	13.2	27.0	18.7	15.8	14.2
Pepper	42.3	41.4	40.9	44.0	38.2	41.0	41.0	57.0	88.4	151.9	109.5	68.3	105.3	88.1	69.1	66.3
Radish	11.6	12.3	13.0	13.4	14.5	12.4	13.2	17.8	67.6	57.5	24.0	21.8	20.0	19.4	16.8	17.4
Spinach	46.0	5.0	5.7	5.2	4.6	4.8	8.0	12.6	33.2	21.9	11.6	9.7	9.2	8.1	8.4	8.6
Turnip	8.5	8.6	7.9	9.3	9.1	8.7	8.9	11.8	31.5	36.9	22.8	14.6	16.8	13.9	11.6	12.2
Rutabaga [2]													12.7	12.8	12.1	10.4
Mangel-wurzel [3]													74.9	11.8	11.4	12.1
Onion [3]													13.9	103.0	100.1	115.4

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1910–1924, and from official records of the Bureau of Foreign and Domestic Commerce, 1925. All prices are f. o. b. port of origin and not including duty.

[1] Preliminary.
[2] Included with turnip prior to 1922
[3] Not segregated prior to 1922.

FRUITS AND VEGETABLES

TABLE 308.—*Fruits and vegetables: Unloads of 10 commodities at 11 markets in car lots, 1920–1925*

Commodity and year	New York	Chicago	Philadelphia	Pittsburgh	St. Louis	Cincinnati	Minneapolis	Kansas City	Washington	Cleveland	Detroit	Total
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Apples:												
1920	10,528	7,081	3,198	2,792	1,975	1,617	464	1,006	561	1,698	963	31,883
1921	11,984	6,634	3,416	2,808	1,856	1,810	422	1,002	369	1,184	1,080	32,565
1922	12,764	6,575	2,539	3,020	2,111	1,257	712	775	454	1,901	1,402	33,510
1923	15,539	10,364	3,211	3,005	2,736	1,659	681	1,507	674	1,861	1,782	43,018
1924	14,280	6,605	2,996	2,799	1,960	1,531	748	701	556	1,614	1,234	35,024
1925	13,761	7,774	2,510	2,570	1,950	1,295	873	1,421	557	1,570	2,126	36,407
Cabbage:												
1920	2,225	1,355	1,906	1,297	864	596	121	399	391	617	290	10,061
1921	3,030	1,780	1,962	1,105	1,049	669	75	400	386	505	262	11,223
1922	3,333	1,697	2,166	1,219	1,121	781	104	515	468	576	392	12,372
1923	3,981	1,685	2,233	1,274	1,018	729	81	503	390	536	401	12,831
1924	4,185	1,877	2,217	1,191	1,230	762	123	471	471	732	496	13,755
1925	3,729	1,872	2,243	1,101	1,216	700	175	484	473	572	544	13,109
Cantaloupes:												
1920	3,788	2,061	1,065	1,275	452	554	94	396	232	657	552	11,126
1921	4,781	2,308	1,258	1,322	539	640	166	452	242	733	557	12,998
1922	5,535	2,800	1,542	1,244	618	676	214	422	306	912	584	14,853
1923	4,521	2,237	1,226	1,203	512	461	199	309	253	749	536	12,206
1924	5,742	2,508	1,416	1,203	728	813	260	408	306	906	686	14,976
1925	6,908	2,973	1,434	1,392	784	678	297	470	356	1,086	969	17,297
Celery:												
1920	1,276	979	753	529	217	207	89	220	193	144	154	4,761
1921	1,691	1,479	951	665	354	316	126	304	197	243	264	6,590
1922	1,981	1,689	814	677	350	331	152	321	214	217	321	7,067
1923	2,507	1,818	850	830	386	370	214	382	241	340	466	8,404
1924	2,998	1,631	1,186	822	441	382	244	313	257	361	574	9,209
1925	3,307	2,376	1,342	798	544	396	295	341	313	356	706	10,774
Onions:												
1920	3,723	1,236	1,554	1,115	687	283	107	426	223	593	654	10,601
1921	4,429	1,545	1,482	922	559	314	91	345	196	498	558	10,939
1922	4,933	1,673	1,698	951	672	400	115	453	235	548	675	12,353
1923	8,338	1,951	1,790	941	664	394	95	454	247	662	732	16,268
1924	8,118	1,955	2,067	1,023	788	480	142	537	292	745	795	16,942
1925	8,363	2,042	2,110	922	776	453	140	473	310	800	979	17,368

TABLE 308.—*Fruits and vegetables: Unloads of 10 commodities at 11 markets in car lots, 1920–1925*—Continued

Commodity and year	New York	Chicago	Philadelphia	Pittsburgh	St. Louis	Cincinnati	Minneapolis	Kansas City	Washington	Cleveland	Detroit	Total
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
Peaches:												
1920	2,406	1,264	837	849	347	481	64	158	190	477	619	7,692
1921	4,143	1,326	1,056	759	481	600	101	268	148	532	555	9,969
1922	4,617	2,107	1,016	1,071	438	609	192	331	294	850	996	12,521
1923	3,496	1,404	778	744	542	649	158	320	220	692	774	9,777
1924	4,693	1,845	1,093	841	777	762	233	338	226	1,146	1,123	13,077
1925	4,972	1,998	991	914	631	626	217	278	273	849	1,287	13,036
Potatoes:												
1920	15,078	11,299	7,130	5,614	2,512	2,189	756	2,145	874	3,109	2,695	53,401
1921	17,986	13,077	7,460	5,396	3,592	2,857	845	2,257	1,153	3,175	2,203	60,001
1922	20,100	13,912	8,023	5,009	4,290	3,447	717	2,433	1,623	3,506	2,948	66,008
1923	21,330	14,436	8,519	4,906	3,012	2,942	735	2,417	1,646	3,105	2,818	65,866
1924	22,726	15,664	8,272	4,033	2,905	2,698	520	2,512	1,784	3,499	2,465	67,078
1925	23,002	14,768	8,698	3,897	3,696	3,188	707	3,125	1,859	2,872	3,381	69,193
Strawberries:												
1920	736	767	268	185	85	80	84	68	34	138	171	2,616
1921	1,101	1,499	300	321	132	356	147	180	50	239	225	4,550
1922	2,193	1,719	568	497	265	474	351	262	48	342	552	7,271
1923	2,507	1,696	750	516	277	559	246	129	62	393	548	7,683
1924	2,537	1,809	691	458	229	355	228	146	57	349	550	7,409
1925	2,005	942	455	285	130	340	184	145	71	260	413	5,230
Sweet potatoes:												
1921	1,592	1,231	440	913	194	368	91	180	197	563	286	6,055
1922	1,625	1,315	378	962	127	461	141	147	183	543	293	6,175
1923	1,255	1,497	409	944	136	413	133	102	180	606	389	6,064
1924	1,286	1,096	350	757	106	359	116	53	146	456	317	5,042
1925	1,678	1,383	415	809	134	428	148	55	201	533	463	6,247
Tomatoes:												
1920	1,779	1,183	810	765	220	218	49	214	149	152	174	5,713
1921	2,872	1,588	1,105	919	327	287	58	262	193	146	203	7,960
1922	3,974	1,918	1,382	1,219	444	438	121	330	254	271	470	10,821
1923	3,981	1,652	1,436	1,321	309	339	106	302	226	231	425	10,328
1924	4,623	2,042	1,507	1,134	443	345	158	239	248	305	455	11,499
1925	4,931	2,128	1,478	1,122	442	309	174	240	261	268	663	12,016
Total (10 commodities):[1]												
1920	48,295	27,225	17,521	14,421	7,359	6,225	1,828	5,032	2,847	7,585	6,272	144,610
1921	59,107	32,467	19,430	15,130	9,083	8,217	2,122	5,650	3,131	7,818	6,193	168,348
1922	67,448	35,405	20,126	15,869	10,436	8,874	2,819	5,989	4,079	9,666	8,633	189,344
1923	73,293	38,740	21,202	15,684	9,592	8,515	2,648	6,425	4,139	9,175	8,871	198,284
1924	75,963	37,032	21,795	14,261	9,607	8,487	2,772	5,718	4,343	10,113	8,695	198,786
1925	76,378	38,256	21,676	13,810	10,303	8,413	3,210	6,982	4,674	9,166	11,531	204,399

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Unloads as shown in car lots include those by boat reduced to car-lot basis.

[1] The totals include l. e. l. unloads for New York, converted to car-lot equivalents: 6,756 cars in 1920; 5,498 in 1921; 6,393 in 1922; 5,839 in 1923; 4,775 in 1924; 3,722 in 1925.

STATISTICS OF FIELD CROPS OTHER THAN GRAIN

BEANS

TABLE 309.—*Beans, dry: Acreage, production, and total farm value, United States, 1914–1925*

Year	Thousands of acres	Average yield in bushels per acre	Production, thousands of bushels	Price per bushel received by producers Dec. 1	Farm value, thousands of dollars
1914	875	13.2	11,585	$2.26	26,213
1915	928	11.1	10,321	2.59	26,771
1916	1,107	9.7	10,715	5.10	54,686
1917	1,821	8.8	16,045	6.50	104,350
1918	1,744	10.0	17,397	5.28	91,863
1919	1,060	12.6	13,349	4.26	56,811
1920	847	10.8	9,185	2.95	27,134
1921	782	11.7	9,185	2.67	24,515
1922	1,086	11.9	12,877	3.74	48,133
1923	1,344	12.1	16,308	3.67	59,782
1924	1,545	9.6	14,856	3.72	55,239
1925 [1]	1,579	12.1	19,100	3.27	62,388

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 310.—*Beans, dry: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Thousands of acres		Average yield in bushels per acre		Production thousands of bushels		Price per bushel received by producers Dec. 1		Farm value, thousands of dollars	
	1924	1925 [1]	1924	1925	1924	1925 [1]	1924	1925	1924	1925 [1]
Maine	7	8	15.5	14.0	108	112	$4.90	$5.00	529	560
Vermont	4	4	15.0	11.0	60	44	4.00	4.50	240	198
New York	155	132	13.0	10.8	2,015	1,426	3.80	4.60	7,657	6,560
Michigan	614	614	10.5	13.5	6,447	8,289	3.15	2.95	20,308	24,453
Wisconsin	10	12	8.5	11.0	85	132	3.40	3.20	289	422
Minnesota	10	8	10.0	13.0	100	104	3.70	3.40	370	354
Montana	34	40	12.0	12.5	408	500	3.30	3.05	1,346	1,525
Idaho	65	72	19.5	22.0	1,268	1,584	4.10	2.70	5,199	4,277
Wyoming	8	10	12.0	15.0	96	150	3.55	3.00	341	450
Colorado	280	320	3.4	7.0	952	2,240	3.10	2.40	2,951	5,376
New Mexico	174	114	5.0	3.5	870	399	3.80	3.30	3,306	1,317
Arizona	5	5	6.0	8.0	30	40	4.50	4.20	135	168
California	179	240	13.5	17.0	2,417	4,080	5.20	4.10	12,568	16,728
Total	1,545	1,579	9.6	12.1	14,856	19,100	3.72	3.27	55,239	62,388

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 311.—*Beans, dry: Car-lot shipments by State of origin, 1920–1925*

State	1920	1921	1922	1923	1924	1925 [1]
	Cars	*Cars*	*Cars*	*Cars*	*Cars*	*Cars*
New York	656	1,327	1,599	1,775	1,917	1,525
Michigan	3,187	5,990	5,087	5,998	8,701	8,462
Idaho	185	146	395	604	1,095	1,783
Colorado	231	542	483	1,091	1,454	2,291
New Mexico	608	974	289	85	275	297
California	3,956	3,854	3,822	3,284	2,230	2,310
Other States	158	122	86	153	231	457
Total	8,981	12,955	11,761	12,990	15,903	17,125

Division of Statistical and Historical Research. Compiled from reports of Fruit and Vegetable Division. Shipments as shown in car lots include those by boat reduced to car-lot basis.

[1] Preliminary.

BEANS

TABLE 312.—*Beans, dry: Estimated price per bushel, received by producers, United States, 1910–1925*

Year beginning September	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Weighted av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	2.28	2.25	2.14	2.20	2.20	2.23	2.17	2.20	2.17	2.19	2.23	2.20	2.21
1911	2.26	2.27	2.34	2.42	2.38	2.38	2.42	2.37	2.52	2.62	2.47	2.40	2.37
1912	2.38	2.34	2.25	2.31	2.26	2.19	2.10	2.11	2.18	2.23	2.22	2.11	2.25
1913	2.08	2.25	2.20	2.12	2.17	2.09	2.05	2.11	2.31	2.23	2.22	2.54	2.17
Av. 1910–1913	2.25	2.28	2.23	2.26	2.25	2.22	2.18	2.20	2.30	2.32	2.28	2.31	2.25
1914	2.46	2.17	2.28	2.40	2.63	3.02	2.89	2.81	2.93	2.87	2.75	2.67	2.56
1915	2.70	2.93	3.03	3.30	3.47	3.43	3.34	3.42	3.56	3.72	5.09	4.59	3.27
1916	4.60	4.47	5.53	5.77	5.71	6.07	6.49	7.37	8.94	8.99	8.07	7.29	5.92
1917	6.69	7.48	7.33	7.00	7.00	7.08	6.95	6.95	6.67	6.28	5.88	6.11	7.04
1918	5.67	5.52	5.46	4.86	4.98	4.52	4.40	4.44	4.19	4.39	4.25	4.30	4.98
1919	4.36	4.27	4.42	4.41	4.70	4.47	4.32	4.41	4.36	4.49	4.47	4.17	4.41
1920	3.83	3.46	3.27	2.99	2.95	2.85	2.89	2.69	2.73	2.82	2.75	2.83	3.12
Av. 1914–1920	4.33	4.33	4.47	4.39	4.49	4.49	4.47	4.58	4.77	4.79	4.75	4.57	4.47
1921	2.99	2.87	2.85	2.83	2.86	3.04	3.64	3.77	4.02	4.48	4.29	4.09	3.18
1922	3.22	3.36	3.71	3.91	4.24	4.42	4.30	4.32	4.26	4.05	3.94	3.62	3.88
1923	3.78	3.87	3.83	3.44	3.49	3.56	3.47	3.50	3.48	3.38	3.28	3.52	3.63
1924	3.72	3.72	3.81	3.91	4.08	4.27	3.91	3.84	3.91	4.28	3.98	4.00	3.91
1925	3.87	3.69	3.67	3.74									

Division of Crop and Livestock Estimates.

TABLE 313.—*Beans: Wholesale price per 100 pounds, 1914–1925*

Year	Boston, pea			Chicago, pea			San Francisco, small white		
	Low	High	Average	Low	High	Average	Low	High	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1914	2.10	3.10	2.10	1.60	3.10	2.22	4.00	6.00	4.98
1915	2.85	4.10	3.36	2.40	4.10	3.19	4.50	6.40	5.30
1916	3.80	7.25	4.96	3.00	8.00	4.24	6.25	11.50	8.05
1917	6.50	15.00	9.24	6.40	14.50	9.09	10.50	16.00	13.20
1918	9.00	14.00	12.08	8.25	15.00	11.49	8.90	12.75	11.64
1919	6.00	10.00	7.74	6.50	9.50	7.92	5.75	8.90	7.05
1920	4.75	8.25	6.98	4.25	9.25	6.76	3.75	6.75	5.72
Low, high and average, 1914–1920	2.10	15.00	6.64	1.60	15.00	6.42	3.75	16.00	7.99
1921	4.25	5.50	4.88	3.60	5.50	4.61	3.20	4.90	4.03
1922	5.00	10.50	7.60	4.60	11.15	7.46	4.75	7.75	6.18
1923	5.50	8.75	7.40	5.30	9.00	7.04	5.75	7.75	6.67
1924	5.00	6.50	5.74	4.90	6.50	5.46	5.75	8.25	6.81
1925	5.30	7.50	6.26	5.20	7.25	6.16	5.35	7.90	7.06
Low, high and average, 1921–1925	4.25	10.50	6.38	3.60	11.15	6.15	3.20	8.25	6.15
1925									
January	6.50	7.50	6.94	5.50	7.25	6.64	7.00	7.65	7.22
February	7.00	7.50	7.20	5.50	6.65	6.37	7.40	7.90	7.71
March	6.75	7.00	6.91	6.25	6.75	6.39	7.40	7.75	7.54
April	6.25	6.75	6.60	6.25		6.25	7.40	7.60	7.49
May	6.10	6.50	6.31	5.90	6.25	6.14	7.20	7.60	7.38
June	6.25	6.50	6.34	5.90	6.10	6.02	7.20	7.50	7.31
July	5.90	6.40	6.17		6.10	6.10	7.35	7.50	7.42
August	5.75	6.00	5.89	5.25	6.50	6.08	7.25	7.50	7.42
September	5.30	5.65	5.50	6.50	7.00	6.69	7.25	7.40	7.32
October	5.40	5.50	5.49	5.20	7.00	6.11	5.35	7.40	6.20
November	5.60	6.00	5.86	5.65	5.75	5.70	5.35	6.25	5.71
December	5.75	6.00	5.90	5.30	5.60	5.45	5.75	6.10	5.98

Division of Statistical and Historical Research. Compiled from reports of the Boston Chamber of Commerce, average of weekly range; Chicago Daily Trade Bulletin and San Francisco Commercial news, average of daily range.

SOY BEANS

TABLE 314.—*Soy beans: Estimated price per bushel, received by producers, United States, 1913–1925*

Year beginning October	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Weighted average
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1913	1.96	1.57	1.72	1.96	1.80	1.76
1914	2.08	2.15	2.24	2.35	2.26	2.18
1915	1.88	2.08	2.23	2.31	2.39	2.11
1916	2.13	2.13	2.18	2.20	2.45	2.16
1917	2.73	2.86	3.33	3.47	3.82	3.05
1918	3.36	3.20	3.29	3.00	3.00	3.23
1919	3.34	3.35	3.44	3.76	4.05	3.45
1920	3.41	3.00	2.28	2.18	2.17	2.80
1921	2.20	2.22	2.08	2.11	2.16	2.17
1922	1.89	2.06	1.97	2.07	2.13	2.00
1923	2.09	2.11	2.11	2.23	2.26	2.12
1924	2.23	2.16	2.36	2.59	2.64	2.29
1925	2.27	2.18	2.17			

Division of Crop and Livestock Estimates.

TABLE 315.—*Soy bean seed: Average wholesale selling price per 100 pounds at leading markets, 1920–1925*

Year	Baltimore						Minneapolis					
	Jan.	Feb.	Mar.	Apr.	May	Av.	Jan.	Feb.	Mar.	Apr.	May	Av.
	Dols.	*Dols*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1920	6.80	8.00	8.00	8.00	8.60	7.88	8.50	9.90	10.50	11.00	11.00	10.18
1921	3.15	3.50	3.50	3.75	4.70	3.72	10.00	10.00	10.00	10.00	7.50	9.50
1922	3.20	3.50	3.50	3.50	3.30	3.40	4.60	5.00	5.00	5.00	5.40	5.00
1923		4.00	4.00	3.80	3.75		6.00	6.00	5.85	5.95	6.30	6.02
1924	3.50	4.00	4.00	4.50	5.00	4.20	5.75	5.75	5.75	5.75	5.75	5.75
1925	5.10	4.90	5.25	4.95	3.95	4.83	4.75	4.70	4.75	4.60	4.25	4.61
Average 1921–1925		3.98	4.05	4.10	4.14		6.22	6.29	6.27	6.26	5.84	6.18
	Chicago						Richmond					
1920	10.25	11.75	10.25	9.00	8.60	9.97	7.40	8.30	8.25	8.30	8.80	8.21
1921	9.00	9.00	9.00	7.10	5.50	7.92	3.80	4.25	4.15	4.00	4.85	4.21
1922	3.10	3.45	3.35	3.85	4.30	3.61	3.70	3.80	3.70	3.70	3.35	3.65
1923	4.00	4.15	4.35	4.75	5.25	4.50	4.00	4.00	3.80	3.70	3.75	3.85
1924	4.00	4.20	4.25	4.40	3.90	4.15	3.75	3.75	3.85	3.90	4.55	3.96
1925	4.15	4.00	3.90	3.90	3.55	3.90	5.20	5.65	5.75	5.55	5.35	5.50
Average 1921–1925	4.85	4.96	4.97	4.80	4.50	4.82	4.09	4.29	4.25	4.17	4.37	4.23
	Kansas City						St. Louis					
1920	8.95	10.00	10.00	9.00	9.60	9.51	8.10	10.00	9.90	9.65	10.00	9.53
1921		4.65	5.25	6.00	6.00		4.30	5.40	5.75	5.00	5.40	5.17
1922	2.95	3.00	3.20	3.65	4.75	3.51	4.00	4.00	4.20	3.85	4.55	4.12
1923	3.35	3.60	3.70	4.45	5.40	4.10	5.00	4.75	4.50	4.50	4.95	4.74
1924	4.15	4.15	4.20	4.25	4.25	4.20	4.70	4.70	4.70	4.70	4.60	4.68
1925	4.20	4.15	4.15	4.10	3.60	4.04	4.00	4.00	4.00	3.75	3.60	3.87
Average 1921–1925		3.91	4.10	4.49	4.80		4.40	4.57	4.63	4.36	4.62	4.52
	Louisville						Toledo					
1920	8.30	9.40	9.00	8.90	9.35	8.99	10.20	10.40	9.70	9.40	9.50	9.84
1921	3.95	4.00	4.30	4.25	5.50	4.40				6.50	6.50	
1922	3.55	3.75	3.75	3.75	3.95	3.75				4.25	4.25	
1923	4.35	4.50	3.95	4.05	4.65	4.30	4.00	4.00	4.30	4.50	5.00	4.36
1924	3.90	4.00	4.00	4.60	4.85	4.27	5.00	5.00	5.00	4.80	4.25	4.81
1925	3.90	4.00	3.90	3.80	3.65	3.85	4.00	4.00	4.00	3.60	3.50	3.82
Average 1921–1925	3.93	4.05	3.98	4.09	4.52	4.11				4.73	4.70	

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division. These prices are the average wholesale selling prices for high quality seed, as reported to the Hay, Feed, and Seed Division, weekly, by seedsmen in these markets.

COWPEAS

TABLE 316.—*Cowpeas: Estimated price per bushel, received by producers, United States, 1915–1925*

Year beginning August	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Weighted average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1915	174.4	155.4	156.0	151.4	151.8	156.3	157.2	153.7	150.2	148.8	140.0	135.1	151.9
1916	141.3	142.4	148.1	161.6	177.0	192.2	210.0	231.8	253.4	293.1	309.1	303.2	189.7
1917	265.4	217.0	219.5	227.1	237.5	262.2	292.5	301.5	292.8	283.3	257.4	248.4	236.2
1918	241.3	226.2	233.9	231.4	237.6	238.9	252.1	248.8	267.6	292.3	343.9	342.8	254.3
1919	310.3	269.4	260.9	270.7	280.6	312.9	372.4	394.0	421.4	484.4	483.7	470.8	319.4
1920	422.7	368.8	273.7	243.4	229.0	197.2	204.2	204.7	215.5	242.7	265.1	287.2	273.8
1921	240.9	199.7	201.2	184.8	176.1	171.9	179.7	185.8	184.8	189.5	184.0	170.0	190.7
1922	166.5	157.4	153.6	160.7	167.4	187.0	197.6	198.2	208.0	208.5	217.2	221.3	172.8
1923	208.1	187.2	195.4	194.7	200.9	211.5	221.1	231.9	246.3	253.4	282.4	285.6	213.6
1924	255.6	240.7	231.5	234.4	256.2	282.0	316.1	342.9	366.7	369.5	384.0	366.9	272.7
1925	323.7	311.6	293.3	297.5	287.2	------	------	------	------	------	------	------	------

Division of Crop and Livestock Estimates.

TABLE 317.—*Cowpea seed: Average wholesale selling price per 100 pounds at leading markets, 1920–1925*

Year	Baltimore						Louisville					
	Jan.	Feb.	Mar.	Apr.	May	Av.	Jan.	Feb.	Mar.	Apr.	May	Av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1920	7.20	9.00	9.00	9.00	9.60	8.76	10.40	10.75	10.00	10.00	10.40	10.31
1921	4.50	4.50	4.50	5.30	6.20	5.00	4.60	4.65	5.50	5.30	6.30	5.27
1922	3.70	4.00	4.00	4.00	4.00	3.94	3.75	4.00	4.00	4.00	4.00	3.95
1923	4.25	4.25	4.25	4.25	4.25	4.25	4.85	5.00	4.55	4.50	4.90	4.76
1924	5.00	5.50	5.25	5.60	5.75	5.42	5.00	5.00	5.15	5.95	6.55	5.53
1925	6.50	6.50	6.50	6.50	6.55	6.51	7.00	7.00	7.10	7.25	6.95	7.06
Average, 1921–1925	4.79	4.95	4.90	5.13	5.35	5.02	5.04	5.13	5.26	5.40	5.74	5.31
	Chicago						Richmond					
1920	8.20	9.50	10.00	10.15	10.50	9.67	8.50	10.00	9.80	9.25	10.20	9.55
1921	4.65	4.75	4.50	5.65	6.00	5.11	5.05	5.15	4.80	5.30	6.45	5.35
1922	3.10	3.50	3.50	4.00	------	------	4.30	4.40	4.40	4.30	4.00	4.32
1923	------	4.80	4.35	4.30	4.50	------	4.50	4.65	4.55	4.35	4.40	4.49
1924	4.00	4.00	6.20	6.50	6.50	5.44	5.00	5.20	5.20	5.30	6.00	5.34
1925	------	------	------	------	------	------	7.20	7.60	7.50	7.50	7.75	7.51
Average, 1921–1925	------	------	------	------	------	------	5.25	5.40	5.29	5.35	5.72	5.40
	Kansas City						St. Louis					
1920	11.00	2.15	11.65	10.75	10.90	11.30	10.50	12.75	11.25	10.65	11.00	11.23
1921	------	5.50	5.00	4.90	5.75	------	4.00	4.20	4.45	5.05	6.50	4.84
1922	3.75	3.75	4.00	4.20	4.45	4.03	3.20	3.15	3.65	3.75	3.75	3.50
1923	4.15	4.50	4.50	4.90	5.00	4.61	5.00	4.95	4.75	4.75	4.95	4.88
1924	5.00	5.00	5.10	6.10	6.85	5.61	4.60	4.95	5.00	5.05	5.90	5.10
1925	7.60	7.60	7.70	7.90	7.90	7.74	6.50	6.70	6.80	6.80	6.80	6.72
Average, 1921–1925	------	5.07	5.26	5.60	5.99	------	4.66	4.79	4.93	5.08	5.58	5.01

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division. These prices are the average wholesale selling prices for high quality seed, as reported to the Hay, Feed, and Seed Division weekly by seedsmen in these markets.

BROOMCORN

TABLE 318.—*Broomcorn: Acreage, production, and total farm value, United States, 1915–1925*

Year	Acreage	Average yield per acre	Production	Price per ton received by producers Nov. 15	Farm value
	Acres	*Pounds*	*Short tons*	*Dollars*	*1,000 dollars*
1915	230,100	454.1	52,242	91.67	4,789
1916	235,200	329.3	38,726	172.75	6,690
1917	345,000	332.8	57,400	292.75	16,804
1918	366,000	340.4	62,300	233.87	14,570
1919	352,000	303.4	53,400	154.57	8,254
1920	275,500	265.0	36,500	126.16	4,605
1921	222,000	344.2	38,200	72.20	2,758
1922	275,000	271.3	37,300	219.46	8,186
1923	536,000	302.8	81,153	160.06	12,989
1924	451,000	346.8	78,200	95.63	7,478
1925[1]	200,000	289.0	28,900	140.17	4,051

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 319.—*Broomcorn: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Acreage		Average yield per acre		Production		Price per ton received by producers Nov. 15		Farm value	
	1924	1925[1]	1924	1925	1924	1925[1]	1924	1925	1924	1925[1]
	Acres	*Acres*	*Pounds*	*Pounds*	*Tons*	*Tons*	*Dollars*	*Dollars*	*1,000 dollars*	*1,000 dollars*
Illinois	49	31	450	570	11,000	8,800	150	175	1,650	1,540
Missouri	4	4	300	322	600	600	160	200	96	120
Kansas	45	22	295	286	6,600	3,100	95	120	627	372
Tennessee	2	2	350	360	400	400	100	125	40	50
Oklahoma	246	94	369	200	45,400	9,400	85	136	3,859	1,278
Texas	23	11	418	318	4,800	1,700	100	140	480	238
Colorado	34	12	170	200	2,900	1,200	60	100	174	120
New Mexico	48	24	270	308	6,500	3,700	85	90	552	333
United States	451	200	346.8	289.0	78,200	28,900	95.63	140.17	7,478	4,051

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 320.—*Broomcorn: Estimated price per ton received by producers, United States, 1910–1925*

Year.	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols*	*Dols.*
1910	190	197	200	204	199	151	180	142	139	108	96	93
1911	81	80	78	74	81	69	68	72	92	121	124	108
1912	100	86	99	101	83	79	85	83	77	70	69	57
1913	49	56	57	58	53	61	57	91	106	102	100	92
Av. 1910–1913	105	105	108	109	104	90	98	97	104	100	97	88
1914	94	95	91	89	85	88	88	91	77	67	66	58
1915	66	78	68	71	75	77	79	83	75	86	92	101
1916	104	104	104	96	101	102	103	120	129	168	173	172
1917	184	201	212	227	252	223	194	308	240	270	296	280
1918	249	254	242	222	206	222	235	232	300	265	205	172
1919	169	141	174	149	152	106	119	124	154	162	161	163
1920	163	123	130	145	146	145	113	142	125	126	123	88
Av. 1914–1920	147	142	146	143	145	138	133	157	157	163	159	148
1921	70	71	72	69	66	76	75	67	68	72	68	86
1922	71	88	80	76	82	87	84	122	175	193	217	238
1923	229	256	242	254	223	233	214	195	169	197	161	172
1924	131	114	110	106	107	107	------	171	156	139	94	94
1925	92	83	82	96	80	79	99	134	139	150	157	126

Division of Crop and Livestock Estimates.

COTTON

TABLE 321.—*Cotton: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage picked	Average yield per acre	Production	Price per pound received by producers Dec. 1	Farm value, Dec. 1	Value per acre.[1]	New York closing prices per pound on middling upland.				Domestic exports, fiscal year beginning July 1[2]	Imports, fiscal year beginning July 1[2]
							December		Following May			
							Low	High	Low	High		
	1,000 acres	*Lbs.*	*1,000 bales*	*Cents*	*1,000 dollars*	*Dollars*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Bales*[3]	*Bales*[3]
1909	30,938	154.3	*10,005*	13.9	697,681	22.55	14.65	16.15	14.50	16.05	6,413,416	172,075
1910	32,403	170.7	*11,609*	14.1	820,407	25.32	14.80	15.25	15.35	16.15	8,067,882	227,537
1911	36,045	207.7	*15,693*	8.8	687,888	19.08	9.20	9.65	11.30	11.90	11,070,251	219,560
1912	34,283	190.9	*13,703*	11.9	817,055	23.83	12.75	13.20	11.80	12.10	9,124,591	243,704
1913	37,089	182.0	*14,156*	12.2	862,708	23.26	12.50	13.50	12.90	14.50	9,521,881	246,694
Av. 1909–1913	34,152	182.5	*13,033*	12.5	777,148	22.76	12.78	13.55	13.17	14.14	8,839,604	221,914
1914	36,832	209.2	*16,195*	6.8	549,036	14.91	7.25	7.80	9.50	10.40	8,807,157	370,409
1915	31,412	170.3	*11,192*	11.3	631,460	20.10	11.95	12.75	12.30	13.35	6,168,140	465,602
1916	34,985	156.6	*11,450*	19.6	1,122,295	32.08	16.20	20.30	19.60	22.10	6,176,162	294,123
1917	33,841	159.7	*11,302*	27.7	1,566,198	46.28	29.85	31.85	25.70	30.10	4,641,023	206,651
1918	36,008	159.6	*12,041*	27.6	1,663,633	46.20	27.50	33.00	25.90	34.00	5,525,894	207,184
1919	33,566	161.5	*11,421*	35.6	2,034,658	60.62	38.00	40.25	40.90	43.00	7,087,487	690,628
1920	35,878	178.4	*13,440*	13.9	933,658	26.02	14.50	16.70	12.45	13.15	5,622,777	251,878
Av. 1914–1920	34,646	171.6	*12,426*	20.4	1,214,420	35.05	20.75	23.24	20.78	23.73	6,289,806	355,211
1921	30,509	124.5	*7,954*	16.2	643,933	21.11	17.50	19.45	18.95	21.80	6,717,757	358,330
1922	33,036	141.3	*9,762*	23.8	1,160,968	35.14	24.55	26.80	25.30	28.90	5,253,464	472,185
1923	37,123	130.6	*10,140*	31.0	1,571,823	42.34	34.35	37.65	30.05	32.85	5,898,713	292,047
1924	41,360	157.6	*13,628*	22.6	1,540,884	37.26	23.15	24.90	22.20	24.40	8,439,071	310,185
1925[4]	46,053	167.2	16,106	18.2	1,464,187	31.79	19.15	21.10	----	----	----------	----------

Division of Crop and Livestock Estimates; figures in italics are census returns; acreage revised on census basis.

[1] Based on farm price Dec. 1.
[2] Compiled from Commerce and Navigation of United States, 1909–1918, and the June issue of Monthly Summaries of Foreign Commerce, 1919–1925.
[3] Bales of 500 pounds gross weight.
[4] Preliminary.

TABLE 322.—*Cotton: Acreage harvested, by States, 1916–1925*

[Thousand acres—i. e., 000 omitted]

State	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Missouri	133	153	148	125	136	103	198	355	493	520
Virginia	42	50	44	42	42	34	55	74	102	100
North Carolina	1,451	1,515	1,600	1,490	1,587	1,403	1,625	1,679	2,005	2,017
South Carolina	2,780	2,837	3,001	2,835	2,964	2,571	1,912	1,965	2,404	2,654
Georgia	5,277	5,195	5,341	5,220	4,900	4,172	3,418	3,421	3,046	3,589
Florida	191	183	167	103	100	65	118	147	80	101
Tennessee	887	882	902	758	840	634	985	1,172	996	1,173
Alabama	3,225	1,977	2,570	2,791	2,858	2,235	2,771	3,079	3,055	3,504
Mississippi	3,110	2,788	3,138	2,848	2,950	2,628	3,014	3,170	2,981	3,466
Arkansas	2,600	2,740	2,991	2,725	2,980	2,382	2,799	3,026	3,094	3,738
Louisiana	1,250	1,454	1,683	1,527	1,470	1,168	1,140	1,405	1,616	1,874
Oklahoma	2,562	2,783	2,998	2,424	2,749	2,206	2,915	3,197	3,861	5,214
Texas	11,400	11,092	11,233	10,476	11,898	10,745	11,874	14,150	17,175	17,608
New Mexico	----	----	----	----	----	----	----	60	101	107
Arizona	----	41	95	107	230	90	101	127	180	162
California	52	136	85	85	150	55	67	83	130	169
All other	25	15	12	10	24	18	44	13	41	57
United States	34,985	33,841	36,008	33,566	35,878	30,509	33,036	37,123	41,360	46,053
Lower Calif. (old Mex.)	----	----	88	100	125	85	135	150	137	150

Division of Crop and Livestock Estimates.

TABLE 323.—*Cotton: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Missouri	271	265	360	260	286	292	270	240	225	190	200	257	275	237	325	360	171	187	255	260
Virginia	190	212	330	250	240	244	265	225	310	180	270	255	230	248	230	230	325	181	250	243
North Carolina	210	227	315	267	239	252	290	260	215	194	208	266	275	253	264	250	290	196	255	251
South Carolina	210	216	280	209	235	230	255	215	160	208	250	240	260	327	140	123	187	160	152	152
Georgia	184	173	240	159	208	193	239	189	165	173	190	152	138	178	90	100	82	157	153	116
Florida	110	110	130	113	150	123	175	120	105	100	85	74	86	106	80	102	40	130	180	106
Tennessee	158	207	257	169	210	200	200	188	206	130	175	195	185	183	228	190	92	170	198	176
Alabama	142	160	204	172	190	174	209	146	79	125	149	122	111	134	124	142	91	154	180	138
Mississippi	157	182	172	173	204	178	195	167	125	155	187	160	145	162	148	157	91	176	265	167
Arkansas	153	175	190	190	205	183	196	180	209	170	158	155	195	180	160	173	98	169	192	159
Louisiana	130	120	170	193	170	157	165	165	170	210	167	93	126	157	114	144	125	146	232	152
Oklahoma	147	200	160	183	132	164	212	162	154	165	92	195	230	173	104	103	98	187	143	127
Texas	125	145	186	206	150	162	184	147	157	135	115	140	174	150	98	130	147	138	113	125
New Mexico	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	230	270	289	------
Arizona	------	------	------	------	------	------	------	------	------	285	280	270	224	------	242	222	292	285	286	265
California	------	335	390	450	500	------	500	380	400	242	270	268	266	332	258	188	285	285	351	273
United States	154.3	170.7	207.7	190.9	182.0	181.1	209.2	170.3	156.6	159.7	159.6	161.5	178.4	170.8	124.5	141.3	130.6	157.6	162.3	143.3

Division of Crop and Livestock Estimates.

TABLE 324.—*Cotton: Production of lint (excluding linters) in 500-pound gross-weight bales, by States, year beginning August 1, 1916–1925*

[Thousand bales—i. e., 000 omitted]

State	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925 [1]
Missouri	63	61	62	64	79	70	[2] 149	[2] 127	[2] 193	260
Virginia	27	19	25	23	21	16	27	51	39	50
North Carolina	655	618	898	830	925	776	852	1,020	825	1,000
South Carolina	932	1,237	1,570	1,426	1,623	755	492	770	807	875
Georgia	1,821	1,884	2,122	1,660	1,415	787	715	588	[2] 1,002	1,150
Florida	41	38	29	16	18	11	25	12	[2] 22	40
Tennessee	382	241	330	310	325	302	391	[2] 226	[2] 354	490
Alabama	533	518	801	713	663	580	823	587	[2] 985	1,335
Mississippi	812	906	1,226	961	895	813	989	604	1,099	1,930
Arkansas	1,134	974	987	884	1,214	797	[2] 1,012	[2] 622	[2] 1,094	1,530
Louisiana	443	639	588	298	388	279	343	368	493	900
Oklahoma	824	959	577	1,016	1,336	481	627	656	1,511	1,550
Texas	3,726	3,125	2,697	3,099	4,345	2,198	3,222	4,340	[2] 4,949	4,100
New Mexico						6	12	30	57	61
Arizona		22	56	60	103	45	47	78	108	94
California	44	58	67	56	75	34	28	54	77	126
All other	14	6	6	5	13	3	7	[2] 6	[2] 14	22
United States	11,450	11,302	12,041	11,421	13,440	7,954	9,762	10,140	13,628	15,603

Division of Crop and Livestock Estimates. Compiled from reports of the Bureau of the Census.

[1] Preliminary estimate of the Department of Agriculture.
[2] Slight differences from census figures on ginnings due to ginnings in one State of cotton grown in another.

TABLE 325.—*Cotton (linters): Production, United States, 1909–1924*

Year beginning August	Production, in 500-lb. gross-weight bales	Year beginning August	Production, in 500-lb. gross-weight bales
1909	310,433	1917	1,125,719
1910	397,072	1918	929,516
1911	557,575	1919	607,969
1912	609,594	1920	440,313
1913	638,881	Average 1914–1920	888,895
Average 1909–1913	502,711	1921	397,752
1914	856,900	1922	607,779
1915	931,141	1923	668,600
1916	1,330,714	1924	897,375

Division of Crop and Livestock Estimates. Compiled from reports of the Bureau of the Census.

TABLE 326.—*Cotton ginned to specified dates and throughout the season, United States, 1909–1925*

Season beginning August	Cotton ginned to—												Total ginned [1]
	Aug. 1	Aug. 16	Sept. 1	Sept. 25	Oct. 1	Oct. 18	Nov. 1	Nov. 14	Dec. 1	Dec. 13	Jan. 1	Jan. 16	
	Bales	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*
1909			388,242	2,568,150		5,530,967	7,017,849	8,112,199	8,876,886	9,358,085	9,647,327	9,787,592	10,072,731
1910			353,011	2,312,074		5,423,628	7,345,953	8,780,433	10,139,712	10,695,443	11,084,515	11,253,147	11,568,334
1911			771,297	3,676,594		7,758,621	9,970,905	11,313,236	12,816,807	13,770,727	14,317,002	14,515,799	15,553,073
1912			730,884	3,007,271		6,874,206	8,869,222	10,299,646	11,854,541	12,439,036	12,907,405	13,088,930	13,488,539
1913			799,099	3,246,655		6,973,518	8,830,396	10,444,529	12,088,412	12,927,428	13,347,721	13,582,036	13,982,811
Average 1909–1913			608,507	2,962,149		6,512,188	8,406,865	9,790,529	11,155,272	11,838,144	12,260,794	12,445,501	12,933,098
1914			480,317	3,393,752		7,619,747	9,826,912	11,668,240	13,073,386	13,972,229	14,443,146	14,915,850	15,905,840
1915			463,883	2,903,829		5,708,730	7,378,886	8,771,275	9,703,612	10,306,309	10,636,778	10,751,990	11,068,173
1916			850,668	4,081,989		7,303,183	8,623,893	9,615,003	10,352,031	10,838,799	11,039,491	11,137,712	11,363,915
1917			614,787	2,511,658		5,573,606	7,185,178	8,571,115	9,713,529	10,131,594	10,434,852	10,570,733	11,248,242
1918			1,038,078	3,770,611		6,811,351	7,777,159	8,706,420	9,571,414	10,281,139	10,773,863	11,048,652	11,906,480
1919			142,625	1,835,214		4,929,104	6,305,054	7,604,320	8,844,368	9,396,646	10,008,920	10,307,120	11,325,532
1920			351,589	2,249,606		5,754,582	7,508,633	8,914,642	10,141,293	10,876,263	11,554,648	12,014,742	13,270,970
Average 1914–1920			563,135	2,963,808		6,242,000	7,800,816	9,121,574	10,199,948	10,828,997	11,270,243	11,535,257	12,298,450
1921			485,787	2,920,392		5,497,364	6,646,354	7,274,201	7,639,961	7,790,656	7,882,356	7,912,452	7,977,778
1922			806,189	3,866,396		6,978,321	8,139,215	8,869,978	9,319,601	9,488,852	9,597,330	9,648,261	9,729,306
1923			1,142,660	3,231,555		6,409,391	7,556,042	8,369,498	9,243,380	9,549,015	9,804,992	9,944,032	10,170,694
1924	21,795	135,901	947,494	[3] 2,665,793	4,527,668	7,615,981	9,715,643	11,162,235	12,237,659	12,792,294		13,306,813	13,639,399
1925 [2]	161,573	576,098	1,887,005	[3] 4,282,459	7,127,609	9,521,788	11,208,872	12,263,998	13,873,384	14,826,452			

Division of Crop and Livestock Estimates. Compiled from reports of Bureau of the Census; quantities are given in running bales, except that round bales are counted as half bales. Linters not included.

[1] Includes cotton ginned after Jan. 16 and estimated quantities not ginned on Mar. 1. Quantities in Table 321 converted from running bales, average weight, by deducting average weight of bagging and ties, by States.

[2] Preliminary.

[3] Sept. 16.

91044°—26——61

TABLE 327.—*Cotton: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	14.9	6.0	1.1	1.0	0.6	3.0	1.4	0.6	28.6	4.2	7.9	(1)	0.1	1.2	42.0
1910	12.2	5.1	.9	2.1	.3	1.6	.1	.3	22.6	4.3	7.5	(1)	.3	.9	35.6
1911	9.8	2.6	(1)	.3	.1	1.6	.3	.7	15.4	.5	7.9	(1)	.2	2.1	26.1
1912	8.1	7.6	1.2	1.0	.6	1.2	.2	.8	20.7	4.3	6.5	.1	.3	.8	32.7
1913	15.2	2.0	.8	1.1	.4	2.4	.5	.7	23.1	.5	8.9	(1)	.4	.8	33.7
1914	7.9	2.9	.5	.9	.4	.6	.1	.5	13.8	.2	9.8	(1)	.2	1.4	25.4
1915	6.8	5.7	1.9	.6	.7	1.1	2.0	.6	19.4	1.9	12.2	(1)	.1	3.2	36.8
1916	9.2	9.1	3.1	.4	.7	.6	2.0	.1	25.2	.9	15.8	(1)	.1	.4	42.4
1917	15.1	1.7	.5	6.0	1.0	.7	.2	.3	25.5	1.3	12.3	(1)	.1	.7	39.9
1918	23.8	.9	.3	.6	.1	2.8	.3	.4	29.2	2.0	8.0	(1)	.1	1.0	40.3
1919	2.7	15.3	1.6	.3	.2	.4	.5	.2	21.2	1.3	18.8	(1)	.2	.4	41.9
1920	2.2	8.8	.8	.8	.2	.1	.2	------	13.1	1.1	24.0	.2	.2	.4	39.0
1921	8.6	4.3	.7	.4	.2	.6	1.2	(1)	16.0	1.0	35.4	------	.1	.4	52.9
1922	10.2	4.9	.8	.1	.3	1.0	.1	.1	17.5	.8	26.7	(1)	.1	.1	45.2
1923	7.2	8.0	.9	.3	.6	.9	.1	------	18.0	.7	26.6	------	.1	.1	45.5
1924	14.0	4.9	.4	.8	.2	.8	.2	(1)	21.3	.8	12.0	.1	.3	.2	34.7

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 328.—*Cotton: Acreage and yield per acre in specified countries, average 1909–10 to 1913–14, annual 1922–23 to 1925–26*

Country	Acreage					Yield of lint per acre				
	Average 1909–10 to 1913–14	1922–23	1923–24	1924–25	1925–26	Average 1909–10 to 1913–14	1922–23	1923–24	1924–25	1925–26
	1,000 acres	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
United States	34,152	33,036	37,123	41,360	45,945	182	141	131	157	182
India	22,503	21,792	23,626	26,461	[1] 27,835	76	93	88	92	87
Egypt	1,743	1,869	1,780	1,856	1,998	398	356	363	379	390
China	------	5,081	4,487	4,848	------	------	218	212	215	------
Brazil	[2] 887	1,512	1,966	1,573	------	------	175	140	184	------
Russia (Asiatic)	1,490	140	397	1,228	1,647	306	188	228	176	248
Mexico	[3] 245	242	279	520	302	------	351	300	274	340
Chosen (Korea)	[3] 146	370	390	422	475	57	133	136	137	138
Uganda	58	334	573	584	------	169	111	79	120	------
Peru	[4] 163	291	286	352	------	------	329	340	280	------
Anglo-Egyptian Sudan	44	62	101	------	------	136	182	192	------	------
Argentina	6	57	155	258	------	243	227	212	125	------
Total countries reporting 1909–24	61,393	59,643	66,575	74,614	------	------	------	------	------	------
Estimated world total excluding China	62,500	61,100	67,700	76,000	------	------	------	------	------	------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Data for crop year as given at the head of the tables are for crops harvested between about August 1 and July 31 of the following year. This applies to both Northern and Southern Hemispheres. For the United States prior to 1914 the figures apply to the harvest year beginning September 1.

[1] Third estimate. In the past 12 years the third estimate has averaged 95 per cent of the final estimate.
[2] Average for three years.
[3] Average for four years.
[4] Average for 1914–15 to 1918–19.

TABLE 329.—*Cotton: Percentage reduction from full yield per acre, due to boll weevil, as reported by crop reporters, 1910–1924*

State	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
North Carolina												3. 58	12. 27	12. 97	7. 49
South Carolina						0. 02	0. 02	0. 01	0. 07	3. 00	13. 26	31. 48	40. 48	26. 95	15. 93
Georgia				0. 10		. 28	3. 44	9. 06	10. 73	19. 36	30. 56	45. 12	44. 28	36. 62	15. 11
Florida			0. 30	11. 80		13. 14	20. 98	27. 07	23. 85	40. 46	32. 10	27. 62	32. 50	32. 53	27. 73
Tennessee				. 10	0. 08	. 04	1. 23	1. 74	. 37	. 17	. 57	7. 21	8. 84	20. 75	2. 38
Alabama	0. 05	0. 20	1. 50	4. 80	6. 02	16. 16	27. 91	28. 88	12. 14	28. 77	36. 03	32. 39	25. 51	32. 52	11. 77
Mississippi	14. 66	5. 10	18. 00	33. 90	24. 14	24. 68	31. 73	22. 22	10. 41	19. 56	32. 25	30. 38	27. 65	30. 82	7. 38
Arkansas	7. 23	2. 00	2. 40	2. 80	2. 93	4. 60	7. 49	8. 96	3. 14	4. 79	9. 41	21. 84	18. 15	15. 87	3. 70
Louisiana	40. 30	11. 40	13. 70	25. 10	17. 66	19. 85	24. 31	11. 89	9. 79	24. 84	25. 99	34. 80	24. 61	23. 25	4. 59
Oklahoma	1. 27	. 20	. 50	. 40	. 79	2. 70	3. 70	4. 35	1. 30	1. 48	8. 81	41. 36	25. 69	19. 33	3. 93
Texas	6. 52	. 90	2. 80	6. 80	7. 86	16. 28	18. 53	7. 26	4. 43	13. 94	19. 90	33. 66	16. 25	9. 96	7. 63
U. S. average [1]	5. 30	1. 28	3. 26	6. 69	5. 91	9. 93	13. 36	9. 34	5. 83	13. 20	19. 95	30. 98	24. 17	19. 50	8. 01

Division of Crop and Livestock Estimates.

[1] Average is weighted and includes cotton States in which there was no damage by boll weevil.

TABLE 330.—*Cotton: Production in specified countries, average 1909–10 to 1913–14, annual 1919–20 to 1925–26*

[Bales of 478 pounds net]

Country	Year beginning about Aug. 1							
	Average 1909–10 to 1913–14	1919–20	1920–21	1921–22	1922–23	1923–24	1924–25	1925–26 preliminary
NORTHERN HEMISPHERE								
NORTH AMERICA								
United States [1]	13, 033, 235	11, 420, 763	13, 439, 603	7, 953, 641	9, 762, 069	10, 139, 671	13, 627, 936	15, 603, 000
Mexico	193, 000	[2 3] 199, 000	[2 3] 188, 000	147, 300	178, 000	175, 000	298, 000	215, 000
Total North American countries	13, 226, 235	11, 619, 763	13, 627, 603	8, 100, 941	9, 940, 069	10, 314, 671	13, 925, 936	15, 818, 000
CENTRAL AND SOUTH AMERICA AND WEST INDIES								
Venezuela	[4] 10, 000						[4] 18, 000	
Guatemala	[5] 144			215	194	125		
Haiti	[6] 8, 910	[7] 15, 229	[7] 9, 132	[7] 21, 553	16, 000			
Dominican Republic	[6] 1, 066	411	150	[7] 405	[7] 374	448		
Porto Rico	[5] 1, 319	2, 201	1, 400	920	1, 046	1, 200	1, 900	
San Salvador						[2 7] 10, 400		
British West Indies:								
Montserrat	657	1, 125	826	768	837	1, 000	460	
St. Kitts-Nevis	1, 347	1, 158	1, 615	732	880	[2] 1, 308	760	
Grenada	703	785	688	534	691	[2] 594	[2] 680	
St. Vincent	1, 026	1, 161	1, 363	523	1, 200	1, 010	1, 109	
Barbadoes	1, 061	211	185	419	832	[2] 857		
Total Central and South American countries and West Indies reporting 1909–1924	5, 052	6, 430	5, 892	3, 477	4, 654	5, 112	4, 909	

[1] Linters not included. Production of linters during this period has been: Average 1909–10 to 1913–14, 502,711 bales; 1919–20, 607,969 bales; 1920–21, 440,313 bales; 1921–22, 397,752 bales; 1922–23, 607,779 bales; 1923–24, 668,600 bales; 1924–25, 897,375 bales.

[2] From an unofficial source.

[3] Laguna and Lower California only.

[4] Estimated annual production according to consular reports.

[5] For one year only.

[6] Average for three years.

[7] Exports.

TABLE 330.—*Cotton: Production in specified countries, average 1909–10 to 1913–14, annual 1919–1920 to 1925–26*—Continued

[Bales of 478 pounds net]

Country	Year beginning about Aug. 1							
	Average 1909–10 to 1913–14	1919–20	1920–21	1921–22	1922–'3	1923–24	1924–25	1925–26 preliminary
NORTHERN HEMISPHERE—Con.								
EUROPE								
Italy	5,212				4,603	5,000	4,520	
Yugoslavia	922		1,037	798	860	670	418	
Greece	[5] 12,614	10,224	6,840	5,986	9,868	13,250	10,600	
Bulgaria	1,073	993	1,212	1,840	3,600	1,800	2,950	2,500
Malta	433	287	238	485	170	100	480	
Spain						1,088	1,270	
Total European countries reporting 1909–1924	14,120	11,504	8,290	8,311	13,638	15,150	14,030	
NORTH AFRICA								
Algeria	[7] 1,370	371	1,107	293	397	800	2,240	7,000
Dahomey	[2] 664	[7] 616	[7] 668	[7] 1,946	[2] 1,273	[2] 2,300		
French Guinea [7]	[5] 230	46	177	114	172			
Ivory Coast [7]	[5] 38	1,551	951	94	109			
French Sudan [7]	[5] 235	71	100	143	647			
French Togo	2,312	5,050	4,552	4,603	4,600			
Italian Somaliland	[7] 510		[7] 2,152	95	1,192	1,760	2,300	
Eritrea	[7] 1,022	[7] 395	[7] 115	[7] 179	690	1,400	2,760	
Egypt	1,453,000	1,155,000	1,251,000	902,000	1,391,000	1,353,000	1,507,000	1,629,000
Anglo-Egyptian Sudan	12,552	18,525	23,506	19,707	23,500	40,600	42,700	92,000
Gold Coast	104	[7] 53	[7] 40	[7] 12	[2] 660	[2] 840	[7] 1,250	
Kenya	519	83	83	418	460	1,000		
Nigeria	9,050	15,264	26,360	13,578	16,388	[2] 15,800	[8] 25,000	30,000
Uganda	20,338	30,568	68,071	31,381	77,680	94,140	146,400	
Total North African countries reporting 1909–1924	1,497,436	1,220,176	1,370,199	967,150	1,510,315	1,506,580	1,727,350	
ASIA								
Cyprus	1,938	1,097	2,024	1,444	1,300	1,507	2,600	
Turkey, Asiatic	133,000			[2] 30,000			78,000	126,000
India	3,585,000	4,853,000	3,013,000	3,733,000	4,247,000	4,320,000	5,069,000	5,064,000
Ceylon	[5] 17	2	8	157	190	190		
Iraq			96	241	250	840	1,700	
Union of Socialist Soviet Republics, Asiatic	953,000	81,000	58,000	43,000	55,000	189,000	[10] 453,000	[10] 853,000
Persia	136,000	94,000	105,000	[4] 95,000	[4] 95,000	[4] 95,000	[4] 95,000	
China [11]	694,600	2,599,000	1,883,000	1,517,000	2,318,000	1,992,900	2,179,000	2,114,000
Japanese Empire:								
Japan	4,704	3,976	4,784	3,447	2,884			
Chosen (Korea)	[6] 17,387	88,469	100,672	92,448	103,347	111,000	121,000	137,000
French Indo-China [7]	14,337	12,598	14,921	11,665	11,088	[2] 14,000		

[2] From an unofficial source.
[5] For one year only.
[7] Exports.
[8] Estimate of exportable surplus reported by the International Institute of Agriculture.
[9] Average for four years.
[10] Turkestan, Transcaucasia, Khiva, Bokhara.
[11] For 1919–20 to 1925–26, Chinese Economic Bulletin quoting the Chinese Cotton Mill Owners' Association. The figures represent the crop in the most timportant producing Provinces where the commercial crop is grown. The average 1909–10 to 1913–14 is the commercial crop of China as estimated by the United States Bureau of the Census.

TABLE 330.—*Cotton: Production in specified countries, average 1909–10 to 1913–14, annual 1919–20 to 1925–26*—Continued

[Bales of 478 pounds net]

Country	Year beginning about Aug. 1							
	Average 1909–10 to 1913–14	1919–20	1920–21	1921–22	1922–23	1923–24	1924–25	1925–26 preliminary
NORTHERN HEMISPHERE—Contd.								
ASIA—continued								
Siam	[7] 3,653	[7] 1,778	[7] 372	3,648	5,000		[2] 2,900	
North Borneo	125	121	232	112	[7] 222	[7] 195		
Total Asiatic countries reporting 1909–1924	5,387,925	7,716,566	5,161,696	5,501,892	6,819,647	6,709,407	7,919,600	
Total Northern Hemisphere countries reporting 1909–1924	20,130,768	20,574,439	20,173,680	14,581,771	18,288,323	18,550,920	23,591,825	
SOUTHERN HEMISPHERE								
Peru	110,000	154,774	175,000	182,000	200,000	203,000	206,000	[2] 194,000
Ecuador				[2] 3,606	[2] 4,311	[2] 11,080	[2] 17,000	
Brazil	375,880	460,515	476,264	504,080	552,991	575,930	605,000	
Paraguay	[5] 120	891	958	2,610	5,800	16,100	12,200	
Argentina	[6] 3,045	16,450	26,411	27,674	26,892	68,785	67,300	
Belgian Congo		3,459	2,122	4,013	4,600	6,800	18,400	
Tanganyika Territory	[9] 7,971	3,410	2,402	6,132	6,000	[2] 9,400	16,000	17,000
Nyasaland	4,536	1,651	2,900	3,285	4,600	2,320	[2] 2,010	
Southern Rhodesia					[2] 1,200		[2] 16,700	
Union of South Africa	[2] 76	2,290	2,338	2,198	[2] 5,460	[2] 7,000	[2] 16,000	
Angola	510	904	2,349	2,067				
Mozambique	[7] 766	997	948	1,041	[2] 2,200	[2] 10,000	[2] 5,000	
Dutch East Indies	13,981	10,769	14,046	14,046	[7] 6,900			
New Hebrides	[8 7] 303	[7] 2,282	3,297	1,617	1,900	1,828		
Australia	91	19	656	2,720	7,500	8,790	14,400	
Total Southern Hemisphere countries reporting 1909–1924	502,485	640,997	687,877	731,740	811,443	901,325	943,910	
Total all countries reporting 1909–1924	20,633,253	21,215,436	20,861,557	15,313,511	19,099,766	19,452,245	24,535,735	
Estimated world total, including China	20,859,000	21,331,000	20,984,000	15,439,000	19,300,000	19,690,000	24,800,000	

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Data for crop year as given at the head of the table, are for crops harvested between about Aug. 1 and July 31 of the following year. This applies to both Northern and Southern Hemispheres. For the United States prior to 1914 the figures apply to the year beginning Sept. 1.

[2] From an unofficial source.
[5] For one year only.
[6] Average for three years.
[7] Exports.
[9] Average for four years.

TABLE 331.—*Cotton: World production, 1909–1925*

Year beginning about Aug. 1	Production in countries reporting all years 1909–1924	Estimated world total excluding China	Estimated world total including China	Estimated world total commercial crop [1]	Five principal producing countries				
					United States	India	Egypt	China [2]	Brazil
	Bales	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*
1909	16,477,415	16,798,000	----------	20,859,000	10,004,949	3,998,000	1,036,000	----------	----------
1910	18,090,234	18,456,000	----------	18,856,000	11,608,616	3,254,000	1,555,000	----------	----------
1911	21,555,477	21,986,000	----------	22,247,069	15,692,701	2,750,000	1,530,000	----------	360,320
1912	20,692,164	21,189,000	----------	21,550,000	13,703,421	3,702,000	1,554,000	----------	417,971
1913	21,837,507	22,345,000	----------	22,612,000	14,156,486	4,239,000	1,588,000	----------	476,823
1914	23,826,707	24,270,000	----------	24,964,000	16,134,930	4,359,000	1,337,000	----------	464,813
1915	17,384,798	17,750,000	----------	18,419,000	11,191,820	3,128,000	989,000	----------	338,690
1916	18,044,989	18,371,000	19,905,000	18,924,000	11,449,930	3,759,000	1,048,000	1,534,000	336,683
1917	17,318,998	17,655,000	19,747,000	18,140,000	11,302,375	3,393,000	1,204,000	2,092,000	413,517
1918	17,293,025	17,625,000	20,678,000	18,755,000	12,040,532	3,328,000	999,000	3,053,000	406,459
1919	18,345,368	18,732,000	21,331,000	20,220,000	11,420,763	4,853,000	1,155,000	2,599,000	460,515
1920	18,617,350	19,101,000	20,984,000	19,665,000	13,439,603	3,013,000	1,251,000	1,883,000	476,264
1921	13,511,808	13,922,000	15,439,000	15,334,000	7,953,644	3,753,000	902,000	1,537,000	504,080
1922	16,423,232	16,982,000	19,300,000	17,959,000	9,762,069	4,247,000	1,391,000	2,318,000	552,991
1923	17,009,791	17,607,000	19,600,000	19,005,000	10,139,671	4,320,000	1,353,000	1,993,000	575,930
1924	21,795,826	22,521,000	24,800,000	23,285,000	13,627,936	5,069,000	1,507,000	2,179,000	605,000
1925 preliminary	----------	----------	----------	----------	15,603,000	5,064,000	1,629,000	2,114,000	----------

Division of Statistical and Historical Research. Bales of 478 pounds net. Data for crop year as given are for crops harvested between about Aug. 1 and July 31 of the following year. This applies to both Northern and Southern Hemispheres. For the United States prior to 1914 the figures apply to the year beginning Sept. 1.

[1] Figures as reported by the United States Bureau of the Census, including "the cotton destined to enter commercial channels for factory purposes." Estimates of the commercial crop in China are included.

[2] Chinese Cotton Mill Owners' Association. Figures represent the crop in the most important cotton producing Provinces where the commercial crop is grown. Cotton in other Provinces is used entirely or almost entirely for home hand-loom consumption.

TABLE 332.—*Cotton: United States, estimated monthly marketings by farmers, 1912–1924*

Year beginning August	Percentage of year's sales [1]												
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Season
1912	----------	17.2	25.8	20.3	12.8	8.0	5.2	4.5	2.6	1.5	1.1	[2] 1.0	100
1913	----------	18.2	24.4	19.7	13.3	8.3	5.3	4.4	2.7	1.5	1.2	[3] 1.0	100
1914	1.2	6.8	14.8	18.0	16.1	11.0	8.3	7.7	6.1	2.5	[3] 7.5	----------	100
1915	2.7	11.3	19.3	20.4	16.4	8.4	5.4	5.2	3.9	3.6	[3] 3.4	----------	100
1916	3.9	14.6	23.0	21.6	15.0	6.4	4.0	3.9	3.0	2.5	1.6	.5	100
1917	2.5	11.3	23.0	22.7	16.2	8.2	5.8	4.5	2.6	1.3	1.0	.9	100
1918	3.3	10.9	18.1	16.4	13.6	5.4	4.4	4.6	4.6	7.5	6.8	4.4	100
1919	1.4	9.5	21.0	22.2	17.4	8.8	5.6	4.9	3.2	2.7	1.7	1.6	100
1920	3.1	10.0	16.2	15.7	11.0	6.4	5.6	6.0	6.7	6.9	6.8	5.6	100
1921	3.6	14.0	22.3	17.1	12.1	5.9	4.3	4.6	4.6	5.9	3.0	2.6	100
1922	5.2	16.8	25.3	19.8	12.8	5.9	4.4	3.7	2.0	1.0	1.5	1.6	100
1923	4.1	16.3	24.6	24.9	13.3	5.8	3.1	2.4	1.7	1.3	.9	1.6	100
1924	3.3	15.2	25.2	22.3	14.5	7.0	5.3	3.4	1.6	1.0	.6	.6	100
Average	2.6	13.1	21.5	19.9	14.2	7.4	5.1	4.7	3.6	3.2	3.0	1.7	100

Division of Crop and Livestock Estimates.

[1] As reported by about 7,500 cotton growers, supplemented by records of State weighers, cooperative associations, and cotton dealers.

[2] Includes August.

[3] Includes July.

TABLE 333.—*Cotton: International trade, average 1910–1914, annual 1923–1925*

[Thousand bales—i. e., 000 omitted]

Country	Year ended June 30							
	Average 1910–1914		1923		1924		1925 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	(1 2)	2 1		21		25		24
Australia						3 4 6		3 11
British India	57	2,154	72	3,012	72	3,000	5 89	5 3,331
Egypt	(1)	1,444	(1)	1,513	(1)	1,469	(1)	1,504
United States	232	8,840	494	5,206	305	5,784	324	8,239
PRINCIPAL IMPORTING COUNTRIES								
Algeria 3	(1)	(1)			4 1		1	
Austria			3 114		128	1	139	1
Austria-Hungary 3	906	12						
Belgium	3 663	6 278	306	64	328	49	333	15
Canada	155		258		180		230	
Ceylon 3					4 5		4	
Cuba	3	(1)	7		6			
Czechoslovakia			3 299		463	2 2	578	26
Denmark	2 26	(1)	24		23		21	
Esthonia 3					4 14		21	
Finland	2 37		34		36		28	
France	1,440	337	1,217	135	1,344	98	1,540	91
Germany	2,142	221	1,024	157	1,121	97	1,467	163
Greece	2 10	(1)			3 4 6		3 10	
Hungary					3 4 11		15	
Italy	902	(1)	930	3	894	2	1,073	3
Japan	2 1,405		3 2,604		3 2,260		3 2,419	
Latvia 3					4 3		5	
Netherlands	2 277	2 145	113	2	78	4	148	2
Norway	2 18		12		12		14	
Poland 3 4					186		214	
Spain	388	1	415	1	328	1	3 343	
Sweden	2 93	2 1	92		96		89	
Switzerland	2 113		3 4 109		2 126		137	
Syria and Lebanon 3						4 7		5
United Kingdom	4,143		2,522		2,742		3,654	
Total 31 countries	13,010	13,434	10,646	10,114	10,768	10,545	12,896	13,415

Division of Statistical and Historical Research. Official sources except where otherwise noted. Bales of 500 pounds gross weight or 478 pounds net. The figures for cotton refer to ginned and unginned cotton and linters, but not to mill waste, cotton batting, scarto (Egyptian and Sudan). Wherever unginned cotton has been separately stated in the original reports it has been reduced to ginned cotton in this statement at the ratio of 3 pounds unginned to 1 pound ginned.

1 Less than 500 bales.
2 Year ended Dec. 31.
3 International Institute of Agriculture.
4 Eleven months.
5 Sea-trade only.
6 Three-year average.

TABLE 334.—*Cotton: Estimated price per pound, received by producers, United States, 1909–1925*

Year beginning August	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	11.5	12.2	13.2	13.8	14.2	14.3	14.0	14.0	14.0	14.1	14.0	14.1	13.6
1910	14.4	13.8	13.6	14.0	14.2	14.4	14.1	13.9	14.0	14.4	14.5	13.8	14.0
1911	12.5	11.0	9.6	8.8	8.6	8.7	9.4	10.0	10.5	11.0	11.1	11.6	9.7
1912	11.6	11.2	11.0	11.4	12.0	12.0	11.8	11.8	11.7	11.6	11.6	11.6	11.5
1913	11.6	12.6	13.2	12.6	12.0	11.8	12.2	12.2	12.0	12.3	12.4	12.4	12.5
Av. 1909–1913	12.3	12.2	12.1	12.1	12.2	12.2	12.3	12.4	12.4	12.7	12.7	12.7	12.3
1914	10.6	8.2	7.0	6.6	6.7	7.0	7.4	7.8	8.6	8.8	8.6	8.4	7.4
1915	8.3	9.8	11.4	11.4	11.4	11.4	11.3	11.3	11.5	11.8	12.4	12.6	11.2
1916	13.6	15.0	16.8	18.8	18.4	17.0	16.4	17.0	18.4	19.6	22.4	24.5	17.7
1917	23.8	23.4	25.3	27.5	28.3	29.3	30.0	31.0	30.2	28.0	28.0	28.2	27.2
1918	30.0	32.0	30.6	28.4	28.2	26.8	24.4	24.2	25.2	27.8	30.3	31.8	28.8
1919	31.4	30.8	33.9	36.0	35.8	36.0	36.2	36.8	37.5	37.4	37.3	37.1	35.0
1920	34.0	28.3	22.4	16.6	12.7	11.6	11.0	9.8	9.4	9.6	9.7	9.7	17.2
Av. 1914–1920	21.7	21.1	21.1	20.8	20.2	19.9	19.5	19.7	20.1	20.4	21.2	21.8	20.6
1921	11.2	16.2	18.8	17.0	16.2	15.9	15.7	16.0	16.0	17.3	19.6	20.6	16.9
1922	20.9	20.6	21.2	23.1	24.2	25.2	26.8	28.0	27.6	26.2	25.9	24.8	23.5
1923	23.8	25.6	28.0	29.9	32.1	32.5	31.4	27.7	28.7	28.1	27.8	27.3	29.0
1924	27.8	22.2	23.1	22.5	22.2	22.7	23.0	24.5	23.7	23.0	23.0	23.4	23.0
1925	23.4	22.5	21.5	18.1	17.4								

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, August, 1909–December, 1923.

TABLE 335.—*Cotton: Estimated price per pound, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Missouri	11.6	6.5	11.0	19.0	27.5	27.0	34.0	15.5	19.8	15.0	21.5	32.5	23.0	12.0	20.8
Virginia	12.2	7.3	11.4	19.4	27.8	26.5	35.0	15.0	20.3	16.4	23.0	32.0	23.0	19.0	22.7
North Carolina	12.3	6.9	11.2	19.4	27.7	26.4	35.2	14.5	20.2	16.4	24.5	30.8	22.6	19.0	22.7
South Carolina	12.4	6.9	11.3	19.6	28.4	27.6	35.7	14.5	20.6	16.0	24.3	32.0	22.1	18.8	22.6
Georgia	12.5	6.9	11.4	19.9	28.8	27.5	35.8	15.3	20.8	16.6	23.9	32.0	22.4	19.0	22.8
Florida	17.0	12.2	14.8	31.0	50.5	43.0	42.0	17.0	30.1	18.0	23.0	28.8	22.5	18.8	22.2
Tennessee	12.3	6.4	11.3	19.5	27.3	26.7	33.5	15.0	19.7	16.0	24.5	32.0	23.2	16.2	22.4
Alabama	12.4	6.7	11.1	19.5	28.0	27.0	34.8	15.0	20.3	16.0	24.0	31.8	22.7	18.9	22.7
Mississippi	12.6	6.8	11.5	20.5	28.5	27.8	37.5	15.3	21.1	16.6	24.1	32.5	23.7	19.5	23.3
Arkansas	12.2	6.6	11.6	19.6	28.2	27.8	36.4	13.3	20.5	16.1	23.6	31.9	22.8	16.1	22.1
Louisiana	12.0	6.9	11.2	19.1	26.7	27.5	35.0	14.2	20.1	15.0	24.0	30.3	22.4	18.1	22.0
Oklahoma	11.4	6.5	11.3	19.0	26.5	25.5	35.2	10.5	19.2	15.4	23.0	28.6	22.2	17.0	21.4
Texas	11.8	6.8	11.1	19.4	26.7	28.2	35.0	13.2	20.1	16.1	23.5	30.4	22.4	18.5	22.2
Arizona						48.0	51.0	30.0		27.0	30.0	34.0	26.4	21.5	27.8
California		7.0	11.2	20.0	28.0	30.0	46.0	30.0	24.2	17.0	26.0	32.0	24.0	22.0	24.2
United States	12.2	6.8	11.3	19.6	27.7	27.6	35.6	13.9	20.4	16.2	23.8	31.0	22.6	18.2	22.4

Division of Crop and Livestock Estimates.

TABLE 336.—*Cotton, middling: Average spot price per pound at New Orleans, 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	12.28	12.66	13.48	14.40	14.96	15.23	14.88	14.74	14.64	14.89	14.85	14.93	14.33
1910	14.92	13.49	14.21	14.50	14.85	14.95	14.62	14.54	14.70	15.48	15.26	14.30	14.65
1911	11.96	11.29	9.61	9.35	9.17	9.53	10.31	10.65	11.61	11.72	12.07	12.93	10.85
1912	12.07	11.37	10.95	12.15	12.81	12.58	12.51	12.45	12.44	12.29	12.44	12.34	12.20
1913	12.02	13.11	13.73	13.26	12.98	12.93	12.90	12.95	13.11	13.36	13.79	13.34	13.12
Average 1909–1913	12.65	12.38	12.40	12.73	12.95	13.04	13.04	13.07	13.30	13.55	13.68	13.57	13.03
1914	[1]	[2] 8.42	7.02	7.43	7.18	7.87	8.01	8.34	9.43	9.04	9.12	8.71	
1915	8.94	10.40	11.95	11.50	11.89	12.04	11.45	11.73	11.88	12.61	12.80	13.03	11.68
1916	14.26	15.27	17.24	19.45	18.34	17.33	17.14	17.94	19.51	20.06	24.18	25.41	18.84
1917	25.07	21.38	26.76	28.07	29.07	31.07	30.91	32.76	33.05	28.90	30.71	29.50	28.96
1918	30.23	33.22	31.18	29.75	29.44	28.84	26.97	26.84	26.70	29.22	32.09	33.93	29.87
1919	31.38	30.38	35.28	39.58	39.89	40.28	39.39	40.69	41.41	40.31	40.49	39.41	38.21
1920	34.03	27.48	20.95	17.65	14.59	14.53	12.85	11.08	11.17	11.80	11.03	11.49	16.55
Average 1914–1920		20.98	21.48	21.92	21.49	21.71	20.96	21.34	21.88	21.71	22.92	23.07	
1921	12.78	19.35	18.99	17.27	17.16	16.53	16.36	16.74	16.80	19.31	21.68	22.01	17.92
1922	21.55	20.74	22.05	25.34	25.48	27.51	28.78	30.43	28.42	26.63	28.61	25.73	25.94
1923	24.22	27.71	29.18	33.68	34.88	33.93	31.90	28.74	30.41	30.70	29.43	29.23	30.33
1924	26.65	22.79	23.48	23.95	23.66	23.66	24.61	25.52	24.52	23.54	24.07	24.05	24.21
1925	23.07	23.09	20.86	19.82	19.27								

Division of Statistical and Historical Research. Prior to August 16, 1915, compiled from quotations in Market Reports of the New York Cotton Exchange, except September 23 to November 16, 1914, when the Exchange was closed, quotations for which time were taken from the New York Commercial and Financial Chronicle; from August 16, 1915, compiled from daily reports of the Cotton Division; average of daily closing quotations.

[1] Market closed. [2] No quotations prior to Sept. 23. Average for 7 days' business.

TABLE 337.—*Cotton, middling: Average spot price per pound at nine markets, 1914–1925*

NORFOLK

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1914							7.89	8.33	9.38	9.12	8.97	8.43	
1915	8.77	10.30	11.87	11.39	11.76	11.92	11.53	11.63	11.76	12.61	12.83	13.04	11.62
1916	14.32	15.39	17.40	19.37	17.87	17.50	16.54	18.41	19.73	20.09	24.33	25.21	18.85
1917	25.33	21.92	26.99	28.35	29.18	30.47	30.36	32.42	32.99	29.26	28.95	29.59	28.82
1918	31.51	33.28	30.23	27.59	27.83	26.23	24.38	25.27	25.87	28.32	31.18	33.18	28.74
1919	30.79	29.58	33.70	37.47	37.99	38.84	38.60	39.20	40.11	40.50	40.50	40.50	37.32
1920	37.00	29.06	21.23	17.34	14.46	14.85	12.89	11.37	11.20	11.60	10.76	11.31	16.92
1921	12.57	19.10	18.66	17.12	17.28	16.96	16.83	17.27	17.12	19.46	21.44	22.17	18.00
1922	21.50	20.99	22.48	25.40	25.44	27.59	28.75	30.08	28.13	26.22	27.89	25.96	25.87
1923	24.20	27.79	28.65	33.16	34.18	33.65	31.79	28.41	30.37	30.37	29.31	29.91	30.15
1924	27.31	23.08	23.56	23.85	23.59	23.68	24.65	25.50	24.43	23.85	24.20	24.89	24.38
1925	23.39	23.39	20.86	19.87	19.18								

AUGUSTA

1914							7.90	8.27	9.40	9.17	8.92	8.56	
1915	8.55	10.22	11.88	11.47	11.73	11.95	11.49	11.66	11.74	12.54	12.65	12.79	11.66
1916	14.18	15.31	17.70	19.61	18.64	17.76	16.46	18.74	20.08	20.41	24.60	25.32	19.07
1917	24.59	21.63	26.93	28.42	29.37	31.16	31.15	33.44	33.08	28.61	30.45	29.34	29.01
1918	31.14	32.88	30.46	27.98	28.24	27.33	25.43	26.17	26.78	28.96	31.55	33.59	29.21
1919	30.72	29.41	34.72	38.34	38.46	39.67	38.48	40.04	41.06	41.44	42.13	40.65	37.93
1920	35.03	28.17	21.60	17.75	14.62	14.46	12.67	10.82	11.00	11.36	10.62	11.29	16.62
1921	12.83	19.49	18.74	16.93	17.17	16.74	16.60	17.09	16.88	19.30	21.49	22.38	17.97
1922	21.55	20.93	22.38	25.18	25.46	27.66	28.78	30.07	28.14	26.84	28.15	25.84	25.93
1923	24.63	27.76	28.75	33.16	34.28	33.55	31.61	28.73	30.08	30.06	29.19	28.94	30.06
1924	27.08	22.72	23.29	23.77	23.44	23.50	24.45	25.30	24.48	23.75	24.44	24.68	24.24
1925	23.14	23.10	20.50	19.64	19.06								

TABLE 337.—*Cotton, middling: Average spot price per pound at nine markets, 1914–1925*—Continued

SAVANNAH

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aver-age
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1914							8.14	8.36	9.29	9.36	9.03	8.66	
1915	8.62	10.24	11.95	11.60	12.11	12.20	11.79	11.90	11.90	12.61	12.75	13.00	11.72
1916	14.21	15.40	17.54	19.69	19.27	18.45		18.82	20.15	20.62	24.83	25.95	
1917	25.20	21.87	27.05	28.26	29.28	31.12	30.94	32.53	33.42	31.50	30.24	30.10	29.29
1918	31.22	32.91	30.53	29.43	29.52	31.00	27.00	27.04	26.96	29.11	31.92	33.61	30.02
1919	31.64	29.66	34.56	38.45	38.91	39.89	39.43	40.31	41.60	41.53	41.74	40.87	38.22
1920	34.69	28.74	22.12	18.38	15.68	15.62	13.95	11.75	11.48	11.83	10.90	11.31	17.20
1921	12.74	19.64	19.30	17.17	17.39	17.06	16.72	17.36	17.04	19.39	21.52	22.09	18.12
1922	21.29	20.88	22.37	25.19	25.61	27.58	28.75	30.11	28.16	26.44	28.29	25.74	25.87
1923	24.45	27.85	28.77	33.09	34.18	33.38	31.54	28.27	30.03	30.14	29.13	29.12	30.00
1924	26.74	22.89	23.59	24.00	23.70	23.68	24.58	25.46	24.39	23.42	24.22	24.52	24.27
1925	23.19	23.19	20.70	19.76	19.20								

MONTGOMERY

1914							7.70	8.04	9.04	8.82	8.70	8.38	
1915	8.42	10.02	11.74	11.27	11.65	11.75	11.32	11.37	11.52	12.28	12.46	12.69	11.37
1916	13.92	15.21	17.43	19.34	18.33	17.78	16.81	18.64	19.88	20.14	24.06	24.82	18.86
1917	24.67	21.47	26.98	28.43	29.49	31.28	31.30	33.36	33.88	29.48	29.80	29.63	29.15
1918	30.75	32.39	30.24	28.56	28.19	28.48	27.00	25.98	26.81	28.54	31.10	33.36	29.28
1919	30.68	29.20	34.26	38.16	38.26	39.29	38.39	39.41	40.90	40.67	40.88	40.15	37.52
1920	36.38	27.84	21.24	17.97	14.40	13.86	12.32	10.39	10.53	10.89	10.09	10.53	16.37
1921	11.89	18.73	18.46	16.68	16.92	16.46	16.18	16.55	16.15	18.66	21.08	22.05	17.43
1922	21.28	20.17	21.75	24.86	25.02	27.05	28.61	29.81	27.85	25.97	27.86	25.70	25.49
1923	24.23	27.61	28.68	32.87	34.00	33.34	31.50	28.34	29.81	29.78	28.95	28.67	29.82
1924	26.36	22.05	22.67	23.09	22.76	23.04	23.97	24.75	24.10	23.54	24.08	24.09	23.71
1925	22.59	22.47	20.13	19.10	18.60								

MEMPHIS

1914							7.87	8.26	9.24	9.17	8.99	8.69	
1915	8.91	10.32	12.15	11.55	12.12	12.29	11.79	11.82	12.00	12.81	13.07	13.15	11.83
1916	14.35	15.56	17.40	19.60	18.96	17.88	17.00	18.17	19.97	20.34	24.02	25.75	19.08
1917	25.96	22.97	27.54	28.91	29.57	31.07	31.36	32.82	33.57	30.08	30.00	30.00	29.49
1918	30.98	33.89	31.56	30.17	29.42	29.29	27.18	26.86	26.90	29.08	32.16	33.80	30.11
1919	33.48	30.96	35.94	41.17	39.88	40.35	39.22	40.04	41.69	41.31	40.73	39.60	38.70
1920	36.35	31.00	21.68	18.28	14.75	14.46	13.48	11.65	11.25	11.63	11.06	10.82	17.20
1921	12.17	19.46	19.71	18.27	18.15	17.80	17.01	17.28	17.00	19.19	21.79	22.72	18.38
1922	22.07	21.19	22.09	25.31	25.80	27.68	28.74	30.63	29.02	26.89	28.58	26.51	26.21
1923	24.08	27.73	29.28	33.54	34.67	34.07	32.31	28.92	30.35	30.64	30.05	29.42	30.42
1924	27.37	23.10	23.24	23.55	23.61	23.54	24.29	25.56	24.40	23.34	24.00	24.28	24.19
1925	23.69	23.26	21.50	20.20	19.17								

LITTLE ROCK

1914							7.67	8.15	9.04	9.07	8.89	8.58	
1915	8.61	10.08	12.32	11.68	12.15	12.28	11.94	11.88	12.25	12.80	12.96	13.07	11.84
1916	14.27	15.26	17.33	19.58	18.80	17.70	16.81	17.89	19.71	19.99	23.90	25.42	18.89
1917	25.49	22.14	26.72	28.26	29.55	31.02	30.96	32.53	33.32	30.00	29.28	29.35	29.05
1918	30.73	33.99	31.70	30.11	29.37	28.20	26.45	26.83	26.40	28.33	31.34	33.55	29.75
1919	31.73	30.31	35.32	40.08	39.94	39.98	39.10	40.19	42.57	41.45	40.31	39.60	38.38
1920	34.89	28.28	21.38	18.23	14.96	14.45	13.35	11.49	10.63	11.35	10.68	10.58	16.69
1921	11.81	19.60	19.75	18.12	17.84	17.57	16.90	16.89	16.87	18.90	21.17	22.07	18.12
1922	21.47	20.76	21.80	25.22	25.53	27.15	28.46	30.02	28.24	26.41	27.88	26.39	25.78
1923	24.20	27.64	29.10	33.55	34.41	33.94	31.76	28.70	30.15	30.20	29.50	29.48	30.22
1924	27.11	22.55	23.24	23.33	23.34	23.62	24.57	25.59	24.82	23.69	24.52	24.86	24.27
1925	23.51	23.44	21.40	20.30	19.56								

TABLE 337.—*Cotton, middling: Average spot price per pound at nine markets, 1914–1925*—Continued

DALLAS

Year beginning August	Aug	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1914							7.87	8.25	9.15	8.71	8.57	8.25	
1915	8.56	10.17	11.72	11.13	11.73	11.84	11.37	11.63	11.78	12.47	12.72	13.04	11.51
1916	14.14	14.83	16.81	19.18	17.63	17.17	15.75	17.77	19.09	19.58	24.17	25.04	18.43
1917	24.86	21.88	26.16	27.46	28.53	30.74	30.71	32.56	31.32	28.85	29.76	28.79	28.47
1918	31.09	33.34	30.89	28.78	29.33	27.72	25.84	25.68	27.02	29.75	32.10	34.16	29.64
1919	31.05	30.60	36.65	40.58	41.11	42.08	41.26	42.79	42.78	40.60	39.64	38.30	38.95
1920	32.74	26.40	20.69	17.08	13.70	13.63	12.16	10.64	10.53	11.20	10.23	10.50	15.79
1921	12.11	19.25	19.17	17.10	17.12	16.75	16.44	16.93	16.70	19.08	21.37	22.05	17.84
1922	21.19	20.14	21.67	24.75	24.79	26.68	27.86	29.88	27.79	25.87	27.72	25.34	25.31
1923	23.49	27.05	28.51	32.92	33.94	33.25	31.14	27.89	29.84	29.88	28.84	29.20	29.66
1924	27.33	22.11	22.73	22.95	22.74	23.10	24.32	25.47	24.37	23.28	23.93	24.56	23.91
1925	23.28	23.38	21.13	20.02	19.15								

HOUSTON

1914							8.33	8.80	9.82	9.21	9.06	8.68	
1915	9.04	10.56	12.11	11.62	12.27	12.36	11.82	12.09	12.27	12.99	13.26	13.60	12.00
1916	14.79	15.39	17.42	19.80	18.10	17.64	16.05	18.18	19.43	20.13	24.60	25.54	18.92
1917	25.67	22.62	26.62	27.87	28.77	31.25	30.91	32.94	31.80	28.06	30.91	28.75	28.85
1918	31.26	33.70	32.05	30.01	30.26	28.56	27.00	26.43	27.33	30.18	32.04	34.24	30.26
1919	31.65	31.36	36.88	40.79	40.74	41.72	39.95	41.58	42.33	40.67	39.54	38.10	38.78
1920	32.94	27.33	20.98	17.56	14.16	13.95	12.62	10.95	10.89	11.85	11.02	11.69	16.33
1921	13.06	20.02	19.64	17.65	17.73	17.20	17.05	17.51	17.24	19.67	22.18	22.51	18.46
1922	21.59	20.69	22.20	25.33	25.45	27.51	28.71	30.54	28.59	26.65	28.42	25.62	25.94
1923	24.23	27.78	29.00	33.46	34.63	33.85	31.79	28.60	30.55	30.61	29.55	29.29	30.28
1924	27.69	23.03	23.53	23.92	23.55	23.71	24.88	26.03	25.04	23.82	24.11	24.70	24.50
1925	23.71	23.33	21.20	20.23	19.78								

GALVESTON

1915	9.15	10.59	12.20	11.66	12.30	12.39	11.89	12.14	12.30	12.98	13.36	13.71	12.06
1916	14.77	15.48	17.48	19.82	18.43	17.79	16.30	18.31	19.63	20.18	24.58	25.99	19.06
1917	25.70	22.66	26.82	28.07	29.11	31.28	31.10	33.06	32.23	28.40	30.89	29.37	29.06
1918	31.56	34.19	32.25	30.30	30.64	29.45	28.26	26.94	27.63	30.59	32.87	34.62	30.78
1919	31.87	31.58	37.10	41.32	41.87	42.53	41.09	42.56	42.99	41.64	39.83	38.59	39.41
1920	33.78	28.15	21.98	18.10	15.00	14.38	12.99	11.76	11.47	12.01	11.27	11.80	16.89
1921	13.33	20.33	20.05	17.99	17.92	17.32	17.10	17.58	17.40	19.75	22.23	22.67	18.64
1922	21.79	20.77	22.28	25.37	25.48	27.54	28.81	30.52	28.63	26.75	28.57	25.87	26.03
1923	24.44	27.80	29.11	33.62	34.70	33.95	31.92	28.85	30.91	30.82	29.74	29.94	30.48
1924	28.01	23.12	23.56	23.92	23.59	23.72	24.78	26.00	25.04	23.92	24.34	24.83	24.57
1925	23.88	23.50	21.26	20.24	19.80								

Division of Statistical and Historical Research. Compiled from reports of the Cotton Division, average of daily closing quotations.

TABLE 338.—*Cotton, middling: Monthly average spot price per pound, New York, 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	12.75	13.00	13.99	14.77	15.25	14.87	14.84	15.05	15.10	15.45	15.10	15.74	14.66
1910	16.27	13.96	14.48	14.77	15.07	14.90	14.30	14.51	14.87	15.80	15.48	13.99	14.87
1911	12.53	11.31	9.63	9.43	9.37	9.55	10.34	10.63	11.57	11.62	11.65	12.57	10.85
1912	12.04	11.73	11.12	12.36	13.01	13.07	12.80	12.61	12.29	11.98	12.25	12.26	12.29
1913	12.14	13.44	14.08	13.68	13.04	12.72	12.83	13.27	13.23	13.44	13.47	13.17	13.21
Average 1909–1913	13.15	12.69	12.66	13.00	13.15	13.02	13.02	13.21	13.41	13.66	13.59	13.55	13.18
1914	(1)	(1)	(1)	[2] 7.67	7.53	8.28	8.54	9.01	10.25	9.81	9.68	9.22	------
1915	9.41	10.83	12.37	11.89	12.33	12.33	11.73	11.90	12.05	12.94	12.97	13.05	11.98
1916	14.64	15.79	17.99	19.92	18.29	17.59	15.90	18.46	20.38	20.74	25.33	26.30	19.28
1917	25.49	23.05	28.02	29.78	30.74	32.26	31.76	33.74	31.85	27.57	30.39	31.54	29.68
1918	33.88	35.09	32.42	29.69	30.22	29.10	26.27	27.74	28.82	30.58	32.96	35.33	31.01
1919	32.10	30.60	34.98	39.40	39.19	39.26	38.77	41.20	42.30	41.25	39.27	41.20	38.29
1920	36.23	30.07	22.68	18.81	15.68	16.63	13.44	11.74	12.14	12.84	12.00	12.41	17.89
Average 1914–1920	------	------	------	22.45	22.00	22.21	20.92	21.97	22.54	22.25	23.23	24.15	------
1921	13.79	19.95	19.63	18.01	18.30	17.94	17.90	18.32	18.06	20.75	22.10	22.27	18.92
1922	21.86	21.35	22.73	25.64	25.65	27.55	28.63	30.55	28.88	27.20	28.52	26.26	26.24
1923	25.20	29.06	30.06	34.73	35.92	34.19	31.88	28.39	30.30	31.54	29.96	32.07	31.11
1924	29.02	24.24	24.51	24.22	23.85	23.98	24.70	25.64	24.54	23.41	24.13	24.68	24.74
1925	23.72	23.79	21.77	20.94	20.06	------	------	------	------	------	------	------	------

Division of Statistical and Historical Research. Prior to September, 1900, compiled from the New York Commercial and Financial Chronicle; September, 1900, to date compiled from Market Reports of the New York Cotton Exchange, average of daily closing quotations.

[1] Cotton Exchange closed on account of the war.
[2] Cotton Exchange opened on Nov. 16. Quotations cover only half month.

TABLE 339.—*Cotton: Average closing price per pound for future delivery, New York, 1924 and 1925*

Year and month	Prices for delivery during—						Year and month	Prices for delivery during—					
	Jan.	Mar.	May	July	Oct.	Dec.		Jan.	Mar.	May	July	Oct.	Dec.
1924							1925						
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*		*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
January	[1] 33.65	33.80	34.02	32.91	28.13	[2] 27.68	January	23.59	23.74	24.05	24.25	23.85	[1] 23.79
February	[2] 26.44	31.56	31.85	30.76	27.17	[1] 26.74	February	24.69	24.43	24.76	25.01	24.78	24.83
March	[1] 24.47	28.35	28.32	27.68	25.17	[1] 24.82	March	[1] 24.93	25.46	25.48	25.72	25.12	25.12
April	24.04	[2] 24.06	29.98	28.55	24.91	24.36	April	24.15	[2] 24.30	24.28	24.57	24.29	24.40
May	24.38	[2] 24.49	30.82	28.89	25.44	24.66	May	22.38	22.61	22.92	22.95	22.55	22.75
June	24.81	[1] 24.95	[1] 24.99	28.76	25.76	25.04	June	[2] 22.77	23.04	[1] 23.23	23.37	23.08	23.25
July	25.52	25.75	[1] 25.85	30.65	26.41	25.64	July	23.68	23.99	24.23	23.67	24.13	24.25
August	25.94	26.20	26.35	[2] 25.68	26.52	26.00	August	23.08	23.37	23.69	[2] 23.49	23.36	23.58
September	23.06	23.32	23.55	[1] 23.14	23.60	23.06	September	23.18	23.46	23.75	[1] 23.48	23.52	23.82
October	23.59	23.90	24.11	23.75	24.50	23.49	October	20.67	20.95	21.12	20.73	22.02	21.39
November	23.93	24.25	24.54	24.40	[1] 23.30	23.74	November	19.78	19.88	19.63	19.16	18.82	20.42
December	23.42	23.81	24.16	24.29	23.59	23.12	December	19.15	19.23	18.91	18.56	18.10	20.16

Division of Statistical and Historical Research. Compiled from Market Reports of the New York Cotton Exchange; average of daily closing quotations. 1924 Yearbook Table 316, contains prices for 1901–1924

[1] Quotations largely nominal.
[2] Based on nominal quotations

TABLE 340.—*Cotton: Average spot price per pound in specified foreign markets, 1912–1925*

LIVERPOOL, AMERICAN MIDDLING [1]

Year	Jan.	Feb	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1912	11.16	11.90	12.34	13.09	13.03	13.37	14.46	13.83	13.55	12.59	13.82	14.31	13.12
1913	14.06	13.97	13.97	14.00	13.58	13.67	13.61	13.38	15.10	15.55	14.94	14.54	14.20
1914	14.34	14.25	14.28	15.02	15.20	15.71	14.74	13.23	12.22	10.53	9.25	8.93	13.14
1915	9.77	10.06	10.46	11.37	10.42	10.47	10.32	10.79	12.24	13.90	13.74	15.03	11.55
1916	15.99	15.61	15.48	15.47	16.77	16.47	15.94	17.54	18.99	20.69	23.05	22.16	17.85
1917	21.76	21.34	24.07	25.23	26.17	34.07	37.65	38.21	35.96	34.85	43.38	44.25	32.24
1918	46.16	45.88	47.19	46.52	42.28	43.89	43.09	45.26	48.44	46.46	43.97	42.30	45.12
1919	37.66	34.53	30.39	33.24	35.70	38.25	38.33	34.06	32.20	38.06	41.99	40.92	36.28
1920	43.61	41.61	45.16	44.17	42.51	44.48	41.83	38.31	31.33	24.41	19.18	14.74	35.94
Average 1914–1920	27.04	26.18	26.72	27.29	27.01	29.05	28.84	28.20	27.34	26.99	27.79	26.90	27.45
1921	15.32	12.71	11.78	12.07	12.53	11.66	11.94	13.34	20.70	20.85	18.46	18.84	15.02
1922	18.12	17.75	19.21	18.89	21.42	23.46	24.98	24.90	23.98	24.55	27.96	28.26	22.79
1923	30.64	30.93	31.42	30.29	28.43	31.53	29.28	28.18	31.99	31.96	35.74	36.00	31.37
1924	34.33	32.53	29.77	33.15	32.00	30.74	30.38	31.62	25.06	26.13	26.09	25.73	29.79
1925	25.90	27.17	27.95	26.85	25.83	27.34	27.76	26.28	26.25	23.17	21.51	20.51	25.54
Average 1921–1925	24.86	24.22	24.03	24.25	24.04	24.95	24.87	24.86	24.60	25.33	25.95	25.88	24.90

LIVERPOOL, EGYPTIAN UPPERS, GOOD [1]

1912	18.0	16.9	17.6	19.3	19.5	21.3	21.3	20.2	19.1	18.3	18.9	19.3	19.1
1913	19.9	20.1	20.2	20.3	20.2	19.7	19.0	18.8	20.0	20.2	20.0	19.5	19.8
1914	18.9	17.9	17.3	17.9	18.1	18.2	17.6	16.5	16.1	13.5	12.6	12.2	16.4
1915	12.2	12.8	14.0	15.5	14.5	14.4	13.8	14.1	15.4	18.1	17.9	18.6	15.1
1916	21.9	22.5	22.4	21.6	22.4	23.5	23.7	23.7	27.2	31.2	39.5	39.6	26.6
1917	39.7	41.9	44.5	50.5	52.0	55.4	60.3	60.9	52.0	46.7	51.6	54.4	50.8
1918	53.8	51.5	54.9	56.3	54.0	52.6	54.4	55.8	55.4	54.3	51.7	50.4	53.8
1919	50.3	50.0	49.3	48.3	48.3	48.4	46.4	48.8	48.8	53.4	67.0	76.3	52.9
1920	94.0	105.0	108.7	107.6	97.1	81.3	71.6	68.6	53.4	37.0	29.4	23.4	73.1
Average 1914–1920	41.5	43.1	44.4	45.4	43.8	42.0	41.1	41.2	38.3	36.3	38.5	39.3	41.2
1921	24.6	20.8	19.6	21.5	18.8	18.8	18.0	18.6	29.3	33.3	28.3	29.4	23.4
1922	28.8	27.4	28.4	26.8	28.1	29.7	29.4	28.1	27.4	27.3	30.7	31.2	28.6
1923	31.9	32.5	33.9	33.0	30.4	31.9	31.0	31.5	33.4	33.5	39.6	41.5	33.7
1924	39.7	39.0	37.5	41.2	43.9	43.3	43.6	45.6	35.5	34.3	35.4	37.5	39.7
1925	40.3	41.3	45.1	43.6	42.1	41.6	41.4	39.5	37.1	35.0	32.6	30.8	39.2
Average 1921–1925	33.1	32.2	32.9	33.2	32.7	33.1	32.7	32.7	32.5	32.7	33.3	34.1	32.9

LIVERPOOL, NO. 1 OOMRAS, FULLY GOOD [1]

1912	10.3	10.8	10.9	11.3	11.6	11.7	12.3	12.2	11.9	11.6	12.1	12.5	11.6
1913	12.7	12.8	12.7	12.5	12.2	11.9	11.8	11.6	12.9	12.9	12.8	12.5	12.4
1914	12.0	11.5	11.5	11.5	11.4	11.0	10.6	9.7	9.1	8.8	7.9	7.7	10.2
1915	8.5	8.4	8.5	9.2	8.9	9.1	8.9	9.1	9.7	10.9	10.7	11.9	9.5
1916	12.6	12.4	12.1	11.9	13.0	12.8	12.9	14.2	15.0	15.8	17.6	16.6	13.9
1917	16.9	17.3	20.2	21.0	22.1	31.2	33.4	34.2	31.9	36.9	37.6	37.2	28.3
1918	38.2	37.6	38.2	38.2	35.2	36.8	36.8	37.8	44.1	42.4	37.5	34.3	38.1
1919	35.3	32.6	27.7	28.9	30.1	32.4	32.2	30.7	29.0	30.5	32.1	32.0	31.1
1920	32.6	30.0	32.3	31.8	30.2	29.1	26.1	23.8	21.6	18.5	15.7	12.0	25.3
Average 1914–1920	22.3	21.4	21.5	26.8	21.6	23.9	23.0	22.8	22.9	23.3	22.7	21.7	22.4
1921	11.9	10.6	9.2	9.4	9.8	9.2	9.3	10.5	16.0	16.9	15.3	15.4	12.0
1922	15.3	14.9	15.4	16.0	15.7	18.9	19.7	19.8	18.9	18.8	20.6	20.5	17.9
1923	21.9	22.2	21.7	20.7	19.4	20.8	20.2	19.6	21.8	22.0	25.9	27.7	22.0
1924	26.1	25.2	22.4	24.0	22.9	22.6	22.0	23.4	19.7	22.3	23.3	23.5	23.1
1925	22.6	23.5	23.2	22.2	21.2	21.6	22.0	21.5	22.0	19.9	18.1	16.8	21.2
Average 1921–1925	19.6	19.3	18.4	18.5	17.8	18.6	18.6	19.0	19.7	20.0	20.6	20.8	19.2

[1] London Economist, average of weekly quotations to August, 1925, inclusive. Subsequently from Liverpool Cotton Association Daily Report.

[1] International Yearbook of Agricultural Statistics, 1921, p. 443. London Economist, 1922 to date. Average of weekly quotations.

TABLE 340.—*Cotton: Average spot price per pound in specified foreign markets, 1912–1925*—Continued

ALEXANDRIA, EGYPT, EGYPTIAN UPPERS, GOOD [2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec	Aver-age
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1912	15.8	16.6	16.8	17.6	18.1	18.9	19.4	18.5	17.2	15.8	17.0	18.1	17.5
1913	18.6	18.7	19.0	19.4	19.0	18.5	18.2	17.8	18.5	18.6	18.6	18.0	18.6
1914	17.4	17.0	16.4	17.0	16.8	16.7	16.3	(3)	(3)	9.6	11.2	10.5	14.9
1915	11.1	11.9	13.0	14.3	13.2	13.1	12.5	12.6	(3)	(3)	16.2	(3)	14.1
1916	19.2	21.1	21.0	20.3	20.6	21.4	20.7	20.6	23.3	27.5	34.5	35.4	24.2
1917	35.1	37.3	39.6	48.7	49.3	51.7	60.1	45.1	29.6	32.4	35.6	38.5	41.9
1918	37.9	36.6	38.0	38.3	36.5	37.6	40.5	(3)	(3)	(3)	(3)	(3)	------
1919	(3)	(3)	(3)	(3)	(3)	(3)	(3)	47.1	42.6	45.6	60.5	71.9	------
1920	85.2	94.6	87.2	94.0	82.7	69.8	61.2	54.9	41.9	32.5	24.2	19.5	62.3
1921	19.9	15.1	16.3	16.3	15.3	14.2	14.9	14.9	25.7	30.9	26.0	27.3	19.8
1922	25.3	23.3	22.9	22.7	24.7	26.7	26.1	25.0	23.3	24.1	26.7	27.0	24.1
1923	28.8	30.0	31.3	30.4	28.2	30.1	29.4	29.2	30.0	30.4	35.8	38.4	30.9
1924	38.8	37.9	35.2	39.2	41.8	39.4	38.4	36.1	28.5	29.5	31.4	34.3	35.1
1925	38.1	40.0	44.2	41.2	39.7	39.6	39.8	34.8	32.3	31.2	29.6		
Average 1921–1925	30.2	29.3	30.0	30.0	29.9	30.0	29.7	28.0	28.0	29.2	29.9	...	...

Division of Statistical and Historical Research. Conversions at monthly average rates of exchange as quoted by International Institute of Agriculture Annual, 1921, and Federal Reserve Board.

[2] Monthly Agricultural Statistics, Ministry of Finance, Cairo, Egypt.
[3] No quotations.

COTTONSEED

TABLE 341.—*Cottonseed: Production, 1909–1925*

[Thousand short tons—i. e., 000 omitted]

Year beginning August	Production	Year beginning August	Production	Year beginning August	Production
1909	4,462	1915	4,992	1921	3,531
1910	5,175	1916	5,113	1922	4,336
1911	6,997	1917	5,040	1923	4,502
1912	6,104	1918	5,360	1924	6,051
1913	6,305	1919	5,074	1925 [1]	6,928
1914	7,186	1920	5,971		

Division of Crop and Livestock Estimates. Compiled from reports of the Bureau of the Census.

[1] Preliminary estimate by Department of Agriculture.

TABLE 342.—*Cottonseed and cottonseed products: Production, 1909–1925*

Year ended July 31—	Cotton-seed crushed	Crude cottonseed products			Year ended July 31—	Cotton-seed crushed	Crude cottonseed products		
		Oil	Cake and meal	Hulls			Oil	Cake and meal	Hulls
	1,000 short tons	*1,000 gallons*	*1,000 short tons*	*1,000 short tons*		*1,000 short tons*	*1,000 gallons*	*1,000 short tons*	*1,000 short tons*
1909	3,670	146,790	1,192	1,330	1918	4,252	174,996	2,0[illegible]	996
1910	3,269	131,000	1,326	1,189	1919	4,179	176,711	2,170	1,147
1911	4,106	167,970	1,792	1,375	1920	4,013	161,529	1,817	1,143
1912	4,921	201,650	2,151	1,642					
1913	4,580	185,750	1,999	1,540	Av. 1914–1920	4,579	184,375	2,153	1,220
Av. 1909–1913	4,109	166,632	1,752	1,415	1921	4,069	174,558	1,786	1,256
					1922	3,008	124,063	1,355	937
1914	4,848	193,330	2,220	1,400	1923	3,242	133,723	1,187	944
1915	5,780	229,260	2,648	1,677	1924	3,308	130,616	1,518	941
1916	4,202	167,110	1,923	1,220	1925	4,605	187,155	2,125	1,331
1917	4,479	187,688	2,225	969					

Division of Statistical and Historical Research. Compiled from reports of the Bureau of the Census.

TABLE 343.—*Cottonseed: Production and farm value, by States, 1921–1925*

State	Production, year beginning August—					Total value, year beginning August—				
	1921	1922	1923	1924	1925 [1]	1921	1922	1923	1924	1925 [1]
	1,000 short tons	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Missouri	31	63	54	84	115	970	2,310	2,710	3,360	4,140
Virginia	7	12	22	17	22	220	480	980	680	770
North Carolina	344	378	452	366	484	11,420	15,600	20,160	13,670	15,972
South Carolina	334	218	341	357	388	11,510	9,230	15,450	13,160	12,416
Georgia	349	317	261	445	511	11,070	12,520	12,340	16,520	16,863
Florida	5	12	6	8	18	160	380	250	290	612
Tennessee	134	174	101	158	218	4,090	6,680	4,780	5,870	5,559
Alabama	257	366	260	437	593	7,890	13,310	11,980	15,790	17,197
Mississippi	361	439	268	487	857	10,330	14,940	12,540	17,690	18,854
Arkansas	354	452	278	488	679	9,990	14,910	12,370	16,690	12,426
Louisiana	124	152	163	219	400	3,400	4,760	6,660	6,840	9,800
Oklahoma	214	279	291	671	688	5,300	8,780	11,520	21,500	18,232
Texas	978	1,433	1,932	2,201	1,820	27,430	45,370	75,640	70,500	51,870
New Mexico	3	5	12	25	27	90	160	470	800	756
Arizona	20	21	34	48	42	360	470	1,350	1,540	1,117
California	15	12	24	35	56	300	380	710	1,140	2,240
All other	1	3	3	5	10	30	120	140	180	360
United States	3,531	4,336	4,502	6,051	6,928	104,560	150,400	190,050	206,220	189,184

Division of Crop and Livestock Estimates. Compiled from reports of the Bureau of the Census.

[1] Preliminary estimate by Department of Agriculture. Value based on weighted average price Aug. 15 to Nov. 15.

TABLE 344.—*Cottonseed: Estimated price per ton, received by producers, United States, 1910–1925*

Year beginning August	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols*	*Dols.*
1910		26.23	26.86	25.36	25.65	26.35	25.61	25.49	26.12	25.46	23.38	22.70	26.75
1911	20.45	18.09	16.73	16.69	16.70	16.57	16.81	18.21	18.62	19.21	19.24	19.04	17.13
1912	18.02	17.61	18.04	18.57	21.42	21.98	22.01	21.55	21.89	21.88	21.54	21.37	18.77
1913	20.24	21.07	22.01	22.46	23.48	22.70	23.37	23.60	24.17	23.56	23.62	22.78	22.14
Av. 1910–1913	19.57	20.75	20.91	20.77	21.81	21.90	21.95	22.21	22.70	22.53	21.94	21.47	20.86
1914	20.16	13.88	15.28	14.01	17.73	19.14	23.33	22.32	22.69	22.07	20.82	20.05	15.59
1915	20.14	20.98	33.73	34.01	35.54	36.85	36.75	36.56	38.13	37.91	35.79	36.06	30.25
1916	35.22	41.13	47.19	55.82	56.35	52.53	51.43	53.18	55.94	55.61	57.19	56.90	48.11
1917	56.61	57.58	65.02	69.38	68.29	67.51	66.95	68.27	68.08	68.16	66.03	64.11	64.01
1918	61.34	67.90	65.85	64.97	65.05	64.93	64.65	64.00	64.28	63.83	63.80	64.24	65.02
1919	66.23	62.13	66.95	72.65	69.07	69.88	69.34	67.18	68.71	69.88	66.16	61.64	67.87
1920	43.22	29.96	28.94	26.00	19.83	18.96	19.76	18.92	17.23	17.28	17.06	18.75	28.56
Av. 1914–1920	43.27	41.94	46.14	48.12	47.41	47.11	47.46	47.20	47.87	47.82	46.69	45.96	45.72
1921	22.06	27.19	31.05	29.15	28.78	29.24	30.17	32.72	40.79	40.21	37.71	36.92	29.25
1922	32.44	25.37	31.79	40.18	42.93	43.35	45.16	46.32	47.60	46.58	43.14	41.42	32.13
1923	37.47	40.88	40.90	45.92	45.54	44.37	43.27	41.34	40.42	40.53	39.96	39.07	41.58
1924	38.44	31.74	31.95	33.57	35.48	37.50	37.14	38.21	37.94	38.61	36.66	36.41	32.94
1925	36.52	33.48	32.82	27.64	27.87								

Division of Crop and Livestock Estimates.

TABLE 345.—*Cottonseed oil: International trade, average 1909–1913, annual, 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Brazil	4,680	[1] 12	28	4,827	39	2,681	-------	-------
China	-------	2,110	-------	1,020	-------	1,336	-------	1,374
Egypt	1,927	3,568	751	10,072	21	25,198	34	16,085
Peru	-------	[2] [3] 158	-------	5,382	-------	5,243	-------	10,083
United Kingdom	44,246	53,920	10,324	23,690	16,809	46,274	16,524	50,180
United States	[4] 4,715	292,257	21	75,303	25	49,608	-------	43,343
PRINCIPAL IMPORTING COUNTRIES								
Algeria	2,728	1,177	([5])	14	7	16	85	17
Argentina	7,510	12	5,285	-------	4,791	-------	517	-------
Australia	1,062	-------	[6] 786	-------	[6] 904	[6] 3	-------	-------
Belgium	16,884	8,143	1,168	218	2,387	8	2,094	([5])
Canada	21,131	-------	30,658	-------	25,613	-------	20,495	-------
Czechoslovakia	-------	-------	352	-------	37	-------	1,214	-------
Denmark	[3] 7,081	-------	8,302	103	3,813	1,856	3,466	1,180
France	24,666	2,509	4,299	269	6,404	374	7,853	100
Germany	51,884	-------	5,870	-------	9,397	-------	14,204	-------
Greece	-------	-------	779	-------	198	-------	1,735	-------
Italy	34,498	6	531	32	19	1	36	([5])
Mexico	27,052	[7] 2,559	4,065	-------	-------	-------	-------	-------
Netherlands	40,141	392	12,608	1,958	23,464	5,809	21,162	5,604
Norway	11,284	-------	8,815	1,161	4,695	3	5,552	-------
Sweden	5,220	[4] 20	942	38	1,354	-------	1,555	-------
Uruguay	[3] 3,938	-------	2,649	-------	-------	-------	-------	-------
Other countries	27,023	282	5,458	307	3,902	270	1,846	224
Total	337,670	367,125	103,691	124,394	103,879	138,680	98,372	128,190

Division of Statistical and Historical Research. Official sources except where otherwise noted.

[1] One year only.
[2] International Institute of Agriculture.
[3] Four-year average.
[4] Three-year average.
[5] Less than 500 pounds.
[6] Year beginning July 1
[7] Two-year average.

TABLE 346.—*Cottonseed oil, crude: Average price per pound f. o. b. mills, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	4.43	4.44	4.36	4.45	4.66	4.68	4.65	5.01	4.82	5.63	5.97	6.32	4.95
1910	6.18	6.12	6.46	7.03	7.12	7.27	7.27	------	7.00	6.44	6.17	6.20	------
1911	6.14	5.80	5.55	5.20	5.43	5.47	4.88	4.27	4.80	4.38	4.40	4.15	5.04
1912	4.36	4.52	4.60	5.48	6.22	5.80	5.30	5.24	4.95	4.84	5.02	5.27	5.13
1913	5.22	5.36	5.44	6.03	5.87	6.23	6.20	6.10	6.18	5.94	6.06	5.83	5.87
Av. 1909–1913	5.27	5.25	5.28	5.64	5.86	5.89	5.66	------	5.55	5.45	5.52	5.55	------
1914	6.10	6.16	6.30	6.60	6.53	6.26	6.40	5.26	5.36	4.71	4.54	4.44	5.72
1915	5.15	5.81	6.00	5.60	5.16	5.09	4.83	4.40	5.41	6.67	6.64	7.31	5.67
1916	7.71	7.67	8.72	9.18	9.61	9.54	9.20	8.85	8.82	10.10	11.35	11.35	9.34
1917	11.10	11.20	11.64	13.20	14.10	14.67	14.00	13.92	13.86	15.93	17.40	17.33	14.03
1918	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50
1919	17.50	17.50	17.50	17.50	17.50	21.56	21.75	21.75	17.38	16.25	18.95	18.46	18.63
1920	19.74	18.25	17.69	16.19	15.62	15.50	11.50	10.00	10.25	10.35	7.08	6.19	13.20
Av. 1914–1920	12.11	12.01	12.19	12.25	12.29	12.87	12.17	11.67	11.23	11.64	11.92	11.80	12.01
1921	6.10	5.80	4.70	4.43	5.34	5.74	6.76	6.75	7.81	7.26	7.00	7.02	6.23
1922	7.16	8.28	10.15	9.80	10.00	9.75	8.88	8.50	6.46	7.34	8.30	8.52	8.60
1923	9.84	9.92	10.45	10.25	9.88	9.75	9.00	------	9.94	9.44	9.88	9.45	------
1924	9.46	8.84	8.46	8.74	8.20	8.78	10.06	11.30	8.34	9.03	8.85	9.69	9.15
1925	9.48	9.20	9.95	10.00	9.34	9.75	------	------	9.14	8.53	8.79	8.78	------
Av. 1921–1925	8.41	8.41	8.74	8.64	8.55	8.75	------	------	8.34	8.32	8.56	8.69	------

Division of Statistical and Historical Research. 1909–1912, and 1919–1925 average of weekly quotations in the Oil, Paint and Drug Reporter. 1913–1918 from War Industries Board Price Bulletin No. 15.

TABLE 347.—*Cottonseed oil, prime summer yellow: Average spot price per pound (barrels), New York, 1909–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	5.46	5.94	6.60	6.84	7.32	7.30	7.14	7.48	7.76	7.99	7.96	8.51	7.19
1910	10.84	10.12	8.11	7.29	7.24	7.32	7.03	6.60	6.19	6.55	6.43	5.89	7.47
1911	5.85	6.96	5.97	5.73	5.37	5.39	5.54	5.69	6.46	7.18	6.86	6.67	6.14
1912	6.47	6.38	6.22	6.01	6.30	6.25	6.35	6.44	6.96	7.01	7.70	9.11	6.77
1913	8.88	7.67	7.00	7.05	6.86	6.98	7.12	7.38	7.51	7.18	7.30	7.18	7.34
Average 1909–1913	7.50	7.41	6.78	6.58	6.62	6.65	6.64	6.72	6.98	7.18	7.25	7.47	6.98
1914	6.67	5.87	5.22	5.55	5.83	6.56	7.08	6.70	6.61	6.40	6.18	6.06	6.23
1915	5.78	6.30	7.71	7.93	8.38	8.99	9.59	10.53	10.73	10.91	10.91	10.04	8.98
1916	9.27	10.17	11.75	12.53	12.38	12.32	12.51	13.62	15.30	16.23	16.26	14.52	13.07
1917	14.84	16.44	17.99	18.59	18.65	20.09	20.33	19.84	19.75	20.00	20.25	20.25	18.91
1918	20.25	20.25	20.25	20.25	20.25	20.25	20.25	20.25	21.25	21.25	25.03	27.37	21.41
1919	25.88	21.33	23.00	22.75	21.50	21.86	19.67	19.07	18.54	19.21	16.70	13.21	20.23
1920	12.32	13.48	11.43	10.14	8.91	8.59	7.34	6.26	6.24	7.22	7.46	8.57	9.00
Average 1914–1920	13.57	13.41	13.91	13.96	13.70	14.09	13.82	13.75	14.06	14.46	14.68	14.29	13.98
1921	8.69	9.83	8.69	8.30	8.28	8.62	9.86	11.48	11.57	11.71	11.33	10.97	9.95
1922	9.96	8.54	8.88	9.51	9.81	10.77	10.90	11.78	11.76	11.60	11.48	10.35	10.44
1923	10.34	11.62	12.01	11.67	11.00	11.00	10.03	9.77	10.09	9.82	10.42	11.98	10.81
1924	13.83	10.54	11.00	10.86	11.41	11.10	10.69	11.10	11.08	10.51	10.75	11.38	11.19
1925	11.09	10.81	9.86	10.32	10.47								

Division of Statistical and Historical Research. January, 1891–December, 1908, compiled from Oil, Paint and Drug Reporter, Nov. 7, 1910, p. 40, average price per gallon divided by 7.5 to convert to pound basis; January, 1909–December, 1921, from annual reports of the New York Produce Exchange; 1922 and subsequently, compiled from Oil, Paint and Drug Reporter, average of daily ranges.

TABLE 348.—*Cottonseed meal, 36 per cent protein: Price per ton, Memphis, 1910–1925*

Year beginning August —	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Average
1910	$26.00	$25.75	$25.38	$24.38	$24.38	$23.88	$23.25	$23.25	$23.88	$23.88	$24.50	$25.63	$24.51
1911	26.50	25.75	24.63	24.63	24.63	24.38	25.13	26.00	27.25	28.00	27.25	26.75	25.91
1912	26.75	25.63	24.38	24.63	25.50	25.75	25.13	25.13	26.75	28.00	28.75	30.63	26.42
1913	31.75	27.00	27.13	27.38	27.25	26.75	26.13	26.75	27.63	27.75	27.50	27.75	27.56
1914	26.00	23.75	22.75	22.38	23.50	24.75	27.25	26.88	26.50	26.00	25.25	25.13	25.18
1915	25.63	27.13	30.50	32.00	34.00	32.25	29.00	28.38	28.88	27.75	27.25	27.25	29.17
1916	28.25	30.75	35.25	39.25	39.00	37.50	36.25	36.25	38.50	39.50	42.25	44.50	37.27
1917	45.50	43.00	45.50	49.75	46.50	46.50	46.50	46.50	46.50	46.50	46.50	46.50	46.31
1918	46.50	46.50	46.50	54.00	54.00	54.00	54.00	54.00	54.00	54.00	59.13	69.75	53.87
1919	76.25	63.00	66.50	70.25	69.25	71.00	65.00	65.75	64.81	65.13	63.63	59.40	66.66
1920	55.00	51.25	39.50	34.13	28.00	28.33	26.50	25.17	23.50	28.92	29.75	34.00	33.67
Av. 1914–1920	43.59	40.77	40.93	43.11	42.04	42.05	40.64	40.42	40.38	41.11	41.97	43.79	41.73
1921	36.44	36.00	34.50	33.44	34.20	34.75	36.12	41.12	43.00	43.75	42.50	39.80	37.97
1922	34.00	32.60	37.60	42.80	42.10	41.90	41.25	39.60	39.10	38.25	36.00	35.40	38.38
1923	39.00	40.20	40.75	42.70	40.60	39.10	37.75	36.70	36.60	36.50	36.60	38.75	38.77
1924	39.90	37.75	37.40	36.30	36.75	34.60	33.40	33.50	34.00	34.90	36.10	38.25	36.07
1925	40.80	34.25	32.20	31.40	32.00								

Division of Statistical and Historical Research. 1910–1918, compiled from Cotton Oil Press; 1919–1924, compiled from reports of Hay, Feed, and Seed Division.

TABLE 349.—*Cottonseed meal, 36 per cent protein bagged: Average price per ton at 12 markets, 1925*

Market	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Atlanta	35.25	33.50	34.25	34.70	35.60	35.60	37.50	41.25				
Baltimore	42.90	41.40	41.75	42.50	43.40	44.00	46.30	44.00		40.10	38.75	
Boston	43.10	42.40	42.80	43.50	44.50	45.10	47.60	46.30	43.60	41.25	39.75	39.75
Buffalo	40.75	40.00	40.10	41.10	42.20	42.60	45.25	43.10		38.60	38.00	37.60
Chicago	40.30	39.00	38.90	39.60	40.75	41.40	44.00	43.50	39.40	37.25	36.50	36.60
Cincinnati	39.60	37.75	37.80	38.60	40.10	41.00	43.75	45.40	39.10	36.90	35.60	35.80
Memphis	34.60	33.40	33.50	34.00	34.90	36.10	38.25	40.80	34.25	32.20	31.40	32.00
Minneapolis	42.10	39.70	39.80	40.25	41.10	42.00	43.25	45.50	40.60	39.40	38.25	38.00
Philadelphia	42.80	41.75	41.90	42.70	44.00	44.25	46.70	44.30	42.30	40.25	39.20	39.30
Pittsburgh	41.90	39.60	39.60	39.70	42.10	42.25	44.10	43.70	39.50	38.10	37.90	37.80
St. Louis	38.40	36.40	35.50	36.75	38.20	39.50	41.00	45.00				
Savannah	38.70	37.30	37.50	36.25	37.70	38.00	40.25	43.40				

Division of Statistical and Historical Research. Compiled from reports of the Hay, Feed, and Seed Division.

TABLE 350.—*Cottonseed meal: Price per ton paid by farmers, United States, 1910–1925*

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	32.33	33.77	33.17	32.70	32.69	32.18	32.38	32.64	32.36	31.84	31.37	31.58
1911	31.83	31.42	31.32	31.09	31.08	30.92	31.17	30.92	31.01	30.73	30.12	30.50
1912	30.42	30.87	31.22	31.80	32.28	31.84	31.82	31.53	30.60	30.28	29.37	30.16
1913	30.97	31.16	31.08	30.89	31.23	31.53	31.56	31.78	32.32	31.94	31.97	32.36
1914	32.49	32.59	32.65	32.75	32.98	32.68	32.62	32.34	30.73	29.44	28.36	29.04
1915	29.53	30.88	31.32	31.43	31.54	31.39	31.36	31.07	30.79	33.77	34.96	36.45
1916	37.03	37.08	36.46	36.02	35.72	35.60	34.93	35.05	36.17	37.80	41.52	42.95
1917	42.95	43.33	43.67	44.73	45.62	45.17	46.45	49.25	50.60	50.98	53.52	55.52
1918	55.93	56.25	56.59	56.41	56.21	56.18	55.09	55.60	57.40	59.22	59.93	60.34
1919	62.81	62.61	62.88	63.29	63.40	63.06	64.77	71.72	74.08	72.58	76.16	78.57
1920	79.39	79.79	79.70	78.87	78.74	78.52	77.63	73.84	68.22	61.81	50.96	47.97
1921	42.92	41.93	40.17	37.41	36.75	37.84	38.24	40.74	41.97	43.54	43.67	44.73
1922	45.08	45.26	47.90	49.44	50.47	50.42	51.06	48.87	45.48	46.10	50.54	52.70
1923	52.79	53.91	53.37	52.79	52.35	51.89	50.36	49.64	49.47	51.68	51.49	51.75
1924	52.33	51.73	50.26	49.34	49.09	47.99	48.03	49.78	48.98	48.39	47.86	48.49
1925	48.49	48.81	47.01	46.17	46.98	46.36	47.06	48.71	47.43	45.46	44.81	43.62

Division of Crop and Livestock Estimates. As reported monthly by country dealers.

HAY

TABLE 351.—*Hay, tame: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage	Average yield per acre	Production	Price per ton received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Chicago prices No. 1 timothy per ton by carload lots				Domestic exports, fiscal year beginning July 1 [2]	Imports, fiscal year beginning July 1 [2]
							December		Following May			
							Low	High	Low	High		
	1,000 acres	*Short tons*	*1,000 short tons*	*Dollars*	*1,000 dollars*	*Dollars*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Short tons*	*Short tons*
1909	*51,041*	1.46	74,384	10.58	786,722	15.41	16.00	17.00	12.50	16.00	*51,038*	*108,148*
1910	51,015	1.36	69,378	12.14	842,202	16.51	16.00	19.00	18.50	23.50	61,859	377,168
1911	48,240	1.14	54,916	14.29	784,926	16.27	20.00	22.00	24.00	28.00	66,898	782,884
1912	49,530	1.47	72,691	11.79	856,695	17.30	13.00	18.00	14.00	16.50	68,006	179,082
1913	48,954	1.31	64,116	12.43	797,077	16.28	14.50	18.00	15.00	17.50	56,169	191,289
Av. 1909–1913	49,756	1.35	67,097	12.12	813,534	16.35	15.90	18.80	16.80	20.30	62,906	326,972
1914	49,145	1.43	70,071	11.12	779,068	15.85	15.00	16.00	16.50	17.50	118,169	22,609
1915	51,108	1.68	85,920	10.63	913,644	17.88	14.50	16.50	17.50	20.00	199,736	48,896
1916	55,721	1.64	91,192	11.22	1,022,930	18.36	15.00	17.50	19.00	22.00	95,792	65,125
1917	55,203	1.51	83,308	17.09	1,423,766	25.79	26.00	28.00	20.00	26.00	33,762	460,027
1918	55,755	1.37	76,660	20.13	1,543,494	27.68	29.00	31.00	34.00	37.00	32,366	310,742
1919	56,888	1.53	86,907	20.05	1,744,547	30.67	28.00	32.00	35.00	40.00	67,142	251,946
1920	58,101	1.55	89,785	17.66	1,585,355	27.29	26.00	32.00	21.00	23.00	55,446	126,185
Av. 1914–1920	54,560	1.52	83,052	15.44	1,282,460	23.51	21.93	24.71	23.29	27.93	86,059	183,577
1921	58,769	1.40	82,458	12.10	998,069	16.98	20.00	24.00	26.00	28.00	61,240	5,357
1922	61,159	1.57	95,748	12.55	1,202,063	19.65	20.00	22.00	21.00	23.00	53,096	35,430
1923	59,868	1.49	89,250	14.13	1,261,486	21.07	25.00	27.00	25.00	29.00	23,516	403,478
1924	61,451	1.60	98,086	13.76	1,349,528	21.96	22.00	24.00	19.00	23.00	25,413	119,141
1925 [3]	59,398	1.46	86,474	13.99	1,209,496	20.36	23.00	26.00				

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Based on farm price Dec. 1.
[2] Compiled from Commerce and Navigation of United States, 1909–1918, and June issues of Monthly Summaries of Foreign Commerce, 1919–1925.
[3] Preliminary.

TABLE 352.—*Hay, wild: Acreage, production, and farm value, United States, 1909–1925*

Year	Acreage	Yield per acre	Production	Price per ton received by producers Dec. 1	Farm value	Year	Acreage	Yield per acre	Production	Price per ton received by producers Dec. 1	Farm value
	1,000 acres	*Short tons*	*1,000 short tons*	*Dolls.*	*1,000 dolls.*		*1,000 acres*	*Short tons*	*1,000 short tons*	*Dolls.*	*1,000 dolls.*
1909	*17,187*	1.07	18,383			1918	15,365	0.94	14,479	15.23	220,487
1910	*17,187*	.77	13,151			1919	17,150	1.07	18,401	16.50	303,639
1911	*17,187*	.71	12,155			1920	15,787	1.11	17,460	11.35	198,115
1912	*17,427*	1.04	18,043			1921	15,632	.98	15,391	6.63	101,991
1913	*16,341*	.92	15,063			1922	15,871	1.02	16,131	7.14	115,176
1914	*16,752*	1.11	18,615	*7.49*	*139,500*	1923	15,556	1.12	17,361	7.88	136,734
1915	*16,796*	1.27	21,343	*6.80*	*145,125*	1924	15,080	.98	14,731	7.83	115,365
1916	*16,635*	1.19	19,800	*7.90*	*156,503*	1925 [1]	14,746	.88	13,049	8.46	110,334
1917	*16,212*	.93	15,131	*13.49*	*204,083*						

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Preliminary.

TABLE 353.—*Hay, wild: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Acreage		Production		Total value, basis Dec. 1, price		State	Acreage		Production		Total value, basis Dec. 1, price	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]		1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
	1,000 acres	*1,000 acres*	*1,000 short tons*	*1,000 short tons*	*1,000 dolls.*	*1,000 dolls.*		*1,000 acres*	*1,000 acres*	*1,000 short tons*	*1,000 short tons*	*1,000 dolls.*	*1,000 dolls.*
Me	13	13	12	12	115	101	N. C	60	45	60	28	960	462
N. H	17	17	16	14	176	154	S. C	4	4	2	1	35	16
Vt	13	13	13	14	143	148	Ga	20	12	12	6	180	99
Mass	12	12	12	12	180	192	Fla	4	4	3	3	52	54
R. I	1	1	1	1	16	16	Ky	23	23	28	24	375	312
Conn	11	11	12	12	192	198	Tenn	50	47	50	31	700	527
N. Y	67	68	86	76	886	760	Ala	22	22	11	14	170	238
N. J	16	16	21	26	269	364	Miss	38	32	23	24	336	334
Penn	25	24	34	30	408	360	Ark	150	127	112	89	1,422	1,228
Ohio	12	10	14	11	112	116	La	18	18	18	13	265	182
Ind	21	18	21	16	149	176	Okla	530	424	583	280	5,655	3,276
Ill	41	37	55	37	605	444	Tex	215	211	215	95	3,118	1,568
Mich	41	41	51	40	439	428	Mont	673	650	606	585	5,454	5,265
Wis	197	256	256	333	2,150	2,830	Idaho	100	101	75	152	712	1,003
Minn	2,070	2,079	2,422	2,484	19,376	19,127	Wyo	380	380	342	399	3,249	3,591
Iowa	318	300	401	300	3,489	3,150	Colo	360	360	360	360	3,492	3,888
Mo	151	130	184	112	1,564	1,008	N. Mex	32	35	26	28	351	336
N. Dak	1,971	1,774	1,872	1,685	10,858	9,773	Ariz	4	5	2	4	24	60
S. Dak	2,941	2,819	2,206	1,748	13,457	13,984	Utah	70	77	74	131	703	1,048
Nebr	2,976	2,976	2,976	2,232	20,832	20,088	Nev	125	181	101	233	1,313	1,864
Kans	991	938	1,120	788	7,952	6,462	Wash	27	30	27	46	356	616
Del	1	1	1	2	12	24	Oreg	120	235	90	282	1,071	2,256
Md	5	4	7	4	93	56	Calif	114	148	84	207	1,428	1,760
Va	17	13	21	8	302	132							
W. Va	13	13	13	17	169	260	U. S	15,080	14,746	14,731	13,049	115,365	110,334

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 354.—*Hay, tame: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Acreage		Production		Total value, basis Dec. 1 price	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
	1,000 acres	*1,000 acres*	*1,000 short tons*	*1,000 short tons*	*1,000 dollars*	*1,000 dollars*
Maine	1,249	1,249	1,392	1,507	18,096	18,084
New Hampshire	461	461	512	563	9,472	10,416
Vermont	917	920	1,380	1,440	22,218	19,008
Massachusetts	457	457	586	610	14,064	14,030
Rhode Island	47	47	62	63	1,488	1,480
Connecticut	352	355	441	451	11,025	11,050
New York	4,953	4,871	7,199	6,730	104,386	98,258
New Jersey	265	265	484	411	9,196	8,220
Pennsylvania	3,087	3,069	4,978	4,274	79,648	72,658
Ohio	3,331	3,021	5,303	3,284	67,878	49,917
Indiana	2,375	2,236	3,504	2,264	43,800	35,092
Illinois	3,725	3,503	5,548	3,728	74,898	59,275
Michigan	3,050	3,006	4,758	2,971	57,572	49,022
Wisconsin	3,317	3,362	6,383	5,481	84,894	76,734
Minnesota	2,299	2,359	3,897	4,132	44,816	45,452
Iowa	3,362	3,152	5,970	4,236	68,058	57,186
Missouri	3,468	3,399	4,829	3,753	57,948	48,038
North Dakota	926	896	1,450	1,452	11,020	10,454
South Dakota	1,102	1,153	1,819	1,520	16,189	16,720
Nebraska	1,963	1,672	4,382	3,635	42,067	43,984
Kansas	1,570	1,714	3,398	3,466	38,058	41,939
Delaware	85	82	128	112	2,176	2,240
Maryland	426	418	738	570	12,103	10,830
Virginia	1,030	1,005	1,404	768	24,991	16,128
West Virginia	791	785	1,205	950	21,208	19,000
North Carolina	775	789	745	529	15,645	11,638
South Carolina	355	246	166	62	3,652	1,240
Georgia	763	568	392	187	7,448	3,927
Florida	88	78	69	54	1,380	1,242
Kentucky	1,120	1,008	1,587	1,151	28,566	21,524
Tennessee	1,377	1,296	1,435	1,193	28,700	26,246
Alabama	616	591	445	408	8,455	8,160
Mississippi	361	393	340	393	5,950	6,956
Arkansas	588	559	645	445	10,578	8,010
Louisiana	264	242	192	219	3,418	4,161
Oklahoma	531	487	845	623	11,238	9,968
Texas	828	804	967	653	16,246	12,276
Montana	1,206	1,232	2,087	2,034	20,870	20,340
Idaho	1,073	1,032	2,329	3,385	28,414	28,772
Wyoming	646	663	1,166	1,283	11,427	11,419
Colorado	1,263	1,245	2,660	2,676	29,260	32,112
New Mexico	174	171	396	387	6,098	5,805
Arizona	158	160	583	555	9,503	9,435
Utah	537	568	1,085	1,874	13,020	16,866
Nevada	207	216	363	658	5,155	5,922
Washington	970	913	1,860	2,057	27,900	30,855
Oregon	953	900	1,394	1,863	18,540	21,611
California	1,990	1,780	4,645	5,414	100,796	75,796
United States	61,451	59,398	98,086	86,474	1,349,528	1,209,496

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 355.—*Hay, tame: Yield in short tons per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
Me	0.95	1.25	1.10	1.16	1.09	1.09	1.15	1.15	1.45	1.35	1.15	1.20	0.95	1.20	0.81	1.25	1.28	1.11	1.21	1.13
N. H	.97	1.20	1.05	1.25	1.00	1.09	1.15	1.00	1.45	1.35	1.15	1.20	1.10	1.20	.96	1.23	1.22	1.11	1.22	1.15
Vt	1.25	1.35	1.30	1.50	1.28	1.34	1.20	1.35	1.70	1.62	1.30	1.50	1.35	1.43	1.03	1.39	1.40	1.50	1.57	1.38
Mass	1.15	1.28	1.08	1.25	1.21	1.19	1.32	1.50	1.56	1.50	1.20	1.40	1.35	1.40	1.26	1.32	1.37	1.28	1.33	1.31
R. I	1.10	1.18	1.00	1.13	1.17	1.12	1.17	1.24	1.35	1.50	1.30	1.25	1.10	1.27	1.29	1.29	1.24	1.32	1.34	1.30
Conn	1.15	1.35	1.10	1.15	1.14	1.18	1.25	1.35	1.55	1.50	1.30	1.35	1.20	1.36	1.28	1.35	1.32	1.25	1.27	1.29
N. Y	1.05	1.32	1.02	1.25	1.14	1.16	1.20	1.30	1.62	1.46	1.25	1.40	1.25	1.35	1.01	1.40	1.36	1.45	1.38	1.32
N. J	1.25	1.50	1.05	1.44	1.30	1.31	1.35	1.45	1.60	1.45	1.50	1.50	1.65	1.50	1.33	1.61	1.05	1.82	1.57	1.48
Pa	1.20	1.38	1.00	1.43	1.32	1.27	1.28	1.40	1.60	1.41	1.41	1.35	1.40	1.41	1.20	1.57	1.05	1.61	1.39	1.36
Ohio	1.43	1.39	.98	1.36	1.30	1.29	1.13	1.44	1.57	1.42	1.40	1.35	1.35	1.38	1.27	1.50	1.20	1.59	1.09	1.33
Ind	1.40	1.30	.94	1.37	1.00	1.20	1.00	1.50	1.44	1.45	1.45	1.22	1.29	1.34	1.09	1.37	1.24	1.47	1.01	1.24
Ill	1.45	1.33	.82	1.30	.98	1.18	.85	1.54	1.45	1.25	1.35	1.35	1.25	1.29	1.18	1.45	1.30	1.49	1.07	1.30
Mich	1.30	1.30	1.16	1.33	1.05	1.23	1.28	1.40	1.70	1.50	1.03	1.20	1.20	1.33	1.00	1.45	1.26	1.56	1.00	1.25
Wis	1.53	1.00	1.20	1.60	1.62	1.39	1.75	1.75	1.70	1.70	1.40	1.77	1.70	1.68	1.35	1.70	1.33	1.87	1.59	1.57
Minn	1.75	1.00	1.00	1.53	1.50	1.36	1.89	1.91	1.85	1.55	1.40	1.90	1.70	1.74	1.56	1.58	1.25	1.70	1.75	1.57
Iowa	1.64	1.05	.80	1.40	1.48	1.27	1.38	1.80	1.60	1.23	1.30	1.53	1.52	1.48	1.48	1.47	1.52	1.78	1.34	1.52
Mo	1.35	1.30	.60	1.30	.60	1.03	.70	1.52	1.30	1.15	.90	1.35	1.24	1.17	1.20	1.10	1.22	1.39	1.10	1.20
N. Dak	1.37	.55	1.10	1.40	1.14	1.11	1.45	1.50	1.70	.88	1.10	1.00	1.25	1.27	1.36	1.57	1.49	1.57	1.62	1.52
S. Dak	1.50	.80	.55	1.46	1.20	1.10	1.70	2.00	1.90	1.50	1.60	1.75	1.75	1.74	1.60	1.81	1.76	1.65	1.32	1.63
Nebr	1.50	1.00	.85	1.35	1.34	1.21	1.69	2.60	2.10	1.60	1.40	1.86	1.90	1.88	2.17	1.95	2.41	2.23	2.17	2.19
Kans	1.45	1.15	.85	1.50	.90	1.17	1.51	2.30	1.55	2.18	1.73	2.46	2.08	1.97	1.78	2.15	2.20	2.16	2.02	2.06
Del	1.40	1.43	.88	1.33	1.30	1.27	1.10	1.20	1.45	1.26	1.25	1.28	1.40	1.28	1.22	1.51	1.17	1.51	1.37	1.36
Md	1.20	1.35	.72	1.51	1.26	1.21	1.15	1.29	1.48	1.25	1.35	1.40	1.55	1.34	1.28	1.62	1.05	1.73	1.36	1.41
Va	1.30	1.19	.64	1.20	1.27	1.12	.72	1.35	1.35	1.16	1.35	1.20	1.30	1.20	.98	1.26	1.00	1.36	.76	1.07
W. Va	1.25	1.20	.66	1.38	1.25	1.15	.92	1.50	1.54	1.27	1.30	1.20	1.25	1.28	1.21	1.34	1.19	1.52	1.21	1.29
N. C	1.38	1.50	1.05	1.30	1.31	1.31	1.15	1.85	1.30	1.13	1.20	1.02	1.05	1.24	1.19	1.20	1.22	.96	.67	1.05
S. C	1.23	1.25	1.08	1.15	1.16	1.17	1.15	1.30	1.30	1.08	1.10	.90	.93	1.11	.83	.99	.80	.47	.25	.67
Ga	1.35	1.40	1.35	1.35	1.40	1.37	1.35	1.15	1.15	1.03	1.24	.85	.81	1.08	.89	.84	.66	.51	.33	.65
Fla	1.38	1.33	1.30	1.25	1.35	1.32	1.35	1.20	1.25	1.10	1.14	.77	.65	1.07	1.04	.71	.90	.78	.69	.82
Ky	1.36	1.29	.95	1.23	.87	1.14	.95	1.40	1.40	1.30	1.30	1.15	1.20	1.24	1.10	1.38	1.36	1.42	1.14	1.28
Tenn	1.50	1.40	1.60	1.30	1.21	1.28	1.20	1.47	1.38	1.20	1.35	1.16	1.28	1.29	1.16	1.33	1.15	1.04	.92	1.12
Ala	1.50	1.43	1.40	1.25	1.36	1.39	1.31	1.45	1.10	.80	.81	.90	.86	1.03	.91	.95	.80	.72	.69	.81
Miss	1.47	1.42	1.50	1.48	1.33	1.44	1.45	1.40	1.40	1.45	1.20	1.35	1.44	1.38	1.14	1.22	1.25	.94	1.00	1.11
Ark	1.25	1.35	1.15	1.23	1.20	1.24	1.05	1.60	1.25	1.47	1.30	1.12	1.16	1.28	1.26	1.25	1.26	1.10	.80	1.13
La	1.50	1.75	1.30	1.65	1.50	1.54	1.90	1.75	1.70	1.60	1.30	1.44	1.40	1.58	1.29	1.33	1.44	.73	.90	1.14
Okla	.90	1.05	.80	1.25	.85	.97	1.13	2.30	1.70	1.60	1.20	1.82	1.60	1.62	1.62	1.67	1.71	1.59	1.28	1.57
Tex	.95	1.15	1.00	1.40	1.16	1.13	1.75	1.70	1.20	1.00	1.00	1.60	1.40	1.38	1.40	1.56	1.64	1.17	.81	1.32
Mont	1.79	1.40	2.00	1.90	1.80	1.78	2.50	2.00	1.70	1.40	1.60	1.00	1.80	1.71	1.79	1.89	1.88	1.73	1.65	1.79
Idaho	2.85	3.00	3.10	2.80	2.90	2.93	2.65	2.70	2.50	3.00	3.00	2.30	2.70	2.69	2.83	2.52	2.50	2.17	3.28	2.66
Wyo	2.40	2.40	2.10	1.90	1.90	2.14	2.30	2.20	1.80	1.70	2.10	1.40	2.00	1.93	1.80	1.90	1.93	1.80	1.94	1.87
Colo	2.50	2.00	2.00	2.19	2.05	2.15	2.40	2.20	2.05	2.45	2.22	2.05	2.15	2.22	2.16	1.91	2.05	2.11	2.15	2.08
N. Mex	2.60	2.10	2.60	2.33	2.08	2.34	2.50	2.20	2.00	1.90	2.20	2.40	2.40	2.23	2.29	1.80	2.09	2.28	2.26	2.14
Ariz	3.30	2.10	3.86	3.40	4.00	3.33	3.20	3.20	3.80	3.50	3.20	3.50	3.10	3.36	3.09	3.29	3.56	3.69	3.47	3.42
Utah	2.90	3.00	2.50	2.78	2.33	2.70	2.75	2.50	2.20	2.90	2.35	1.92	2.62	2.46	2.53	2.75	2.69	2.02	3.30	2.66
Nev	2.35	3.40	3.40	3.00	2.75	2.98	3.25	3.00	2.40	2.90	2.60	2.28	2.33	2.68	2.70	2.82	2.67	1.75	3.05	2.60
Wash	2.10	2.10	2.40	2.20	2.30	2.22	2.20	2.30	2.40	2.20	1.80	2.40	2.00	2.19	2.22	1.98	2.35	1.86	2.36	2.15
Oreg	2.05	2.10	2.10	2.20	2.10	2.11	2.00	2.20	2.30	1.95	1.80	1.72	2.25	2.03	2.10	2.00	2.24	1.46	2.07	1.97
Calif	1.70	1.83	1.75	1.53	1.50	1.66	1.95	1.80	1.75	2.00	1.25	2.25	2.30	1.90	2.33	2.47	2.55	2.33	3.04	2.54
U. S	1.46	1.36	1.14	1.47	1.31	1.35	1.43	1.68	1.64	1.51	1.37	1.52	1.51	1.52	1.40	1.57	1.49	1.60	1.46	1.50

Division of Crop and Livestock Estimates.

TABLE 356.—*Hay, wild: Yield in short tons per acre, by States, 1910–1925*

State	1910	1911	1912	1913	Av. 1910–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
Me	1.05	0.90	0.96	0.80	0.93	1.05	0.95	1.08	1.00	0.90	1.00	1.00	1.00	0.86	1.10	1.10	0.96	0.94	0.99
N. H	1.05	.85	1.05	.80	.94	1.00	.80	1.05	1.00	.90	1.00	.95	.96	.80	1.00	.94	.95	.85	.91
Vt	1.10	1.05	1.25	1.03	1.11	1.07	1.05	1.35	1.00	1.00	1.10	1.00	1.08	1.00	1.10	1.00	1.00	1.05	1.03
Mass	1.05	.88	1.05	1.01	1.00	1.10	1.05	1.05	1.00	1.00	1.10	1.10	1.06	1.00	1.00	1.00	1.00	1.00	1.00
R. I	1.00	.80	.93	.97	.92	1.00	1.00	1.00	.90	.90	.90	1.00	.96	.88	.90	.95	.85	.85	.89
Conn	1.00	.90	.95	.89	.94	1.15	.95	1.17	1.00	1.00	1.08	1.00	1.05	1.10	1.00	1.20	1.07	1.05	1.08
N. Y	1.05	.87	1.10	1.00	1.00	1.30	1.00	1.45	1.25	1.00	1.26	1.19	1.21	1.06	1.18	1.18	1.28	1.12	1.15
N. J	1.30	.90	1.30	1.15	1.16	1.50	1.15	1.45	1.45	1.30	1.20	1.35	1.34	1.25	1.40	1.20	1.30	1.60	1.35
Pa	1.20	.85	1.25	1.20	1.12	1.16	1.00	1.55	1.30	.95	1.25	1.24	1.21	1.22	1.20	1.15	1.55	1.24	1.23
Ohio	1.25	.90	1.30	1.20	1.16	1.10	1.42	1.50	1.30	1.50	1.30	1.28	1.34	1.40	1.50	1.15	1.14	1.14	1.27
Ind	1.25	.90	1.30	1.00	1.11	1.10	1.20	1.40	1.20	1.20	1.20	1.20	1.21	1.07	1.14	1.15	1.00	.90	1.05
Ill	1.10	.75	1.10	.85	.95	1.05	1.30	1.20	1.40	1.30	1.15	1.20	1.23	1.20	1.25	1.15	1.35	1.00	1.19
Mich	1.10	.95	1.10	.85	1.00	1.25	1.15	1.33	1.25	1.05	1.25	1.28	1.22	1.10	1.30	1.20	1.25	.97	1.16
Wis	.90	1.00	1.25	1.30	1.11	1.33	1.35	1.47	1.37	1.55	1.36	1.28	1.39	1.25	1.30	1.35	1.20	1.30	1.28
Minn	.70	.70	1.10	1.10	.90	1.44	1.35	1.52	1.24	1.15	1.46	1.40	1.37	1.28	1.22	1.15	1.17	1.20	1.20
Iowa	.80	.60	1.00	1.10	.88	1.20	1.35	1.30	1.15	1.20	1.26	1.27	1.25	1.16	1.14	1.20	1.26	1.00	1.15
Mo	1.00	.50	1.00	.60	.78	.84	1.15	1.10	1.00	.75	1.16	1.12	1.02	1.10	.95	1.10	1.22	.86	1.05
N. Dak	.50	.80	1.00	.90	.80	1.02	1.15	1.20	.65	.90	.90	.95	.97	1.00	1.05	1.00	.95	.95	.99
S. Dak	.60	.40	1.00	.80	.70	1.10	1.40	1.25	.90	1.00	1.00	1.12	1.11	.80	.90	1.20	.75	.65	.85
Nebr	.75	.65	1.00	.90	.82	1.07	1.20	1.10	.85	.88	1.02	1.02	1.02	.84	.85	1.10	1.00	.75	.91
Kans	.90	.60	1.05	.70	.81	.96	1.40	1.10	.80	.60	1.15	.97	1.00	1.09	1.10	1.18	1.13	.84	1.07
Del	1.25	.80	1.20	1.15	1.10	1.24	1.20	1.28	1.12	1.14	1.33	1.50	1.29	.87	1.24	1.36	1.40	1.50	1.27
Md	1.25	.65	1.35	1.15	1.10	1.15	1.10	1.25	1.14	1.17	1.38	1.45	1.23	1.20	1.12	1.15	1.40	1.50	1.19
Va	1.05	.60	1.10	1.15	.98	.87	1.10	1.05	1.10	1.05	1.12	1.25	1.08	.75	1.00	1.00	1.25	.65	.93
W. Va	1.10	.60	1.20	1.15	1.01	.95	1.10	1.20	1.20	1.20	1.14	1.20	1.14	1.10	1.20	1.00	1.00	1.30	1.12
N. C	1.20	1.00	1.10	1.15	1.11	1.10	1.40	1.07	1.01	1.00	1.00	1.20	1.11	1.00	1.00	1.00	1.00	.62	.92
S. C	1.20	1.05	1.10	1.15	1.12	1.15	1.40	1.25	1.25	1.05	1.10	1.20	1.20	.81	1.00	.85	.60	.33	.72
Ga	1.30	1.30	1.30	1.35	1.31	1.15	1.20	1.25	1.10	.91	.95	.90	1.07	1.00	.92	.90	.60	.51	.79
Fla	1.20	1.15	1.10	1.20	1.16	1.05	1.15	1.00	1.00	1.10	1.05	.95	1.04	.90	.90	.85	.80	.75	.84
Ky	1.05	.90	1.05	.80	.95	1.20	1.20	1.15	1.50	1.00	1.10	1.00	1.16	.90	1.15	1.00	1.20	1.05	1.06
Tenn	1.15	.95	1.10	1.05	1.06	1.20	1.10	1.20	1.10	1.00	1.10	1.15	1.12	1.15	1.10	1.10	1.00	.65	1.00
Ala	1.20	1.20	1.10	1.15	1.16	1.38	1.20	1.20	1.05	1.00	1.00	1.00	1.12	.90	.80	.80	.50	.62	.72
Miss	1.20	1.30	1.25	1.15	1.22	1.20	1.10	1.25	1.22	1.20	1.30	1.30	1.22	1.00	1.10	1.20	.60	.75	.93
Ark	1.05	.90	1.00	1.00	.99	1.00	1.20	1.00	1.12	.90	1.20	1.15	1.08	1.05	1.00	1.21	.75	.70	.94
La	1.35	1.00	1.25	1.20	1.20	1.55	1.40	1.40	1.25	1.00	1.50	1.30	1.34	1.30	1.40	1.20	1.00	.70	1.12
Okla	.80	.60	.90	.70	.75	.68	1.25	1.00	.70	.56	1.20	1.20	.94	1.00	.90	.98	1.10	.66	.93
Tex	.90	.70	1.00	.90	.88	1.25	1.40	1.05	.75	.60	1.25	1.10	1.08	1.10	1.10	1.10	1.00	.45	.95
Mont	.80	1.10	1.00	.95	.96	.91	1.10	.90	.75	.75	.35	.95	.82	.80	.90	.91	.90	.90	.88
Idaho	1.50	1.60	1.40	1.50	1.50	1.25	1.40	1.20	1.40	1.10	1.00	1.20	1.22	1.50	1.20	1.20	.75	1.50	1.23
Wyo	1.00	.95	.90	.90	.94	1.00	.95	.95	1.00	1.10	.92	1.00	.99	.80	.95	1.05	.90	1.05	.95
Colo	.90	.90	1.10	.95	.96	1.20	1.42	.92	1.02	.94	.89	1.05	1.02	1.00	.97	1.05	1.00	1.00	1.00
N. Mex	.70	.95	.90	.70	.81	.80	.90	.65	.87	.70	.90	.82	.81	.85	.80	.80	.80	.80	.81
Ariz	.70	1.05	.75	1.00	.88	.80	.70	1.00	1.25	1.00	1.00	.80	.94	1.00	.50	1.25	.50	.75	.80
Utah	1.60	1.55	1.60	1.50	1.56	1.60	1.60	1.50	1.75	1.10	1.17	1.28	1.42	1.10	1.38	1.52	1.05	1.70	1.35
Nev	1.60	1.60	1.30	1.10	1.40	1.50	1.30	1.00	1.50	.50	.84	1.00	1.09	1.11	1.59	1.00	.81	1.29	1.18
Wash	1.20	1.40	1.25	1.25	1.28	1.30	1.20	1.40	1.40	1.33	1.20	1.15	1.28	1.50	1.14	1.58	1.00	1.55	1.35
Oreg	1.15	1.20	1.25	1.20	1.20	1.22	1.30	1.10	1.10	1.00	1.18	1.20	1.16	1.10	1.00	1.10	.75	1.20	1.03
Calif	1.10	1.10	1.00	1.00	1.05	1.20	1.10	1.00	1.15	.95	1.04	1.04	1.07	1.10	1.10	1.00	.74	1.40	1.07
U. S	.77	.71	1.01	.92	.86	1.11	1.27	1.19	.93	.94	1.07	1.11	1.09	.98	1.02	1.12	.98	.88	1.00

Division of Crop and Livestock Estimates.

TABLE 357.—*Hay, alfalfa: Acreage, yield per acre, and production, by States, 1924 and 1925*

State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)		State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)	
	1924	1925 [1]	1924	1925	1924	1925 [1]		1924	1925 [1]	1924	1925	1924	1925 [1]
Me.	1	1	2.80	3.00	3	3	N. C.	5	5	2.70	1.00	14	5
N. H.	1	1	3.00	3.00	3	3	S. C.	3	3	1.80	.55	5	2
Vt.	4	5	2.85	3.00	11	15	Ga.	3	4	1.80	.48	5	2
Mass.	1	1	3.00	3.10	3	3	Ky.	54	49	2.20	2.25	119	110
Conn.	2	2	3.00	3.10	6	6	Tenn.	15	15	2.00	1.50	30	22
N. Y.	198	208	2.60	2.58	515	537	Ala.	15	14	1.50	1.20	22	17
N. J.	23	23	2.75	2.70	63	62	Miss.	18	18	1.25	1.55	22	28
Pa.	77	73	2.30	2.40	177	175	Ark.	45	43	1.80	1.80	81	77
Ohio	152	161	2.50	2.30	380	370	La.	12	10	1.25	1.55	15	16
Ind.	115	207	2.30	2.13	264	441	Okla.	240	204	1.80	1.50	432	306
Ill.	225	248	2.85	2.60	641	645	Tex.	60	71	1.85	1.80	111	128
Mich.	350	392	2.35	2.05	822	804	Mont.	598	604	2.01	2.00	1,202	1,208
Wis.	287	310	2.80	2.65	804	822	Idaho	731	709	2.50	3.80	1,828	2,694
Minn.	221	330	2.70	2.75	597	908	Wyo.	400	400	2.00	2.20	800	880
Iowa	288	279	3.05	2.45	878	684	Colo.	873	870	2.30	2.30	2,008	2,001
Mo.	189	189	2.50	2.45	472	463	N. Mex.	116	116	2.70	2.70	313	313
N. Dak.	116	117	2.00	2.25	232	263	Ariz.	125	128	4.30	4.00	538	512
S. Dak.	711	754	1.80	1.43	1,280	1,078	Utah	467	495	2.14	3.50	999	1,732
Nebr.	1,358	1,300	2.40	2.32	3,259	3,016	Nev.	145	152	2.06	3.60	299	547
Kans.	981	990	2.42	2.28	2,374	2,257	Wash.	260	273	3.00	3.00	780	819
Del.	2	2	2.50	2.70	5	5	Oreg.	236	226	2.50	3.00	590	678
Md.	19	19	2.45	2.40	47	46	Calif.	964	971	3.75	4.20	3,615	4,078
Va.	36	40	2.20	1.53	79	61							
W. Va.	8	8	2.50	2.00	20	16	U. S.	10,750	11,040	2.49	2.61	26,763	28,858

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 358.—*Hay, clover: Acreage, yield per acre, and production, by States, 1924 and 1925*

State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)		State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)	
	1924	1925 [1]	1924	1925	1924	1925 [1]		1924	1925 [1]	1924	1925	1924	1925 [1]
Me.	33	33	1.50	1.70	50	56	N. C.	104	114	1.00	.70	104	80
N. H.	9	9	1.60	1.80	14	16	S. C.	3	3	.85	.25	3	1
Vt.	25	25	1.70	1.90	42	48	Ga.	5	5	.90	.42	4	2
Mass.	17	17	1.96	2.00	33	34	Fla.	1	1	.60	.60	1	1
R. I.	1	1	1.60	1.90	2	2	Ky.	164	145	1.45	1.20	238	174
Conn.	4	4	2.00	2.05	8	8	Tenn.	275	247	1.00	.90	275	223
N. Y.	456	455	1.65	1.62	742	737	Ala.	24	22	.79	.73	19	16
N. J.	28	28	1.86	1.60	52	45	Miss.	97	98	.91	.95	88	93
Pa.	314	330	1.62	1.58	509	521	Ark.	95	90	1.00	.75	95	68
Ohio	520	583	1.56	1.14	967	665	La.	43	40	.65	.70	28	28
Ind.	760	635	1.43	.94	1,001	597	Okla.	21	21	1.30	1.00	27	21
Ill.	770	732	1.60	1.10	1,232	805	Tex.	4	4	2.00	.55	8	2
Mich.	700	714	1.45	.95	1,015	678	Mont.	51	55	1.55	1.45	79	80
Wis.	824	783	2.10	1.75	1,730	1,370	Idaho	45	42	1.80	2.60	81	109
Minn.	550	582	1.74	1.90	957	1,106	Wyo.	15	18	1.60	1.90	24	34
Iowa	790	630	1.80	1.35	1,260	850	Colo.	20	20	1.80	1.90	36	38
Mo.	700	686	1.45	1.20	1,015	823	N. Mex.	2	2	2.00	1.70	4	3
N. Dak.	190	213	1.75	2.00	332	426	Utah	3	3	1.50	2.50	4	8
S. Dak.	117	105	1.60	1.25	187	131	Nev.	1	1	1.70	2.50	2	2
Nebr.	203	116	2.00	1.65	406	191	Wash.	74	70	2.00	2.40	148	168
Kans.	139	228	1.76	1.70	244	387	Oreg.	131	113	1.70	2.10	223	237
Del.	20	19	1.35	1.40	27	27	Calif.	9	9	1.56	1.67	14	15
Md.	85	82	1.60	1.31	136	107							
Va.	160	160	1.47	.82	235	131	U. S.	8,596	8,341	1.60	1.35	13,781	11,231
W. Va.	50	48	1.60	1.40	80	67							

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 359.—*Hay, clover and timothy (mixed): Acreage, yield per acre, and production, by States, 1924 and 1925*

State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)		State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)	
	1924	1925 [1]	1924	1925	1924	1925 [1]		1924	1925 [1]	1924	1925	1924	1925 [1]
Me.	539	539	1.29	1.40	695	755	Va.	300	285	1.60	.75	480	214
N. H.	154	154	1.40	1.50	216	231	W. Va.	330	330	1.62	1.20	535	396
Vt.	530	530	1.61	1.65	853	874	N. C.	45	49	1.40	.70	63	34
Mass.	126	126	1.61	1.65	203	208	Ga.	2	2	1.00	.42	2	1
R. I.	16	16	1.50	1.60	24	26	Ky.	217	186	1.45	1.20	315	223
Conn.	74	75	1.60	1.65	118	124	Tenn.	250	238	1.00	.85	250	202
N. Y.	2,251	2,206	1.52	1.40	3,422	3,088	Ala.	3	3	1.00	1.00	3	3
N. J.	120	120	1.78	1.50	214	180	Miss.	2	2	1.00	1.10	2	2
Pa.	1,571	1,571	1.65	1.39	2,592	2,184	Ark.	80	76	1.00	.75	80	57
Ohio	1,244	1,139	1.60	1.05	1,990	1,196	Okla.	10	11	1.39	1.10	14	12
Ind.	660	579	1.60	.86	1,056	498	Tex.	1	1	1.00	1.00	1	1
Ill.	839	776	1.58	.98	1,326	760	Mont.	157	157	1.61	1.70	253	267
Mich.	1,518	1,456	1.50	.80	2,277	1,165	Idaho	97	93	1.60	2.50	155	232
Wis.	1,648	1,727	1.80	1.50	2,966	2,590	Wyo.	74	73	1.61	2.00	119	146
Minn.	849	806	1.59	1.58	1,350	1,273	Colo.	126	126	1.90	2.00	239	252
Iowa	1,792	1,666	1.67	1.26	2,993	2,099	N. Mex.	4	4	1.70	1.40	7	6
Mo.	999	989	1.35	1.09	1,349	989	Utah	20	21	1.25	2.30	25	48
N. Dak.	25	25	1.60	1.60	40	40	Nev.	14	15	1.10	2.00	15	30
S. Dak.	80	101	1.45	1.15	116	116	Wash.	106	100	1.90	2.25	201	225
Nebr.	155	50	1.70	1.34	264	67	Oreg.	48	50	1.70	1.70	82	85
Kans.	106	98	1.52	1.40	161	137	Calif.	21	21	1.29	1.71	27	36
Del.	27	28	1.50	1.30	40	36							
Md.	194	194	1.78	1.24	345	241	U. S.	17,424	16,814	1.58	1.27	27,478	21,349

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 360.—*Hay, timothy: Acreage, yield per acre, and production, by States, 1924 and 1925*

State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)		State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)	
	1924	1925 [1]	1924	1925	1924	1925 [1]		1924	1925 [1]	1924	1925	1924	1925 [1]
Me.	136	136	1.21	1.30	165	177	W. Va.	220	211	1.45	1.12	319	236
N. H.	44	44	1.30	1.40	57	64	N. C.	25	26	1.20	.64	30	17
Vt.	135	135	1.36	1.50	184	202	S. C.	2	2	.85	.25	2	1
Mass.	56	56	1.47	1.55	82	87	Ga.	4	4	1.00	.42	4	2
R. I.	8	8	1.56	1.45	12	12	Ky.	239	200	1.25	1.00	299	200
Conn.	35	36	1.55	1.57	54	57	Tenn.	80	74	.95	.82	76	61
N. Y.	1,270	1,232	1.40	1.27	1,778	1,565	Ala.	4	2	1.00	1.00	4	2
N. J.	63	63	1.63	1.35	103	85	Miss.	4	4	.90	1.00	4	4
Pa.	971	942	1.55	1.28	1,505	1,206	Ark.	30	29	1.00	.75	30	22
Ohio	1,200	1,036	1.50	.88	1,800	912	Okla.	13	13	1.44	1.25	19	16
Ind.	630	554	1.38	.73	869	404	Tex.	22	22	1.00	1.00	22	22
Ill.	996	946	1.20	.75	1,295	710	Mont.	100	100	1.40	1.40	140	140
Mich.	390	355	1.30	.67	507	238	Idaho	57	54	1.20	1.90	68	103
Wis.	439	430	1.37	1.30	602	559	Wyo.	29	30	1.30	1.60	38	48
Minn.	392	368	1.36	1.35	533	497	Colo.	30	30	1.80	1.80	54	54
Iowa	471	430	1.38	1.00	650	430	N. Mex.	5	5	1.70	1.40	8	7
Mo.	1,153	1,141	1.15	.83	1,326	947	Utah	8	8	1.25	2.15	10	17
N. Dak.	76	70	1.15	1.25	87	88	Nev.	8	8	1.10	2.00	9	16
S. Dak.	72	72	1.18	.90	85	65	Wash.	51	51	1.50	2.00	76	102
Nebr.	26	15	1.40	1.14	36	17	Oreg.	18	17	1.50	2.00	27	34
Kans.	69	72	1.26	1.26	87	91	Calif.	5	5	1.20	1.60	6	8
Del.	11	11	1.40	1.15	15	13							
Md.	70	70	1.63	1.23	114	86	U. S.	9,793	9,234	1.37	1.05	13,461	9,712
Va.	126	117	1.45	.75	183	88							

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 361.—*Hay, grains cut green: Acreage, yield per acre, and production, by States, 1924 and 1925*

State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)		State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)	
	1924	1925 [1]	1924	1925	1924	1925 [1]		1924	1925 [1]	1924	1925	1924	1925 [1]
Me	4	4	1.70	1.85	7	7	N. C	79	89	1.06	0.75	84	67
N. H	6	6	2.00	2.25	12	14	S. C	20	21	.55	.48	11	10
Vt	19	19	2.20	2.25	42	43	Ga	30	45	.55	.40	16	18
Mass	8	8	2.00	2.15	16	17	Fla	1	1	.95	.90	1	1
R. I	1	1	1.75	1.85	2	2	Ky	30	35	1.53	1.20	46	42
Conn	6	6	2.05	2.00	12	12	Tenn	50	50	.80	1.00	40	50
N. Y	28	29	1.87	2.00	52	58	Ala	25	30	.65	.60	16	18
N. J	3	3	2.10	1.75	6	5	Miss	10	12	.80	.88	8	11
Pa	10	10	1.80	1.80	18	18	Ark	50	45	1.10	.68	55	31
Ohio	25	25	1.70	1.30	42	32	Okla	33	38	1.00	.78	33	30
Ind	27	36	1.50	1.11	40	40	Tex	45	58	1.10	.45	50	26
Ill	20	25	1.44	1.09	29	27	Mont	190	211	1.40	1.10	266	232
Mich	20	22	1.40	1.14	28	25	Idaho	109	98	1.40	1.90	153	186
Wis	26	21	1.61	1.60	42	34	Wyo	53	62	1.50	1.40	80	87
Minn	46	44	1.65	1.70	76	75	Colo	88	90	1.00	1.40	88	126
Iowa	17	29	1.60	1.40	27	41	N. Mex	20	17	1.30	1.20	26	20
Mo	49	49	1.40	1.28	69	63	Ariz	23	20	1.50	1.50	34	30
N. Dak	197	213	1.40	1.65	276	351	Utah	6	6	1.00	1.80	6	11
S. Dak	46	50	1.10	.90	51	45	Nev	7	7	.90	1.50	6	10
Nebr	32	34	1.70	1.40	54	48	Wash	420	357	1.25	1.80	525	643
Kans	42	50	1.60	1.50	67	75	Oreg	410	415	.80	1.70	328	706
Del	3	2	1.60	1.90	5	4	Calif	905	694	.90	1.60	815	1,110
Md	5	4	2.00	1.57	10	6							
Va	26	26	1.50	1.15	39	30	U. S	3,290	3,137	1.14	1.46	3,743	4,567
W. Va	20	20	1.70	1.50	34	30							

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 362.—*Hay, annual legumes: Acreage, yield per acre, and production, by States, 1924 and 1925*

State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)		State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)	
	1924	1925 [1]	1924	1925	1924	1925 [1]		1924	1925 [1]	1924	1925	1924	1925 [1]
Vt	1	1	2.00	1.50	2	2	N. C	423	397	0.82	0.63	347	250
N. Y	4	4	1.60	2.00	6	8	S. C	280	179	.39	.21	110	38
N. J	2	2	2.12	1.60	4	3	Ga	619	440	.47	.32	292	139
Pa	18	17	1.75	1.80	32	31	Fla	61	51	.80	.65	49	33
Ohio	46	37	1.55	1.70	71	63	Ky	99	80	1.61	1.45	159	116
Ind	168	157	1.18	1.39	199	218	Tenn	282	268	1.19	1.06	336	283
Ill	394	343	1.26	1.27	496	435	Ala	381	350	.64	.59	243	208
Mich	12	13	1.58	1.62	19	21	Miss	113	136	.92	.97	104	132
Wis	17	15	1.64	1.50	28	22	Ark	100	104	.97	.72	97	75
Minn	11	11	1.64	1.50	18	16	La	149	132	.71	.91	106	120
Iowa	20	20	2.00	1.70	40	34	Okla	14	20	1.00	.85	14	17
Mo	151	141	1.40	1.51	212	213	Tex	117	102	.68	.47	80	48
Nebr	4	6	1.30	1.40	5	8	Mont	7	7	1.35	1.35	9	9
Kans	8	6	1.75	1.33	14	8	Wash	7	5	1.85	1.75	13	9
Del	18	16	1.70	1.40	31	22	Oreg	40	15	1.50	1.80	60	27
Md	38	34	1.84	2.00	70	68	Calif	18	18	1.40	1.70	25	31
Va	270	265	.86	.65	231	171							
W. Va	34	33	1.76	1.91	60	63	U. S	3,926	3,425	.91	.86	3,582	2,941

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 363.—*Hay, millet, Sudan grass, and other: Acreage, yield per acre, and production, by States, 1924 and 1925*

State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)		State	Thousands of acres		Yield per acre (short tons)		Production (thousands of short tons)	
	1924	1925 [1]	1924	1925	1924	1925 [1]		1924	1925 [1]	1924	1925	1924	1925 [1]
Me.	536	536	0.88	0.95	472	509	N. C.	94	109	1.10	0.70	103	76
N. H.	247	247	.85	.95	210	235	S. C.	47	38	.74	.26	35	10
Vt.	203	205	1.21	1.25	246	256	Ga.	100	68	.69	.34	69	23
Mass.	249	249	1.00	1.05	249	261	Fla.	25	25	.70	.75	18	19
R. I.	21	21	1.06	1.02	22	21	Ky.	317	313	1.30	.91	411	286
Conn.	231	232	1.05	1.05	243	244	Tenn.	425	404	1.01	.87	428	352
N. Y.	752	737	.91	1.00	684	737	Ala.	164	170	.84	.85	138	144
N. J.	26	26	1.61	1.20	42	31	Miss.	117	123	.96	1.00	112	123
Pa.	1.26	126	1.15	1.10	145	139	Ark.	188	172	1.10	.67	207	115
Ohio	44	40	1.20	1.15	53	46	La.	60	60	.72	.92	43	55
Ind.	75	68	1.00	.97	75	66	Okla.	200	180	1.53	1.23	306	221
Ill.	481	433	1.10	.80	529	346	Tex.	579	546	1.20	.78	695	426
Mich.	60	54	1.50	.75	90	40	Mont.	103	98	1.34	1.00	138	98
Wis.	76	76	1.63	1.10	124	84	Idaho	34	36	1.30	1.70	44	61
Minn.	230	218	1.59	1.18	366	257	Wyo.	75	80	1.40	1.10	105	88
Iowa	74	98	1.65	1.00	122	98	Colo.	126	109	1.87	1.88	235	205
Mo.	227	204	1.70	1.25	386	255	N. Mex.	27	27	1.40	1.40	38	38
N. Dak.	322	258	1.50	1.10	483	284	Ariz.	10	12	1.10	1.10	11	13
S. Dak.	76	71	1.31	1.20	100	85	Utah	33	35	1.25	1.65	41	58
Nebr.	185	151	1.94	1.91	358	288	Nev.	32	33	1.00	1.60	32	53
Kans.	225	270	2.00	1.89	451	511	Wash.	52	57	1.10	1.60	57	91
Del.	4	4	1.25	1.30	5	5	Oreg.	70	64	1.20	1.50	84	96
Md.	15	15	1.10	1.08	16	16	Calif.	68	62	2.10	2.20	143	136
Va.	112	112	1.40	.65	157	73							
W. Va.	129	135	1.22	1.05	157	142	U. S.	7,672	7,407	1.21	1.06	9,278	7,816

[1] Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 364.—*Hay: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	10.7	2.2	0.6	1.2	0.1	0.3	0.3	0.3	15.7	0.1	0.5	0.1	0.1	1.1	17.6
1910	17.4	1.2	.3	1.2	.1	.5	.1	.4	21.2	.1	.5	.2	.1	1.5	23.6
1911	27.7	.8	(1)	.9	.1	1.9	(1)	.5	31.9	.1	.6	.1	.1	1.9	34.7
1915	3.7	4.9	.6	1.8	.1	.1	.3	.4	11.9	.2	.5	.1	(1)	1.2	13.9
1916	5.5	1.0	.3	1.1	.1	.2	.1	.3	8.6	(1)	.3	.1	(1)	.6	9.6
1917	11.5	1.3	.2	2.9	.2	.3	.1	.3	16.8	.1	.4	.1	(1)	.9	18.3
1918	17.5	.7	.2	2.8	.1	.8	.1	.5	22.7	.1	.9	.2	(1)	1.0	24.9
1919	9.9	1.9	.3	1.0	.1	.4	.1	.2	13.9	.1	1.0	(1)	.1	.5	15.6
1920	7.2	1.4	.2	1.3	.2	.2	.1	.1	10.7	.2	1.0	------	.1	.7	12.7
1921	15.1	.9	.2	1.4	.2	.7	.2	.7	19.4	.2	.9	.2	------	.3	21.0
1922	10.6	.9	.2	.8	.2	.3	.1	.1	13.2	.2	.8	.1	(1)	.2	14.5
1923	12.7	1.5	.4	1.9	.3	.4	.1	------	17.3	.2	.8	.1	(1)	.3	18.7
1924	13.8	1.7	.2	1.4	.3	.2	.1	.1	17.8	.2	.6	.1	(1)	.3	19.0

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 365.—*Hay, all: United States, stocks on farms, May 1, 1910–1925*

Year	Production of all hay preceding year	Per cent on farms May 1	On farms May 1	Price per ton May 1	Year	Production of all hay preceding year	Per cent on farms May 1	On farms May 1	Price per ton May 1
	Short tons	*Per cent*	*Short tons*			*Short tons*	*Per cent*	*Short tons*	
1910	92, 767, 000	11. 6	10, 745, 000	$11. 08	1918	98, 439, 000	11. 7	11, 476, 000	$17. 97
1911	82, 529, 000	12. 4	10, 222, 000	11. 69	1919	91, 139, 000	9. 4	8, 559, 000	22. 31
1912	67, 071, 000	8. 5	5, 732, 000	16. 31	1920	105, 398, 000	10. 2	10, 707, 000	24. 22
1913	90, 734, 000	14. 9	13, 523, 000	10. 42	1921	107, 245, 000	17. 9	19, 160, 000	13. 08
1914	79, 179, 000	12. 2	9, 631, 000	11. 63	1922	97, 849, 000	11. 2	10, 969, 000	12. 98
1915	88, 686, 000	12. 2	10, 797, 000	11. 03	1923	111, 879, 000	12. 0	13, 379, 000	12. 69
1916	107, 263, 000	13. 5	14, 452, 000	11. 27	1924	106, 611, 000	12. 0	12, 835, 000	13. 69
1917	110, 992, 000	11. 4	12, 659, 000	13. 94	1925	112, 817, 000	13. 9	15, 687, 000	12. 32

Division of Crop and Livestock Estimates.

TABLE 366.—*Hay: Receipts at 12 markets, 1910–1925*

Year beginning July	Baltimore	Boston	Chicago	Kansas City	Milwaukee	Minneapolis	New York	Peoria	Philadelphia	Pittsburgh	St. Louis	San Francisco	Total
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
1910	68, 589	162, 420	273, 983	308, 940	38, 313	66, 306	336, 471	37, 419	86, 851	119, 685	253, 540	184, 594	1, 937, 111
1911	69, 284	164, 196	351, 630	318, 948	44, 199	63, 570	286, 474	41, 822	96, 484	115, 608	256, 462	147, 483	1, 956, 160
1912	58, 939	139, 920	274, 769	343, 392	47, 138	37, 290	296, 866	38, 131	82, 063	106, 993	222, 998	141, 224	1, 789, 723
1913	63, 186	117, 740	369, 032	285, 288	36, 283	38, 280	317, 543	43, 660	75, 630	103, 466	261, 155	133, 598	1, 844, 861
1914	54, 904	115, 161	325, 095	398, 604	45, 060	45, 513	330, 098	33, 957	78, 583	83, 923	308, 727	161, 750	1, 981, 375
1915	50, 415	126, 590	273, 181	398, 172	34, 637	45, 376	294, 395	51, 299	84, 006	106, 710	232, 628	146, 560	1, 843, 969
1916	50, 874	123, 780	237, 932	359, 316	24, 360	35, 652	212, 256	48, 870	78, 284	92, 202	210, 591	104, 468	1, 578, 585
1917	64, 053	97, 150	352, 730	419, 964	23, 131	39, 126	199, 727	40, 250	61, 618	74, 075	237, 506	82, 460	1, 691, 790
1918	41, 870	67, 000	287, 031	386, 460	16, 656	28, 457	221, 580	35, 050	31, 571	72, 721	213, 043	72, 440	1, 473, 879
1919	32, 650	58, 740	225, 050	599, 340	19, 053	22, 601	167, 088	33, 306	52, 466	63, 680	254, 042	85, 807	1, 613, 823
1920	19, 559	50, 220	149, 801	337, 169	19, 466	23, 015	150, 338	21, 140	40, 057	79, 062	188, 550	75, 272	1, 153, 649
Av. 1914–1920	44, 904	91, 234	264, 403	414, 146	26, 052	34, 249	225, 069	37, 696	60, 941	81, 768	235, 012	104, 108	1, 619, 581
1921	13, 730	51, 250	135, 625	196, 534	19, 038	23, 467	98, 904	10, 970	51, 226	76, 162	121, 104	59, 185	857, 195
1922	15, 536	47, 010	152, 632	244, 169	17, 626	25, 972	92, 516	33, 060	42, 188	61, 769	138, 312	60, 017	930. 807
1923	26, 830	42, 910	149, 623	257, 774	17, 094	30, 024	84, 682	29, 470	49, 884	60, 918	136, 414	69, 583	955, 206
1924													
July	1, 371	4, 780	13, 720	15, 609	1, 144	2, 018	7, 614	730	3, 780	3, 987	9, 968	8, 268	72, 989
August	930	2, 010	6, 986	23, 705	686	1, 810	4, 487	3, 240	2, 088	1, 903	8, 470	5, 524	61, 839
September	809	2, 750	12, 275	23, 660	1, 275	1, 541	5, 461	4, 960	2, 856	1, 490	13, 932	3, 736	74, 745
October	1, 208	5, 210	19, 160	38, 424	874	3, 330	6, 774	4, 000	3, 456	5, 643	12, 072	4, 664	104, 815
November	1, 264	3, 170	14, 061	24, 936	1, 037	2, 298	4, 603	3, 630	3, 280	8, 514	15, 975	4, 490	87, 258
December	830	2, 790	13, 482	21, 240	850	2, 764	7, 586	1, 330	2, 232	4, 708	9, 852	4, 881	72, 545
1925													
January	1, 456	4, 060	16, 771	45, 732	966	3, 062	5, 104	1, 700	3, 216	5, 676	21, 396	5, 495	114, 634
February	898	2, 850	15, 929	32, 628	337	2, 779	2, 519	1, 660	2, 388	4, 422	12, 108	2, 657	81, 175
March	1, 416	9, 870	12, 749	32, 268	266	2, 866	2, 677	2, 230	1, 912	2, 750	5, 096	3, 866	77, 966
April	899	2, 210	9, 187	18, 180	504	2, 261	3, 636	3, 220	2, 140	4, 848	5, 720	3, 981	56, 777
May	1, 808	3, 480	12, 295	12, 192	565	1, 608	6, 511	860	3, 000	2, 100	4, 763	2, 164	51, 346
June	1, 098	3, 530	8, 760	15, 420	732	1, 326	4, 991	870	2, 536	(1)	3, 553	(1)	42, 816
Total	13, 978	46, 710	155, 375	303, 994	9, 236	27, 663	61, 963	28, 430	32, 884	46, 041	122, 905	49, 726	898, 905
July	887	3, 090	11, 856	30, 864	828	2, 104	8, 403	1, 600	1, 380	(1)	4, 829	10, 702	76, 543
August	795	7, 010	10, 611	30, 324	1, 145	2, 420	6, 410	5, 150	1, 272	(1)	6, 842	9, 812	81, 771
September	997	2, 720	16, 244	21, 564	1, 404	1, 282	4, 700	3, 650	2, 532	(1)	3, 740	5, 856	64, 689
October	1, 177	3, 020	15, 456	29, 580	1, 392	2, 389	8, 068	3, 390	2, 904	(1)	9, 603	5, 303	82, 282
November	1, 545	3, 490	17, 447	33, 180	1, 228	3, 789	7, 420	1, 350	3, 720	(1)	6, 842	3, 300	83, 311
December	1, 232	4, 340	14, 601	32, 352	2, 481	3, 018	4, 236	2, 080	2, 748	(1)	7, 447	2, 928	77, 463
Total six months	6, 633	23, 670	86, 215	177, 864	8, 478	15, 002	39, 237	17, 200	14, 556	(1)	39, 303	37, 901	466, 059

Division of Statistical and Historical Research. Compiled from Hay Trade Journal; Annual Reports of San Francisco Merchants' Exchange; Minneapolis Chamber of Commerce Reports and Daily Market Record; Chicago Board of Trade and Daily Trade Bulletin; Kansas City Grain Market Review.

[1] Not reported.

TABLE 367.—*Hay: Shipments from eight markets, 1910–1925*

Year beginning July	Baltimore	Chicago	Kansas City	Milwaukee	Minneapolis	Peoria	Pittsburgh	St. Louis	Total
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
1910	11,864	18,011	93,828	5,958	31,350	10,373	76,631	112,435	360,450
1911	13,267	49,160	58,896	4,445	28,910	17,222	75,420	146,285	393,595
1912	8,313	22,681	85,176	3,159	4,820	7,819	65,800	105,533	303,301
1913	8,995	39,184	78,756	9,718	5,500	16,077	65,148	139,376	362,754
1914	8,896	83,414	67,608	17,306	5,390	19,788	37,512	172,590	412,504
1915	9,681	55,791	73,668	6,841	4,156	9,676	87,216	90,415	337,444
1916	13,657	33,439	138,432	5,765	4,351	15,324	55,032	103,990	369,990
1917	26,913	62,665	222,912	5,293	7,042	10,621	20,536	177,240	533,222
1918	20,221	52,802	143,040	2,986	4,147	7,650	23,511	119,625	373,982
1919	4,118	32,637	276,492	5,270	6,925	6,151	26,267	111,695	469,555
1920		18,631	153,648	3,863	2,020	7,100	40,480	63,250	288,992
Av. 1914–1920		48,483	153,686	6,761	4,862	10,901	41,508	119,829	397,956
1921		9,700	50,748	10,435	3,531	4,520	31,569	43,610	154,053
1922		10,951	78,660	14,879	2,625	3,460	7,323	61,720	179,618
1923		14,280	101,048	6,121	3,584	2,130		54,452	181,615
1924		8,160	129,780	2,295	2,352	1,370		48,886	192,843
1924									
July		518	5,268	380	220	80		3,690	10,156
August		243	5,364	126	251	50		3,230	9,264
September		332	8,304		80	140		3,995	12,851
October		1,142	13,596	12	178	100		3,950	18,978
November		1,005	12,180	192	120	140		5,485	19,122
December		515	10,056	108	190	60		2,490	13,419
1925									
January		1,094	21,048	300	251	100		6,025	28,818
February		1,167	15,552	204	270	240		4,815	22,248
March		1,074	15,984	276	275	230		5,906	23,745
April		446	8,808	288	190	60		4,260	14,052
May		294	6,324	165	230	70		2,904	9,987
June		330	7,296	244	97	100		2,136	10,203
Total		8,160	129,780	2,295	2,352	1,370		48,886	192,843
July		617	12,876	140	191	180		2,904	16,908
August		173	12,204	60	144	50		2,304	14,935
September		459	11,196	206	75	190		3,538	15,664
October		1,228	11,940	240	128	370		3,960	17,866
November		1,098	14,796	132	646	130		3,889	20,691
December		2,236	17,700	263	339	540		4,488	25,566
Total six months		5,811	80,712	1,041	1,523	1,460		21,083	111,630

Division of Statistical and Historical Research. Compiled from Hay Trade Journal; Chicago Board of Trade, and Daily Trade Bulletin; Kansas City Board of Trade, and Grain Market Review; Minneapolis Daily Market Record; Peoria Board of Trade.

TABLE 368.—*Hay, tame: Estimated price per ton, received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	13.90	13.10	14.90	12.40	11.10	13.90	18.70	24.60	15.53	20.00	13.10	13.50	13.00	12.00	14.32
New Hampshire	16.62	17.00	17.40	14.50	12.00	18.80	24.00	25.00	18.39	28.00	19.50	19.00	18.50	18.50	20.70
Vermont	13.92	14.60	15.50	12.60	11.50	16.30	20.10	23.00	16.23	22.00	17.50	16.50	16.10	13.20	17.06
Massachusetts	20.72	21.50	22.00	19.00	19.90	26.00	27.00	28.00	23.34	27.00	23.00	26.00	24.00	23.00	24.60
Rhode Island	21.14	20.20	22.50	20.00	20.30	25.50	32.00	33.20	24.81	27.00	26.50	26.80	24.00	23.50	25.56
Connecticut	20.88	19.50	20.00	18.50	19.50	24.00	30.20	30.00	23.10	26.00	26.00	24.00	25.00	24.50	25.10
New York	15.20	14.60	15.70	11.90	15.10	20.40	20.50	23.60	17.40	18.00	14.10	16.20	14.50	14.60	15.48
New Jersey	19.14	19.50	19.00	17.60	20.00	28.00	29.10	27.50	22.96	18.00	18.10	26.90	19.00	20.00	20.40
Pennsylvania	16.02	14.50	15.60	13.80	17.50	23.70	24.00	23.50	18.94	17.00	14.30	21.50	16.00	17.00	17.16
Ohio	13.62	13.40	12.70	10.60	19.00	22.20	21.80	19.50	17.03	11.50	10.80	16.70	12.80	15.20	13.40
Indiana	12.94	14.10	11.00	10.90	18.70	19.80	21.60	19.30	16.49	13.00	11.20	15.60	12.50	15.50	13.56
Illinois	13.12	14.40	10.80	11.30	20.00	21.00	21.40	20.60	17.07	13.50	12.50	14.80	13.50	15.90	14.04
Michigan	13.56	12.00	12.20	10.00	17.20	23.50	23.40	21.00	17.04	13.00	10.10	14.50	12.10	16.50	13.24
Wisconsin	12.70	9.30	9.90	11.60	17.30	21.60	20.30	20.40	15.77	15.40	12.30	16.00	13.30	14.00	14.20
Minnesota	8.00	6.10	6.40	7.00	12.10	14.10	14.50	11.20	10.20	8.60	10.70	11.30	11.50	11.00	10.62
Iowa	9.66	10.10	8.70	9.00	16.80	18.20	17.40	16.24	13.78	9.30	10.00	12.50	11.40	13.50	11.34
Missouri	11.02	13.60	8.50	9.30	17.50	20.50	19.50	15.70	14.94	9.80	11.50	12.00	12.00	12.80	11.62
North Dakota	6.18	5.20	5.70	6.00	11.50	14.60	14.10	9.90	9.57	7.70	7.50	6.80	7.60	7.20	7.36
South Dakota	6.66	5.70	5.30	5.40	10.60	10.00	13.50	8.50	8.43	6.40	7.50	8.10	8.90	11.00	8.38
Nebraska	8.34	6.90	5.80	7.10	15.20	17.20	14.00	9.00	10.74	7.00	11.20	10.20	9.60	12.10	10.02
Kansas	8.76	7.40	5.60	7.60	16.60	19.40	15.80	10.20	11.80	8.00	9.30	10.60	11.20	12.10	10.24
Delaware	16.60	17.00	17.00	15.90	20.50	28.00	26.00	21.50	20.84	17.50	19.00	21.00	17.00	20.00	18.90
Maryland	16.36	15.30	16.20	14.00	19.90	26.80	24.00	25.00	20.17	15.10	18.50	23.60	16.40	19.00	18.52
Virginia	15.80	17.20	15.70	15.00	21.30	23.00	23.70	23.50	19.91	17.70	16.00	20.00	17.80	21.00	18.50
West Virginia	15.64	17.20	15.00	14.50	21.10	23.50	25.60	24.20	20.16	17.50	16.80	19.90	17.60	20.00	18.36
North Carolina	15.84	17.10	16.50	17.50	19.70	21.00	24.20	23.00	19.84	19.80	18.20	20.00	21.00	22.00	20.20
South Carolina	17.04	17.00	15.60	16.70	20.60	26.10	31.00	25.00	21.71	20.00	17.50	18.00	22.00	20.00	19.50
Georgia	16.82	16.20	15.10	16.20	20.00	23.50	25.30	23.50	19.97	15.80	17.00	18.90	19.00	21.00	18.34
Florida	17.36	17.20	16.00	16.00	18.20	18.50	23.00	19.00	18.27	19.50	18.50	20.00	20.00	23.00	20.20
Kentucky	14.50	16.00	12.50	12.60	20.30	23.70	25.40	22.00	18.93	15.50	14.50	17.00	18.00	18.70	16.74
Tennessee	14.98	17.00	13.90	15.00	19.30	24.00	27.00	20.50	19.53	15.50	16.40	18.50	20.00	22.00	18.48
Alabama	13.96	13.80	12.40	13.00	16.20	20.30	22.30	19.50	16.79	15.60	17.00	18.50	19.00	20.00	18.02
Mississippi	12.14	12.00	11.00	11.00	15.30	18.50	20.50	17.20	15.07	14.50	14.50	15.50	17.50	17.70	15.94
Arkansas	12.06	12.90	10.30	12.50	15.40	19.50	20.50	16.00	15.30	12.50	13.60	16.00	16.40	18.00	15.30
Louisiana	11.88	12.00	10.30	11.00	14.30	21.20	23.00	16.00	15.40	14.00	13.30	15.00	17.80	19.00	15.82
Oklahoma	8.30	7.90	5.60	9.00	15.40	19.50	15.10	10.50	11.86	8.20	12.50	14.30	13.30	16.00	12.86
Texas	11.60	9.80	7.90	10.50	20.00	24.90	18.00	13.40	14.93	9.90	11.50	16.00	16.80	18.80	14.60
Montana	10.08	8.70	7.50	11.00	18.60	19.60	23.00	12.00	14.34	8.70	9.00	8.90	10.00	10.00	9.32
Idaho	7.84	7.30	7.70	12.10	16.00	17.60	22.00	12.50	13.60	6.70	10.00	8.90	12.20	8.50	9.26
Wyoming	9.40	7.50	7.80	12.00	17.00	14.00	23.00	12.00	13.33	7.50	8.50	9.60	9.80	8.90	8.86
Colorado	9.76	7.40	7.60	11.00	16.60	15.50	18.50	12.00	12.66	6.90	11.20	11.30	11.00	12.00	10.48
New Mexico	11.24	9.30	8.80	14.00	21.00	20.00	18.20	17.00	15.47	12.70	19.50	16.00	15.40	15.00	15.72
Arizona	12.16	8.80	9.60	14.50	24.80	24.00	20.00	29.00	18.67	13.00	18.00	15.00	16.30	17.00	15.86
Utah	8.82	7.70	8.00	15.00	15.00	17.10	21.90	13.00	13.96	6.20	8.20	8.90	12.00	9.00	8.86
Nevada	10.10	8.30	7.50	9.60	15.90	19.90	19.60	16.00	13.83	9.00	11.80	11.00	14.20	9.00	11.00
Washington	12.54	11.00	10.80	13.80	20.00	25.40	23.00	18.50	17.50	10.50	16.20	12.00	15.50	15.00	13.84
Oregon	10.14	9.20	9.50	10.90	17.50	20.00	19.10	14.50	14.39	9.80	13.60	11.00	13.30	11.60	11.86
California	11.84	8.20	11.20	12.60	19.20	20.00	17.20	20.00	15.49	11.00	15.00	14.00	21.70	14.00	15.14
United States	12.25	11.12	10.63	11.22	17.09	20.13	20.05	17.76	15.43	12.11	12.56	14.13	13.76	13.99	13.31

Division of Crop and Livestock Estimates. As reported by crop reporters.

TABLE 369.—*Hay, all (loose): Estimated price per ton, received by producers, United States, 1909–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	10.12	9.70	9.85	10.19	10.42	10.48	10.90	11.48	11.57	11.30	10.96	10.80	10.61
1910	10.75	10.98	11.16	11.16	11.67	11.92	11.74	11.68	11.46	11.52	12.04	12.78	11.54
1911	13.51	13.73	13.58	13.57	13.95	14.02	14.07	14.52	15.15	15.98	16.26	15.27	14.35
1912	13.18	11.62	11.12	11.05	11.44	11.45	10.98	10.74	10.52	10.42	10.48	10.51	11.17
1913	10.45	10.74	11.24	11.48	11.97	12.06	11.68	11.68	11.60	11.58	11.64	11.46	11.49
Av. 1909–1913	11.60	11.35	11.39	11.49	11.89	11.99	11.87	12.02	12.06	12.16	12.28	12.16	11.83
1914	11.02	10.93	11.03	10.87	10.95	10.80	10.65	10.86	10.94	11.00	11.10	11.00	10.92
1915	10.52	10.07	9.89	9.90	9.92	9.97	10.31	10.65	10.80	11.06	11.37	11.28	10.40
1916	10.50	9.80	9.68	9.82	10.31	10.74	11.10	11.44	12.04	13.24	14.31	14.32	11.22
1917	13.43	13.08	13.54	14.50	15.85	17.32	18.48	19.01	18.91	18.32	17.55	16.60	16.30
1918	16.00	16.67	17.94	18.86	19.31	19.64	19.86	19.80	20.17	21.42	22.80	22.52	19.42
1919	20.94	20.34	20.16	19.58	19.40	20.00	21.16	22.04	22.62	23.58	24.54	24.24	21.27
1920	22.26	20.38	19.41	18.20	17.08	16.43	15.70	14.76	13.94	13.34	12.80	12.56	16.65
Av. 1914–1920	14.95	14.47	14.52	14.53	14.69	14.99	15.32	15.51	15.63	15.99	16.35	16.07	15.17
1921	12.17	11.72	11.53	11.24	11.19	11.29	11.34	11.58	12.05	12.64	12.82	12.28	11.74
1922	11.44	10.78	10.68	10.87	11.38	11.82	11.98	12.04	12.18	12.54	12.82	12.32	11.67
1923	11.78	11.98	12.25	12.44	12.75	13.15	13.59	13.60	13.63	13.73	13.65	13.75	12.98
1924	13.49	12.95	12.68	12.64	12.88	12.69	12.70	12.83	12.39	12.48	12.17	11.82	12.68
1925	12.48	12.25	12.42	12.47	13.07	13.40							

Division of Crop and Livestock Estimates. Mean of prices reported on 1st of month and 1st of succeeding month, July, 1909–December, 1923. As reported by country merchants.

TABLE 370.—*Hay, alfalfa: Estimated price per ton received by producers, United States, 1914–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1914	8.65	8.38	8.72	8.96	9.20	9.05	9.48	9.32	9.79	9.81	9.58	8.50	9.12
1915	8.28	8.28	8.22	8.14	8.72	9.52	9.89	10.35	10.74	10.73	10.56	10.49	9.39
1916	9.87	9.80	10.06	10.25	11.37	12.31	12.79	13.63	14.68	17.68	17.92	16.77	12.76
1917	14.13	15.28	16.33	17.59	19.19	20.39	21.27	21.38	20.82	18.97	17.84	16.74	18.42
1918	16.58	18.22	19.72	20.23	20.42	20.74	20.42	20.91	21.40	22.28	23.32	20.89	20.35
1919	20.15	20.72	20.89	20.56	21.63	22.95	24.13	24.41	24.68	24.57	25.68	24.20	22.70
1920	21.70	20.43	19.12	18.03	17.10	16.59	14.98	13.55	12.88	11.35	10.88	10.64	15.96
1921	9.85	9.66	9.86	9.82	9.67	10.46	10.55	11.04	11.80	12.39	12.28	10.98	10.58
1922	10.61	10.54	11.15	11.87	12.70	13.31	14.06	14.02	14.33	14.09	14.40	13.63	12.82
1923	12.45	12.01	12.78	13.37	13.59	14.39	13.99	14.08	13.98	14.09	14.12	13.70	13.54
1924	13.19	13.84	13.59	12.85	13.91	13.40	14.50	14.78	14.44	14.08	14.34	12.83	13.81
1925	13.02	13.00	12.91	13.41	13.74	14.14							

Division of Crop and Livestock Estimates.

TABLE 371.—*Hay, clover: Estimated price per ton received by producers, United States, 1914–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1914	11.85	12.09	12.44	12.47	12.70	12.76	13.07	13.36	13.41	13.65	13.79	12.78	12.83
1915	11.65	10.87	10.82	10.60	10.59	10.95	11.24	11.41	11.70	11.87	12.52	12.46	11.29
1916	10.84	9.93	10.01	10.08	10.46	10.86	11.38	11.65	11.90	13.06	13.94	14.22	11.33
1917	12.95	12.76	13.79	15.01	17.14	18.67	19.82	21.11	21.37	19.68	18.36	16.54	17.21
1918	15.73	17.18	19.27	20.60	21.13	21.26	21.69	21.11	21.28	23.36	25.33	25.48	20.93
1919	22.02	21.58	21.74	21.17	21.64	22.60	23.78	24.94	26.13	26.93	28.31	27.80	23.69
1920	24.62	22.82	22.57	21.29	20.60	19.96	19.17	17.39	16.44	15.47	14.90	14.52	19.48
1921	13.89	14.17	14.37	13.99	13.83	14.17	13.90	14.10	14.06	14.51	14.90	14.33	14.15
1922	12.82	12.66	12.54	12.51	12.67	13.03	13.39	13.35	13.24	13.47	13.58	13.70	13.03
1923	13.52	13.51	14.12	14.73	14.94	15.82	15.51	15.93	16.31	16.08	15.92	15.95	15.14
1924	15.45	14.00	13.75	13.65	13.64	13.45	13.25	13.30	12.52	12.41	12.67	12.26	13.43
1925	13.03	13.67	14.06	14.09	14.74	15.28							

Division of Crop and Livestock Estimates.

TABLE 372.—*Hay, timothy: Estimated price per ton, received by producers, United States, 1914–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1914	13.06	13.09	13.54	13.66	13.69	13.69	14.07	14.28	14.28	14.53	14.74	14.33	13.87
1915	13.43	12.39	12.32	12.14	12.24	12.73	13.11	13.39	13.61	14.00	14.50	14.71	13.09
1916	12.97	11.74	11.57	11.54	12.03	12.29	12.61	12.91	13.20	14.26	15.31	15.76	12.83
1917	14.68	14.11	14.89	16.23	18.33	20.31	21.37	22.25	22.53	21.47	20.40	18.55	18.67
1918	17.61	18.98	20.85	22.60	22.93	22.94	23.48	22.69	22.68	24.74	27.27	27.50	22.66
1919	24.22	23.89	23.65	23.04	22.90	23.71	24.59	25.49	26.75	27.99	29.92	30.05	25.13
1920	26.59	24.35	24.15	22.74	22.09	21.22	19.88	18.30	17.04	16.09	15.44	15.16	20.64
1921	14.51	15.01	14.83	14.39	14.22	14.31	14.51	14.77	15.06	15.52	16.10	15.75	14.82
1922	14.33	13.61	13.44	13.70	13.93	13.91	14.41	14.46	14.59	14.64	14.96	14.95	14.18
1923	14.86	14.68	15.13	16.22	16.78	16.95	16.96	17.25	17.53	17.53	17.48	17.52	16.53
1924	16.74	15.24	14.47	14.54	14.00	14.37	14.29	14.24	13.31	13.39	13.38	13.05	14.30
1925	13.89	14.06	14.98	15.11	15.38	15.87							

Division of Crop and Livestock Estimates.

TABLE 373.—*Hay, prairie: Estimated price per ton, received by producers, United States, 1914–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1914	7.49	7.29	7.33	7.59	7.49	7.37	7.65	7.86	8.03	8.58	8.29	7.72	7.69
1915	7.37	6.83	6.64	6.44	6.75	6.95	7.38	7.34	7.39	7.56	7.71	7.97	7.13
1916	7.25	6.96	7.21	7.26	7.85	8.14	8.58	8.60	9.32	10.94	12.02	11.84	8.61
1917	10.11	10.82	11.40	12.29	13.32	14.91	15.39	15.74	15.47	14.47	12.75	12.78	13.31
1918	12.51	13.26	14.35	15.06	15.47	16.30	16.33	16.35	17.38	18.85	20.22	18.71	16.03
1919	16.10	16.10	15.90	15.88	16.91	17.19	17.54	17.36	16.52	16.66	18.06	17.59	16.78
1920	15.38	13.74	12.93	11.83	11.47	10.80	10.20	9.46	8.70	8.43	8.05	8.02	10.94
1921	7.67	7.50	7.52	6.78	7.49	7.47	7.39	7.67	7.94	8.02	8.24	8.40	7.62
1922	7.68	7.76	7.54	7.74	8.13	8.98	9.44	9.52	9.61	9.74	10.64	10.07	8.79
1923	9.17	8.97	8.58	9.19	9.07	9.26	8.84	8.87	8.66	8.78	8.74	8.54	8.92
1924	8.35	8.60	8.49	8.25	8.25	8.62	9.14	9.08	9.05	9.11	9.27	8.55	8.70
1925	8.93	8.55	9.24	9.41	9.39	9.78							

Division of Crop and Livestock Estimates.

TABLE 374.—*Hay, alfalfa No. 1: Average price per ton at Kansas City, 1910–1925*

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	12.08	13.50	13.89	14.25	14.25	14.23	13.51	12.93	13.07	13.67	13.29	12.38	13.42
1911	15.13	14.44	14.87	15.09	15.27	15.50	17.72	18.37	20.49	22.73	19.34	11.62	16.71
1912	12.59	13.00	13.58	15.11	15.11	15.00	14.79	12.86	14.06	13.75	13.28	10.70	13.65
1913	12.12	14.89	16.14	16.54	16.00	16.01	15.96	15.25	15.18	15.30	15.54	14.23	15.26
1914	12.38	13.42	13.33	12.51	13.21	13.79	13.75	13.73	14.75	15.11	13.73	13.42	13.59
1915	11.54	11.90	12.25	13.11	12.83	14.35	14.54	15.34	13.92	14.44	14.45	11.42	13.34
1916	11.29	13.40	13.58	15.68	18.50	19.33	19.81	20.25	21.10	24.33	24.52	21.87	18.64
1917	21.18	24.09	24.07	27.43	31.10	32.76	30.01	31.33	27.56	24.11	22.64	20.57	26.40
1918	22.60	29.08	31.45	30.14	31.21	31.01	32.85	31.01	34.56	37.90	36.20	36.43	32.04
1919	26.93	27.63	24.86	30.24	33.39	35.10	35.75	34.83	33.79	34.10	35.46	31.75	31.99
1920	27.21	29.49	27.22	23.95	25.05	23.01	23.30	20.30	20.30	21.00	22.20	18.40	23.45
Average 1914–1920	19.02	21.29	20.97	21.87	23.61	24.19	24.29	23.83	23.71	24.43	24.17	21.98	22.78
1921	17.50	19.00	17.20	19.80	20.40	19.60	20.00	19.60	22.10	22.50	22.10	15.40	19.60
1922	15.50	15.80	18.30	22.60	23.80	23.00	23.40	23.70	24.60	26.25	25.90	22.90	22.15
1923	18.90	20.90	22.80	24.90	24.80	24.90	25.30	23.50	24.70	26.10	24.50	18.00	23.28
1924	18.60	20.00	20.25	20.80	21.25	22.70	22.70	19.25	19.60	18.90	19.20	17.50	20.06
1925	18.20	19.50	20.10	21.50	21.25	21.40							

Division of Statistical and Historical Research. Compiled from Kansas City Daily Price Current and Kansas City Grain Market Review, average of daily range; 1925 from reports of the Hay, Feed, and Seed Division, weekly.

TABLE 375.—*Hay, prairie No. 1: Average price per ton at Kansas City, 1910–1925*

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols*
1910	10.83	10.82	11.67	11.34	11.16	10.86	11.07	10.95	10.84	11.31	11.55	13.61	11.33
1911	15.93	12.93	11.50	11.60	12.07	12.61	13.84	13.66	16.70	20.85	20.48	15.16	14.78
1912	8.79	7.96	8.39	8.96	8.91	9.39	10.45	9.37	9.19	9.56	9.53	9.97	9.21
1913	10.60	13.62	15.76	16.00	15.66	15.57	14.20	14.50	14.40	16.00	16.42	15.43	14.85
1914	12.10	9.96	11.58	11.35	10.94	10.98	11.25	10.89	11.26	11.41	11.02	11.03	11.15
1915	11.32	8.65	8.63	9.71	9.54	8.97	8.84	9.15	8.96	9.50	9.74	8.65	9.30
1916	8.50	8.06	9.36	9.47	10.74	11.15	10.57	10.92	12.92	18.68	19.74	20.57	12.56
1917	18.14	18.57	18.06	19.60	25.07	25.47	24.00	23.79	23.42	21.13	19.17	17.66	21.17
1918	19.26	25.25	26.57	27.58	26.84	24.04	28.25	26.82	32.35	36.63	38.91	37.34	29.15
1919	20.89	19.98	19.32	19.75	21.12	25.34	21.40	20.68	20.64	21.70	24.02	18.95	21.15
1920	17.21	19.52	18.47	16.45	16.13	14.49	14.00	13.10	14.10	13.70	14.10	13.40	15.39
Average 1914–1920	15.35	15.71	16.00	16.27	17.20	17.21	16.90	16.48	17.66	18.96	19.53	18.23	17.12
1921	12.30	11.40	11.30	12.40	12.00	11.30	11.10	10.30	11.50	11.90	12.40	11.90	11.65
1922	12.90	10.70	11.00	14.00	14.20	12.70	12.60	13.25	14.60	19.10	19.10	18.60	14.40
1923	11.80	11.50	13.80	14.60	14.75	14.75	14.80	14.50	14.80	14.50	13.90	12.50	13.85
1924	11.60	11.60	11.00	12.40	11.60	11.90	11.00	10.40	10.50	10.30	10.60	10.75	11.14
1925	11.60	11.30	12.75	14.40	13.75	14.10							

Division of Statistical and Historical Research. Compiled from Kansas City Daily Price Current and Kansas City Grain Market Review, average of daily range; 1925 from reports of the Hay, Feed, and Seed Division, weekly.

TABLE 376.—*Hay, timothy No. 1: Average price per ton at Chicago, 1910–1925*

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	18.75	19.50	17.25	17.25	17.50	17.50	18.00	16.25	16.25	17.75	21.00	21.75	18.23
1911	23.50	21.50	20.00	20.50	21.25	21.00	21.75	20.75	21.50	24.00	26.00	21.25	21.92
1912	19.75	18.50	18.50	18.00	17.00	15.50	15.75	14.25	14.75	15.50	15.25	14.25	16.42
1913	15.00	17.75	17.75	18.00	17.00	16.25	15.50	14.75	15.25	16.00	16.25	15.25	16.23
1914	16.25	16.75	15.50	15.25	15.50	15.50	16.25	15.50	15.25	16.25	17.00	17.50	16.04
1915	19.25	20.25	19.00	17.00	15.50	15.50	16.25	15.50	16.75	18.75	18.75	18.00	17.54
1916	16.00	16.00	15.50	16.25	16.25	16.25	15.50	15.75	15.75	18.00	20.50	18.75	16.71
1917	17.75	19.25	21.00	25.00	27.25	27.00	28.25	29.00	28.00	24.00	23.00	19.00	24.04
1918	21.50	26.50	32.00	31.00	30.00	30.00	29.50	26.00	30.50	33.50	35.50	33.00	29.92
1919	34.50	35.00	29.00	28.00	29.50	30.00	32.50	34.00	35.25	43.00	46.50	42.75	35.00
1920	38.50	40.25	33.75	32.25	32.00	28.50	26.90	24.40	25.30	23.80	21.90	22.50	29.17
Average 1914–1920	23.39	24.86	23.68	23.54	23.71	23.25	23.59	22.88	23.83	25.33	26.16	24.50	24.06
1921	24.40	24.00	24.20	22.60	22.90	21.90	22.50	21.80	23.60	26.80	25.70	23.60	23.67
1922	24.50	22.00	20.90	22.40	23.00	21.10	21.75	21.50	23.00	23.00	23.10	24.00	22.52
1923	24.00	25.20	26.60	26.50	26.80	27.10	26.80	24.80	25.30	26.20	26.30	25.20	25.90
1924	25.00	25.40	24.40	22.90	22.80	23.00	23.30	22.75	23.00	22.75	21.75	24.00	23.42
1925	24.10	26.00	26.00	26.20	24.75	24.40							

Division of Statistical and Historical Research. Compiled from Chicago Board of Trade and Daily Trade Bulletin, average of daily range; 1925 from reports of the Hay, Feed and Seed Division, weekly.

TABLE 377.—*Hay and straw: Average price per ton at Chicago, 1925*

Class and grade	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dos.*	*Dols.*	*Dols.*
Alfalfa No. 1	23.00	22.50	19.60	18.75	18.60	21.25	21.75	22.20	24.00	24.20	24.40	24.00
Alfalfa, standard	18.00	18.00	15.25	15.50	14.00	18.00	19.50	19.80	20.00	20.60	21.25	22.00
Alfalfa No. 2	15.20	14.50	13.10	12.25	11.00	15.50	17.50	17.60	18.00	18.00	18.25	20.00
Clover No. 1	18.00	15.50	15.00	15.00	15.00	17.10	17.70	18.20	18.50	20.20	21.50	22.10
Clover No. 1:												
Medium mixed	19.30	17.50	18.00	18.00	17.70		19.20	21.20	21.80	22.30	22.25	22.00
Light mixed	20.80	19.50	19.10	19.25	20.00	22.10	22.50	24.40	24.40	24.80	23.60	24.40
Clover No. 2, light mixed	18.00	17.00	16.00	16.40	16.75	19.10	19.60	22.10	21.75	22.10	21.10	21.60
Prairie No. 1:												
Midland	13.70	13.00	12.50	13.00	13.00	13.75	14.00	14.00	14.00	14.00	14.25	13.75
Upland	17.80	16.25	15.50	15.75	16.00	17.50	17.50	18.40	17.25	19.00	20.00	19.75
Prairie No. 2, upland	15.60	15.00	14.00	13.50	13.60	15.25	15.50	16.50	16.50	17.50	18.00	17.75
Timothy No. 1	23.30	22.75	23.00	22.75	21.75	24.00	24.10	26.00	26.00	26.20	24.75	24.40
Timothy No. 2	18.60	17.40	17.00	17.25	17.90	20.10	21.25	23.10	23.25	23.60	22.25	22.10
Oat straw	10.80	9.00	9.10	9.90	9.50	10.90	10.50	10.30	8.75	10.80	11.50	11.50
Rye straw	12.90	11.10	11.10	11.75	10.40	13.10	11.90	11.70	11.90	13.50	16.00	13.50
Wheat straw	10.40	8.10	8.50	9.25	8.80	10.00	10.00	8.60	8.25	10.00	11.10	11.00

Division of Statistical and Historical Research. Compiled from reports of the Hay, Feed, and Seed Division, average of weekly range.

TABLE 378.—*Hay and straw: Average price per ton at Kansas City, 1925*

Class and grade	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Alfalfa No. 1	22.70	19.25	19.60	18.90	19.20	17.50	18.20	19.40	20.10	21.40	21.25	21.40
Alfalfa, standard	19.60	16.60	16.75	15.80	16.25	15.60	16.50	17.20	17.75	19.20	19.25	19.60
Alfalfa No. 2	17.10	14.10	13.25	12.40	13.75	13.30	13.75	14.20	14.60	16.40	17.70	18.10
Clover No. 1	16.80	15.60	13.40	12.00	10.75	10.75	10.60	12.60	14.50	15.40	16.50	18.40
Clover No. 1:												
Mixed	15.40	14.50	14.00	13.75	13.60	13.60	13.60	14.50	15.60	16.60	16.90	17.80
Light mixed	16.50	15.50	15.25	15.10	14.50	15.00	14.60	16.00	16.90	18.10	18.40	18.90
Prairie No. 1, upland	11.00	10.40	10.50	10.30	10.60	10.75	11.60	11.30	12.75	14.40	13.75	14.10
Prairie No. 2, upland	10.00	9.10	9.80	9.00	8.70	9.00	10.40	10.00	12.00	13.00	12.75	12.90
Timothy No. 1	17.00	15.90	15.25	15.20	14.60	15.75	15.10	16.10	17.40	18.70	18.90	19.60
Timothy No. 2	14.70	13.50	13.10	12.90	11.80	13.00	12.70	13.75	14.60	15.50	16.70	17.40
Wheat straw	8.30	7.00	7.00	8.10	8.30	8.30	8.20	6.60	6.50	8.25	9.10	8.90

Division of Statistical and Historical Research. Compiled from reports of the Hay, Feed, and Seed Division, average of weekly range.

TABLE 379.—*Hay and straw: Average price per ton at St. Louis, 1925*

Class and grade	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Alfalfa No. 1	32.00	30.00	25.00	27.70	-----	20.00	-----	-----	25.00	30.00	30.00	27.75
Alfalfa, standard	24.30	25.00	23.00	22.50	-----	-----	-----	21.00	22.00	25.50	24.80	25.00
Alfalfa No. 2	19.20	17.25	17.00	15.00	17.00	17.00	16.80	18.40	17.20	21.25	21.50	23.00
Clover No. 1	20.50	18.10	15.50	15.50	-----	19.00	-----	20.00	19.00	-----	23.00	24.75
Clover No. 1:												
Mixed	-----	-----	17.00	-----	18.00	18.50	-----	21.10	21.00	23.80	-----	-----
Light mixed	18.00	-----	-----	17.00	18.00	22.75	21.00	23.00	-----	-----	23.30	23.75
Clover No. 2, light mixed	16.50	-----	-----	14.30	14.75	21.00	18.70	-----	-----	19.00	21.10	20.75
Prairie No. 1, upland	15.60	16.10	15.75	15.90	15.40	16.40	16.00	16.20	15.60	18.40	18.90	19.10
Prairie No. 2, upland	12.90	13.75	12.75	13.00	12.70	14.00	14.10	14.40	14.50	17.00	16.70	17.60
Timothy No. 1	23.30	21.10	21.25	21.40	21.30	24.60	24.80	24.10	26.00	27.40	27.75	28.00
Timothy No. 2	17.40	16.75	15.60	16.50	16.60	18.50	19.25	19.70	20.00	21.30	21.50	22.10
Wheat straw	10.00	-----	8.00	-----	-----	-----	8.75	7.40	-----	-----	-----	-----

Division of Statistical and Historical Research. Compiled from reports of the Hay, Feed, and Seed Division, average of weekly range.

TABLE 380.—*Hay, No. 1 alfalfa: Average price per ton at 20 markets, 1925*

Market	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Atlanta	35.70	33.00	33.75	32.30	30.40	30.00	30.00	31.00	35.00	35.25	35.00	35.60
Birmingham [1]	35.50	34.50	34.25	33.50	31.00	30.00	31.50	33.00	33.00	-----	34.75	-----
Chicago [2]	23.00	22.50	19.60	18.75	18.60	21.25	21.75	22.20	24.00	24.20	24.40	24.00
Cincinnati	27.00	23.25	23.00	23.25	19.50	19.50	20.00	22.80	23.00	24.20	24.00	24.70
Denver	17.70	17.50	14.90	14.50	15.30	18.60	18.25	18.75	18.75	19.60	19.00	18.30
Detroit [3]	16.50	16.50	-----	-----	-----	15.50	19.20	20.00	-----	20.80	21.50	21.25
Fort Worth [1]	-----	-----	27.25	27.50	28.25	27.75	28.75	29.00	-----	-----	30.75	30.00
Kansas City	22.70	19.25	19.60	18.90	19.20	17.50	18.20	19.50	20.10	21.50	21.25	21.40
Los Angeles	29.00	28.00	23.20	22.10	21.30	19.00	18.00	19.10	20.70	20.50	21.50	22.80
Memphis	29.60	27.60	27.30	27.60	26.00	23.10	24.10	24.30	26.25	28.80	29.10	29.90
Minneapolis	23.80	21.75	21.00	20.00	21.40	21.25	18.25	18.40	20.00	20.60	21.00	21.00
New Orleans	31.75	30.60	29.60	28.90	28.80	27.30	27.70	29.10	30.00	32.30	32.25	31.50
New York [2, 4]	30.50	30.25	29.80	30.00	29.30	29.00	27.50	29.50	30.00	30.20	30.40	27.00
Omaha	18.70	17.00	15.75	16.00	15.60	16.70	16.75	17.00	17.75	18.25	19.50	19.50
Richmond [2]	30.20	28.75	27.90	27.50	23.80	24.75	28.25	30.40	31.75	32.00	31.90	32.00
St. Joseph [1]	23.00	21.75	-----	-----	-----	-----	18.00	18.00	-----	-----	-----	-----
St. Louis	32.00	30.00	25.00	27.70	-----	20.00	-----	-----	25.00	30.00	30.00	27.75
St. Paul [1]	24.00	22.50	20.50	20.50	21.50	20.00	18.25	19.25	20.00	-----	-----	-----
San Francisco	26.00	25.75	21.30	19.00	15.50	15.25	15.25	16.80	17.00	16.20	17.25	18.00
Savannah	31.00	-----	30.00	29.50	30.00	29.60	29.90	29.50	32.00	32.60	33.00	31.00

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division, except where noted.

[1] National Hay Press, monthly.
[2] Based on United States grades.
[3] Hay Trade Journal, weekly.
[4] Large bales.

TABLE 381.—*Hay, No. 1 timothy: Average price per ton at 29 markets, 1925*

Market	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Atlanta	26.30	24.60	24.60	24.20	25.10	26.00	27.75	27.00	29.50	29.50	30.00	29.75
Baltimore	21.90	21.90	21.10	20.00	19.20	19.40	19.90	21.10	22.40	24.90	25.40	25.50
Birmingham [1]	26.50	26.00	26.50	25.75	24.50	25.25	27.00	28.00	31.50	------	31.00	------
Boston [2]	26.40	26.10	25.50	25.10	25.00	24.90	25.25	25.90	26.50	26.50	26.60	26.25
Chattanooga [1]	24.75	24.25	24.00	23.75	24.25	24.75	26.00	27.50	------	------	------	------
Chicago [3]	23.30	22.75	23.00	22.75	21.75	24.00	24.10	26.00	26.00	26.20	24.75	24.40
Cincinnati	18.50	18.25	18.10	18.50	17.70	20.90	21.90	23.70	25.25	25.30	25.25	26.00
Cleveland [1]	------	18.75	18.50	18.00	------	20.00	20.00	21.50	23.00	------	24.00	------
Denver	17.70	18.00	17.90	17.50	18.00	19.60	19.00	19.60	18.75	19.60	19.50	19.20
Des Moines [1]	14.00	12.75	12.50	12.25	13.50	14.50	14.50	15.00	15.25	------	17.50	------
Detroit [4]	17.50	16.25	16.25	16.25	16.40	17.60	22.80	24.75	23.75	23.75	24.75	24.75
Duluth [1]	16.50	16.00	15.75	15.75	16.00	16.00	16.25	16.75	17.00	16.50	16.00	16.00
Indianapolis [1]	16.25	16.00	15.75	15.75	------	19.25	19.25	19.25	------	22.75	23.75	24.25
Jacksonville [1]	26.25	25.75	25.75	25.50	25.25	27.25	28.25	27.75	------	------	------	------
Kansas City	17.00	15.90	15.25	15.20	14.60	15.75	15.10	16.10	17.40	18.70	18.90	19.60
Louisville [1]	18.75	18.25	18.00	18.00	18.00	18.00	19.00	22.00	24.50	24.50	24.00	24.25
Memphis	23.60	21.50	22.10	22.25	22.20	24.70	23.50	23.20	25.50	26.20	26.00	26.40
Milwaukee [1]	17.25	16.50	15.75	15.50	15.75	17.00	18.75	19.00	18.75	19.75	20.00	19.50
Minneapolis	17.90	17.40	17.25	16.75	17.00	17.75	16.90	17.10	17.10	18.70	17.50	16.75
New Orleans	27.00	25.90	25.50	24.90	24.50	26.00	26.40	26.60	27.00	29.50	30.60	29.70
New York [2, 3]	26.50	26.40	25.25	25.25	25.50	25.40	25.75	27.70	29.00	29.00	29.40	28.70
Norfolk [1]	22.00	21.50	21.00	21.25	21.50	23.50	------	------	------	------	------	------
Pittsburgh	21.00	20.60	20.00	20.75	20.00	21.10	23.25	24.40	25.25	26.40	25.40	26.70
Richmond [3]	23.20	22.40	22.10	22.60	21.20	22.75	27.10	28.10	28.00	27.80	27.75	28.20
St. Joseph [1]	16.50	15.50	14.50	------	------	------	15.50	15.50	------	------	------	------
St. Louis	23.30	21.10	21.25	21.40	21.30	24.60	24.80	24.10	26.00	27.40	27.75	28.00
St. Paul [1]	18.00	17.50	16.50	16.50	16.50	16.50	17.25	17.25	17.00	------	17.00	16.50
Savannah	27.10	26.00	25.50	25.75	25.75	28.10	29.75	29.00	31.75	32.50	32.00	30.00
Winnipeg [1]	21.00	21.00	19.75	19.75	20.50	21.50	19.25	16.50	15.50	16.00	16.75	15.75

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division, except where noted.

[1] National Hay Press, monthly.
[2] Large bales.
[3] Based on United States grades.
[4] Hay Trade Journal, weekly.

TABLE 382.—*Hay, No. 1 clover: Average price per ton at 12 markets, 1925*

Market	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Baltimore	------	19.25	18.75	17.75	17.60	17.40	------	------	------	------	23.50	23.50
Chicago [1]	18.00	15.50	15.00	15.00	15.00	17.10	17.70	18.20	18.50	20.20	21.50	22.10
Cincinnati	17.80	16.25	15.90	16.40	16.10	17.40	18.75	20.00	20.75	23.70	24.10	24.50
Cleveland [2]	------	16.00	15.50	15.00	------	17.00	17.00	18.00	19.00	------	20.00	------
Detroit [3]	14.50	14.50	13.50	------	13.50	14.40	17.30	19.50	19.50	19.50	20.50	20.50
Indianapolis [2]	14.25	14.00	13.75	13.75	14.00	14.25	14.25	14.25	------	18.75	19.50	19.25
Kansas City	16.80	15.60	13.40	12.00	10.75	10.75	10.60	12.50	14.50	15.40	16.50	18.40
Louisville [3]	18.25	17.75	16.50	16.00	16.00	16.00	17.00	19.00	20.50	21.00	21.00	------
Pittsburgh	19.20	18.25	17.00	16.60	15.60	16.25	19.00	19.75	20.25	22.60	24.40	25.50
Richmond [1]	23.10	22.60	22.10	21.50	19.25	22.00	24.75	26.70	27.25	27.00	27.00	27.20
St. Louis	20.50	18.10	15.50	15.50	------	19.00	------	20.00	19.00	------	23.00	24.75
St. Paul [2]	18.00	17.00	14.50	14.00	15.00	14.50	14.50	15.00	15.00	------	16.00	16.00

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division, except where noted.

[1] Based on U. S. Grades.
[2] National Hay Press, monthly.
[3] Hay Trade Journal, weekly.

TABLE 383.—*Hay, No. 1 light clover mixed: Average price per ton at 16 markets, 1925*

Market	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Atlanta	25.90	24.10	23.90	23.70	24.60	24.90	26.75	26.00	28.50	28.40	29.00	28.75
Baltimore	19.60	19.75	19.10	17.90	17.75	17.25	17.90	18.80	20.00	23.20	23.75	23.75
Chicago [1]	20.80	19.50	19.10	19.25	20.00	22.10	22.50	24.40	24.40	24.80	23.60	24.40
Cincinnati	17.70	17.00	16.90	16.90	16.60	19.25	20.40	22.50	23.75	23.90	23.25	24.50
Detroit [2]	16.50	15.00	15.00	15.00	15.70	16.50	22.50	23.50	22.50	22.40	23.00	23.10
Jacksonville [3]	25.00	25.00	23.25	23.50	25.50	25.75	27.00	26.50	------	------	------	------
Kansas City	16.50	15.50	15.25	15.10	14.50	15.00	14.60	16.00	16.90	18.10	18.40	18.90
Louisville [3]	17.75	17.25	17.00	17.00	------	17.00	17.75	20.75	23.50	23.50	23.00	23.25
Milwaukee [3]	16.75	16.00	15.50	15.00	16.50	16.50	18.25	18.50	18.00	18.75	19.50	19.00
Minneapolis	15.50	15.80	15.80	15.25	15.75	------	16.50	------	16.00	------	------	------
New York [1,4]	24.75	24.50	22.75	22.40	23.20	23.00	23.60	25.90	27.10	27.00	27.10	26.30
Philadelphia [1]	20.80	20.10	18.60	18.40	18.20	17.60	18.10	19.60	21.10	22.80	23.90	23.60
Pittsburgh	18.80	17.75	16.60	16.75	16.50	17.50	20.00	20.75	21.00	22.75	22.70	24.20
Richmond [1]	22.50	22.10	21.50	21.60	20.80	21.60	26.10	27.10	27.00	26.90	27.25	27.20
St. Louis	18.00	------	------	17.00	18.00	22.75	21.00	23.00	------	------	23.30	23.75
Savannah	25.30	24.00	23.90	23.75	23.70	26.10	27.25	26.00	29.80	30.50	30.50	------

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division, except where noted.

[1] Based on U. S. grades.
[2] Hay Trade Journal, weekly.
[3] National Hay Press, monthly.
[4] Large bales.

TABLE 384.—*Hay, No. 1 prairie: Average price per ton at 12 markets, 1925*

Market	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Chicago [1]	17.80	16.25	15.50	15.75	16.00	17.50	17.50	18.40	17.25	19.00	20.00	19.75
Denver [2]	13.50	13.75	------	------	------	13.50	13.75	14.25	14.25	------	------	------
Des Moines [2]	12.25	11.25	11.50	12.00	12.25	12.75	13.00	14.25	14.25	------	15.50	------
Duluth [2]	16.00	16.00	15.75	15.25	15.50	16.00	15.75	15.25	15.50	16.00	16.00	16.00
Fort Worth [2]	------	------	17.25	17.50	17.50	18.00	19.75	20.50	------	------	22.25	22.75
Kansas City	11.00	10.40	10.50	10.30	10.60	10.75	11.60	11.30	12.75	14.40	13.75	14.10
Minneapolis	16.70	16.10	16.10	15.50	16.00	17.00	16.00	14.80	15.50	16.80	16.00	15.75
New Orleans	18.60	18.30	18.30	17.75	17.60	16.40	16.90	18.75	------	19.75	20.90	20.75
Omaha	12.30	11.25	10.75	10.50	10.90	11.90	12.30	13.50	13.70	14.25	14.75	14.75
St. Louis	15.60	16.10	15.75	15.90	15.40	16.40	16.00	16.20	15.60	18.40	18.90	19.10
St. Paul [2]	17.00	16.50	15.00	15.00	15.50	15.25	14.75	15.00	16.00	------	15.50	15.00
Winnipeg [2]	14.50	14.00	------	13.00	13.00	13.25	12.50	11.00	10.50	10.50	10.25	9.75

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division, except where noted.

[1] Based on United States grades.
[2] National Hay Press, monthly.

PASTURE

TABLE 385.—*Pasture: Condition, 1st of month, United States, 1909–1925*

Year	May	June	July	Aug.	Sept.	Oct
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P ct.*	*P. ct.*
1909	80.1	89.3	93.1	84.8		
1910	89.3	88.5	81.6	73.0		
1911	81.3	81.8	69.6	59.6		
1912	81.7	93.7	84.9	86.6		
1913	87.1	89.2	81.2	73.7		
Average 1909–1913	83.9	88.5	82.1	75.5		
1914	88.3	89.8	82.1	76.2		
1915	87.2	91.3	91.3	96.1	98.5	96.5
1916	85.2	93.4	97.7	86.9	80.4	76.9
1917	81.9	83.8	89.9	85.5	82.4	78.4
1918	83.1	92.5	84.5	75.4	69.9	77.3
1919	90.3	97.4	95.2	83.9	80.2	78.2
1920	79.8	88.8	89.5	86.3	86.2	86.2
Average 1914–1920	85.1	91.0	90.0	84.3	82.9	82.2
1921	91.8	90.1	80.8	74.3	81.6	84.8
1922	84.5	93.8	89.0	87.9	81.3	76.0
1923	77.0	84.8	85.5	77.6	78.8	83.1
1924	80.2	82.2	87.6	84.0	80.8	82.6
1925	86.5	78.1	76.5	75.7	72.6	76.9

Division of Crop and Livestock Estimates.

HOPS

TABLE 386.—*Hops: Acreage, production, and farm value, United States, 1915–1925*

Year	Acreage	Average yield per acre	Production	Price per pound received by producers Dec. 1	Farm value
	Acres	*Pounds*	*1,000 pounds*	*Cents*	*1,000 dollars*
1915	44, 653	1, 186. 6	52, 986	11. 7	6, 203
1916	43, 900	1, 152. 5	50, 595	12. 0	6, 073
1917	29, 900	982. 9	29, 388	33. 3	9, 795
1918	25, 900	829. 4	21, 481	19. 3	4, 150
1919	21, 000	1, 189. 0	24, 970	77. 6	19, 376
1920	28, 000	1, 224. 3	34, 280	35. 7	12, 236
1921	27, 000	1, 086. 7	29, 340	24. 1	7, 080
1922	23, 400	1, 185. 6	27, 744	8. 6	2, 383
1923	18, 440	1, 071. 1	19, 751	18. 8	3, 722
1924	20, 350	1, 359. 7	27, 670	10. 3	2, 863
1925 [1]	20, 350	1, 404. 1	28, 573	21. 8	6, 232

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 387.—*Hops: Acreage, production, and farm value, by States, 1924 and 1925*

State	Acreage		Average yield per acre		Production		Price per pound received by producers Dec. 1		Farm value	
	1924	1925 [1]	1924	1925	1924	1925 [1]	1924	1925	1924	1925 [1]
	Acres	*Acres*	*Pounds*	*Pounds*	*1,000 pounds*	*1,000 pounds*	*Cents*	*Cents*	*1,000 dols.*	*1,000 dols.*
Washington	2, 350	2, 350	1, 817	2, 116	4, 270	4, 973	10. 0	21. 0	427	1, 044
Oregon	12, 000	13, 000	1, 150	1, 200	13, 800	15, 600	10. 0	23. 0	1, 380	3, 588
California	6, 000	5, 000	1, 600	1, 600	9, 600	8, 000	11. 0	20. 0	1, 056	1, 600
Total	20, 350	20, 350	1,359.7	1,404.1	27, 670	28, 573	10. 3	21. 8	2, 863	6, 232

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 388.—*Hops: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913	1922	1923	1924	1925 preliminary
NORTH AMERICA	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Canada [2]	[3] 718	507	507	507	[4] 640	[3] 1,429	1,343	1,972	1,604	-------
United States [5]	[6]45,000	23,400	18,440	20,350	20,356	[6] 1,103	1,186	1,071	1,360	1,404
EUROPE										
England and Wales	33,797	26,452	24,893	25,897	26,256	977	1,274	1,030	1,925	1,514
Belgium	3,313	4,258	2,975	3,123	3,158	1,319	788	1,073	1,754	1,695
France	17,072	10,430	10,166	10,052	9,573	788	857	495	1,113	1,008
Germany	56,267	29,687	28,691	28,738	30,821	515	462	244	432	345
Austria	[7] 6,210	242	264	300	-------	[7] 573	355	371	300	-------
Czechoslovakia	[7]38,385	19,408	19,177	20,242	22,400	[7] 599	641	356	1,085	644
Hungary	[7] 628	131	79	178	-------	[7] 814	687	759	596	-------
Yugoslavia	3,749	4,502	3,991	5,503	5,200	725	699	837	876	-------
Rumania	[7] 664	[4] 371	[4] 371	[4] 371	-------	825	593	296	593	-------
Poland	11,963	4,823	4,895	4,964	-------	493	738	584	653	-------
OCEANIA										
Australia	1,251	1,741	-------	-------	-------	1,285	1,383	-------	-------	-------
New Zealand	[6] 653	675	701	-------	-------	-------	1,587	1,374	-------	-------
Total countries reporting for all periods 1909–1913 to 1925	200,301	118,644	108,840	114,412	118,398	-------	-------	-------	-------	-------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated.

[1] Figures for Europe are estimates for present boundaries.
[2] British Columbia.
[3] Two-year average.
[4] Unofficial.
[5] Principal producing States.
[6] One year only.
[7] Four-year average.

TABLE 389.—*Hops: Production in specified countries, average 1909–1913, annual 1922–1925*

[Thousand pounds—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTH AMERICA					
Canada [2]	[3] 1,026	681	1,000	813	-------
United States [4]	53,654	27,744	19,751	27,670	28,573
EUROPE					
England and Wales	33,021	33,712	25,648	49,840	39,760
Belgium	7,008	3,344	3,192	5,478	5,353
France	13,459	8,940	5,036	11,187	9,646
Germany	28,961	13,704	7,011	12,418	10,646
Austria	[5] 3,560	86	98	90	-------
Czechoslovakia	[5] 22,997	12,439	6,819	21,967	14,416
Hungary	[5] 511	90	60	106	[6] 84
Yugoslavia	2,718	3,148	3,340	4,818	[6] 4,312
Rumania	[5] 548	[6] 220	[6] 110	[6] 220	[6] 207
Poland	5,897	3,558	2,857	3,243	[6] 2,464
Russia	6,797	-------	-------	-------	-------
OCEANIA					
Australia	1,607	2,408	[6] 1,700	[6] 2,425	[6] 2,240
New Zealand	[7] (950)	1,071	963		
Total countries reporting for all periods 1909–1913 to 1925	171,331	110,378	76,487	139,372	117,701
Estimated world total exclusive of Russia [8]	175,917	111,145	77,585	140,275	-------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated.

[1] Figures for Europe are estimates for present boundaries.
[2] British Columbia only.
[3] Two-year average.
[4] Principal producing States.
[5] Four-year average.
[6] Unofficial.
[7] Rough estimate for one year based on acreage for that year and yields in later years.
[8] Exclusive of production in minor producing countries whose crops do not influence the world markets and for which no statistics are available.

TABLE 390.—*Hops: Acreage, production, imports, exports, and consumption in the United States, 1910–1925*

Year beginning July 1—	Acreage	Production	Imports	Exports		Consumption by brewers
				Domestic	Foreign	
	Acres	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
1910	(1)	(1)	8, 557, 531	13, 104, 774	17, 974	45, 068, 811
1911	(1)	(1)	2, 991, 125	12, 190, 663	35, 869	42, 136, 665
1912	(1)	(1)	8, 494, 144	17, 591, 195	35, 859	44, 237, 735
1913	(1)	(1)	5, 382, 025	24, 262, 896	30, 224	43, 987, 623
1914	(1)	(1)	11, 651, 332	16, 210, 443	16, 947	38, 839, 294
1915	44, 653	52, 986, 000	675, 704	22, 409, 818	134, 571	37, 451, 610
1916	43, 900	50, 595, 000	236, 849	4, 874, 876	26, 215	41, 949, 225
1917	29, 900	29, 388, 000	121, 288	3, 494, 579	37, 823	33, 481, 415
1918	25, 900	21, 481, 000	6	7, 466, 952	4, 719	13, 924, 650
1919	21, 000	24, 970, 000	2, 696, 264	30, 779, 508	104, 198	[2] 6, 440, 894
1920	28, 000	34, 280, 000	4, 807, 998	22, 206, 028	827, 803	[2] 5, 988, 982
1921	27, 000	29, 340, 000	893, 324	19, 521, 647	487, 633	[2] 4, 452, 676
1922	23, 400	27, 744, 000	1, 294, 644	13, 497, 183	198, 006	[2] 4, 555, 759
1923	18, 440	19, 751, 000	761, 174	20, 460, 705	132, 572	[2] 3, 814, 858
1924	20, 350	27, 670, 000	438, 996	16, 121, 978	54, 022	[2] 3, 255, 945
1925	[3] 20, 350	[3] 28, 573, 000				

Division of Statistical and Historical Research. Compiled from reports of the Bureau of Foreign and Domestic Commerce, and Division of Crop and Livestock Estimates; figures on consumption by brewers from records of the Bureau of Internal Revenue.

[1] Not available. [2] Hops used to make cereal beverages. [3] Preliminary.

TABLE 391.—*Hops: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Austria-Hungary	938	18, 333						
Czechoslovakia			54	10, 611	526	6, 826	2, 647	19, 317
France	5, 436	335	2, 642	3, 329	3, 807	4, 513	4, 080	8, 108
Germany	7, 688	17, 564	4, 806	7, 444	2, 056	4, 250	14, 003	2, 217
New Zealand	61	352	21	221	16	282	3	663
Poland			345	1, 135	152	1, 548	719	624
United States	6, 235	15, 416	1, 201	14, 882	1, 018	20, 041	406	17, 391
Yugoslavia			[1] 130	1, 332	[1] 339	5, 078	[1] 192	2, 817
PRINCIPAL IMPORTING COUNTRIES								
Argentina	618		656		996		538	
Australia	1, 106	22	[2] 729	[2] 1	[2] 222	[2] 955		
Austria			[1] 1, 281	[1] 141	3, 263	140	2, 881	[1] 156
Belgium	6, 915	4, 814	4, 630	2, 072	4, 673	2, 389	3, 745	3, 572
British India	246		282		294		164	
Canada	1, 396	176	1, 965	826	4, 240	1, 182	2, 064	700
Denmark	1, 027	[2] 1	609	1	489	8	755	5
Hungary [1]			226	179	74	92	412	103
Irish Free State							8, 327	
Italy	529	10	778	87	504	35	669	52
Japan	253		754		924		1, 209	
Netherlands	2, 938	1, 405	1, 323	549	1, 228	716	1, 294	317
Norway	289		546		362		376	
Russia	1, 258	2, 348	[1] 22	[1] 397	[1] 324		[1] 399	
Sweden	987	1	865	85	1, 040	3	947	12
Switzerland	1, 257	[4] 2	749		521		843	
Union of South Africa	487		404		398		304	
United Kingdom	21, 028	2, 162	14, 284	316	1, 356	2, 470	10, 039	4, 963
Other countries	2, 277		2, 535	402	3, 019	8, 831	1, 331	24
Total	62, 969	62, 941	41, 837	44, 610	31, 841	59, 359	58, 347	61, 041

Division of Statistical and Historical Research. Official sources except where otherwise noted. Lupulin and hopfenmehl (hop meal) are not included.

[1] International Institute of Agriculture.
[2] Year beginning July 1.
[3] Three-year average.
[4] One year only.

TABLE 392.—*Hops: Wholesale price per pound, 1913–1925*

Year	New York State, prime to choice			San Francisco		
	Low	High	Average[1]	Low	High	Average[1]
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1913	17	48	----------	19	30	----------
1914	23	50	----------	10	30	----------
1915	13	30	----------	10	15	----------
1916	15	55	----------	7	14	----------
1917	34	90	----------	6	40	----------
1918	23	54	37.9	19	22.5	19.5
1919	37	85	59.9	34	84	59.2
1920	41	105	80.2	33	85	61.6
1921	26	50	37.0	12	35	24.4
1922	19	40	25.3	9	30	17.6
1923	19	58	32.5	10	35	17.2
1924	31	58	47.3	12.5	40.0	24.2
1925	28	65	39.9	11	25	13.9
1925						
January	30	34	32.2	11	16	13.6
February	32	34	33	11	16	13.5
March	31	34	31.8	11	16	13.5
April	28	31	29.6	11	16	13.5
May	28	30	29	11	16	13.5
June	28	30	29	11	16	13.5
July	28	30	29	11	16	13.5
August	28	30	29	11	16	13.5
September	40	63	49.1	11	16	13.5
October	58	65	62.3	11	16	13.5
November	60	65	62.5	11	16	13.5
December	60	65	62.5	11	25	18.3

Division of Statistical and Historical Research Compiled from New York Journal of Commerce and San Francisco Daily Commercial News.

[1] Monthly averages are computed from daily ranges. Yearly averages are simple averages of monthly averages.

PEANUTS

TABLE 393.—*Peanuts: Acreage, production, and farm value, United States, 1916–1925*

Year	Acreage	Average yield per acre	Production	Price per pound received by producers Nov. 15	Farm value
	1,000 acres	*Pounds*	*1,000 pounds*	*Cents*	*1,000 dollars*
1916	1,043	881.1	919,028	4.5	41,243
1917	1,842	777.7	1,432,581	6.9	98,512
1918	1,865	664.9	1,240,102	6.5	80,271
1919	1,132	691.9	783,273	9.3	73,094
1920	1,181	712.5	841,474	5.3	44,256
1921	1,214	683.1	829,307	4.0	33,097
1922	1,005	630.0	633,114	4.7	29,613
1923	896	722.9	647,762	6.8	43,918
1924	1,207	620.5	748,925	[2] 4.6	34,481
1925[1]	982	706.8	694,075	[2] 3.6	25,225

Division of Crop and Livestock Estimates.

[1] Preliminary.
[2] Dec. 1 price.

TABLE 394.—*Peanuts: Acreage, production, and farm value, by States, 1924 and 1925*

State	Acreage		Average yield per acre		Production		Price per pound received by producers Dec. 1		Farm value	
	1924	1925 [1]	1924	1925	1924	1925 [1]	1924	1925	1924	1925 [1]
	1,000 acres	*1,000 acres*	*Lbs.*	*Lbs.*	*1,000 pounds*	*1,000 pounds*	*Cts.*	*Cts.*	*1,000 dollars*	*1,000 dollars*
Virginia	120	138	650	950	78,000	131,100	5.5	4.0	4,290	5,244
North Carolina	210	200	845	1,117	177,450	223,400	5.4	3.9	9,582	8,713
South Carolina	22	14	650	430	14,300	6,020	5.0	3.8	715	229
Georgia	399	278	600	475	239,400	132,050	4.2	3.4	10,055	4,490
Florida	47	41	710	600	33,370	24,600	4.0	3.2	1,335	787
Tennessee	23	20	730	815	16,790	16,300	3.5	3.4	588	554
Alabama	270	180	500	560	135,000	100,800	4.1	3.2	5,535	3,226
Mississippi	14	14	480	595	6,720	8,330	3.9	3.0	262	250
Arkansas	10	10	535	496	5,350	4,960	4.2	3.1	225	154
Louisiana	9	9	355	640	3,195	5,760	4.2	3.5	134	202
Oklahoma	8	7	700	700	5,600	4,900	4.3	3.2	241	157
Texas	75	71	450	505	33,750	35,855	4.5	3.4	1,519	1,219
Total	1,207	982	620.5	706.8	748,925	694,075	4.6	3.6	34,481	25,225

Division of Crop and Livestock Estimates

[1] Preliminary.

TABLE 395.—*Peanuts: Estimated price per pound, received by producers, United States, 1910–1925*

Year beginning November	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug 15	Sept. 15	Oct. 15	Weighted av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1910	4.7	4.5	4.4	5.0	4.8	4.9	4.8	5.2	5.0	5.3	5.1	4.6	4.6
1911	4.4	4.4	4.3	4.7	5.0	4.9	4.9	5.2	4.9	5.0	4.8	4.7	4.4
1912	4.7	4.6	4.6	4.5	4.7	4.8	4.7	5.0	5.1	4.9	4.9	4.8	4.6
1913	4.4	4.8	4.7	4.7	4.7	4.9	5.1	5.1	5.2	4.9	5.0	4.5	4.6
Av. 1910–1913	4.6	4.6	4.5	4.7	4.8	4.9	4.9	5.1	5.0	5.0	5.0	4.6	4.6
1914	4.4	4.3	4.5	4.4	4.2	4.5	4.8	4.8	4.7	4.5	4.4	4.3	4.4
1915	4.2	4.2	4.3	4.4	4.4	4.6	4.6	4.7	4.6	4.6	4.4	4.4	4.3
1916	4.4	4.7	4.9	5.3	5.5	6.2	7.2	7.7	7.6	7.2	6.6	6.1	4.8
1917	7.1	7.1	7.0	7.2	7.4	8.3	8.2	7.9	7.8	7.9	8.3	6.9	7.1
1918	6.6	6.1	6.0	6.9	7.0	6.9	7.2	7.7	8.2	8.1	8.3	8.1	6.5
1919	9.1	9.1	9.9	10.5	11.2	10.9	11.2	11.2	11.0	8.5	8.0	5.8	9.2
1920	5.3	4.7	4.4	4.1	4.0	3.5	3.4	3.8	3.8	3.9	4.0	4.0	4.7
Av. 1914–1920	5.9	5.7	5.9	6.1	6.2	6.4	6.7	6.8	6.8	6.4	6.3	5.7	5.9
1921	3.7	3.5	3.6	4.0	4.3	3.9	3.9	4.2	4.4	4.4	4.7	3.6	3.7
1922	5.2	5.0	5.9	6.5	6.7	7.1	7.1	7.3	6.9	6.7	6.7	7.0	5.5
1923	6.8	6.2	6.4	6.7	6.8	6.7	6.4	6.5	6.4	6.6	6.4	6.4	6.5
1924	6.3	5.6	5.4	5.5	5.9	5.7	6.2	6.2	5.4	5.2	5.7	4.7	5.7
1925	5.1	4.4											

Division of Crop and Livestock Estimates.

TABLE 396.—*Monthly average price, in cents per pound, of cleaned and shelled peanuts, f. o. b. important shipping points, November, 1924–October, 1925*

VIRGINIA-NORTH CAROLINA SECTION [1]

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Cleaned Virginias												
Jumbos	9⅞	9¾	10⅜	11½	11½	11⅜	11¼	11⅜	11½	11½	11½	10¾
Fancys	8⅞	8⅞	9⅜	10⅜	10⅜	10¼	10⅛	10⅛	9⅝	9½	8⅝	7¾
Extras	7⅝	7⅝	7⅞	8⅝	8⅜	8⅜	8	7⅞	7⅞	7⅝	7	6¾
Shelled Virginias												
Extra Large	12	11⅞	12¾	13¾	13¾	13½	13¼	13¼	13	12⅝	12½	11⅜
No. 1	9½	8⅞	9⅛	9⅞	9¾	9½	9⅜	9⅜	9⅝	9½	9½	9
No. 2	6⅞	6¼	6	6⅛	5⅞	5½	5¼	5¼	4⅞	4¾	4¾	4½

SOUTHEAST SECTION: GEORGIA, ALABAMA, FLORIDA, AND SOUTH CAROLINA [2]

Shelled Spanish												
No. 1	8¼	8⅛	8⅛	8½	8¾	8	7¾	7¾	7½	7⅜	7¼	6¾
No. 2	7¼	7	6⅞	6⅞	6⅝	5¾	5¾	5⅞	5⅝	6	6	5⅝
Shelled Runners												
No. 1	7¼	7⅛	7¼	7¾	7⅝	7⅛	7	7¼	7¾	7⅜	7⅜	6⅞
No. 2	6½	6⅛	6	6⅜	6½	5⅜	5¼	5⅝	5⅜	5⅜	5½	5¼

TEXAS [3]

Shelled Spanish												
No. 1	8⅛	8⅞	8⅝	9⅛	9¼	9⅛	9	8⅞	9	8¾	8⅝	8¼
No. 2	7⅛	7⅝	7¼	7½	7⅝	7⅛	7¼	7⅛	7	6⅝	6⅛	6¾

Fruit and Vegetable Division.

[1] Important shipping points: Suffolk, Petersburg, Franklin, and Norfolk, Va.; Edenton, N. C.
[2] Important shipping points: Albany, Cordele, Donalsonville, Valdosta, and Arlington, Ga.; Dothan, Enterprise, and Troy, Ala.; Charleston, S. C.
[3] Important shipping points: Fort Worth, DeLeon, Denison, and Tyler, Tex.

TABLE 397.—*Peanuts used in the production of oil, United States, 1918–1925*

[Thousand pounds—i. e., 000 omitted]

Year beginning July 1—	July–September	October–December	January–March	April–June	Total
1918			[1] 239, 920	[1] 176, 280	
1919	11, 184	4, 364	5, 868	9, 214	30, 630
1920	15, 770	27, 414	27, 962	32, 924	104, 070
1921	23, 480	40, 338	44, 152	25, 964	133, 934
1922	4, 704	13, 170	9, 082	8, 436	35, 392
1923	942	6, 164	4, 676	5, 470	17, 252
1924 [2]	1, 928	17, 668	24, 678	16, 892	61, 166
1925 [2]	9. 096	20, 216			

Division of Statistical and Historical Research. Compiled from reports of the Bureau of the Census. Quantities reported in terms of "hulled" have been converted to "in the hull" basis by multiplying by 1.5.

[1] Peanuts "in the hull" and "hulled" not separately stated.
[2] Quarterly reports from January–December, 1925, subject to revision.

TABLE 398.—*Peanuts: International trade, average 1911-1913, annual 1922-1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec 31							
	Average 1911–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Anglo-Egyptian Sudan	----------	1, 961	----------	5, 941	----------	13, 296	----------	22, 987
Brazil	----------	274	----------	123	----------	4, 492	----------	----------
British India	----------	503, 448	----------	590, 332	----------	597, 356	----------	550, 505
China	32, 882	138, 472	20, 090	238, 032	23, 390	391, 183	22, 921	661, 267
Dutch East Indies	612	60, 282	602	29, 006	577	39, 876	----------	[1] 39, 585
Mozambique	[2] 1, 098	[2] 15, 907	579	23, 043	35	24, 346	----------	----------
Nigeria	----------	17, 163	----------	53, 514	----------	51, 267	----------	----------
Spain	----------	9, 205	----------	3, 164	----------	8, 790	----------	[2] 3, 764
Tanganyika	----------	[4] 9, 275	----------	28, 040	----------	36, 978	----------	9, 056
PRINCIPAL IMPORTING COUNTRIES								
Algeria	7, 022	218	6, 359	197	5, 811	158	7, 906	259
Argentina	8, 667	----------	12, 680	103	4, 485	12, 372	554	2, 883
British Malaya	[4] 19, 488	[4] [5] 10, 839	11, 708	2, 323	12, 674	2, 106	14, 941	2, 006
Canada	7, 302	----------	20, 092	----------	21, 963	----------	22, 283	----------
Denmark	5, 236	----------	11, 294	----------	22, 155	----------	20, 178	----------
Egypt	4, 664	1, 637	6, 077	3, 328	6, 336	3, 711	7, 406	4, 504
France	1, 239, 659	47, 107	1, 248, 006	12, 370	1, 410, 553	15, 098	1, 359, 105	17, 906
Germany	174, 970	[6] 98	152, 762	----------	83, 145	----------	165, 178	----------
Hongkong	----------	----------	44, 443	34, 414	49, 511	39, 837	60, 265	41, 277
Italy [7]	1, 194	804	84, 241	768	58, 423	36	57, 859	48
Japan	----------	10, 675	29, 312	1, 117	24, 543	1, 532	32, 147	401
Netherlands	122, 862	32, 863	98, 301	2, 679	117, 386	4, 698	148, 528	4, 877
Philippine Islands	2, 264	----------	3, 102	----------	3, 154	----------	3, 058	----------
Tunis	[2] 1, 459	----------	2, 795	----------	----------	----------	3, 369	----------
Union of South Africa	3, 164	7	1, 499	25	2, 192	5	1, 264	29
United Kingdom	----------	----------	149, 707	----------	224, 548	----------	226, 216	----------
United States	20, 988	6, 804	15, 192	12, 621	76, 484	4, 806	88, 915	3, 127
Other countries	100, 865	980, 818	15, 926	5, 030	11, 788	5, 987	9. 185	955
Total	1, 754, 396	1, 847, 857	1, 934. 767	1, 046, 170	2, 159. 153	1, 257, 930	2, 251, 278	1, 365, 436

Division of Statistical and Historical Research. Official sources except where otherwise noted. Includes shelled and unshelled, assuming the peanuts to be unshelled unless otherwise stated. When shelled nuts were reported, they have been reduced to terms of unshelled at the ratio of 3 pounds unshelled to 2 pounds shelled.

[1] Java and Madura only.
[2] Two-year average.
[3] Six months.
[4] International Institute of Agriculture, Oleaginous Products and Vegetable Oils.
[5] Three-year average.
[6] One year only.
[7] Reports include some sesamum.

TABLE 399.—*Peanut oil: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average, 1909–1913 [1]		1922		1923		1924, preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Belgium	2,233	2,065	4,748	3,693	3,642	4,978	3,598	4,945
China	[2]	[3] 35,593	[2]	51,136	[2]	62,285	[2]	89,636
France	142	50,967	1,963	45,426	1,230	59,332	3,448	72,156
Netherlands	2,743	18,569	17,716	20,781	6,960	20,170	19,134	24,281
United Kingdom	[2]	[2]	17,463	7,939	7,170	11,921	10,980	21,784
PRINCIPAL IMPORTING COUNTRIES								
Algeria	[2]	[2]	24,411	690	29,510	646	30,248	539
Canada			[4] 1,744		[4] 17,708		[4] 24,937	
Denmark	2,941	[3] 156	3,047	705	1,517	1,309	828	2,019
Germany	1,602		5,959	5,344	7,137	7,363	13,792	6,141
Hongkong			27,558	21,747	33,911	24,942	41,142	27,691
Italy	8,867	[3] 4	6,643	25	1,347	29	8,605	3
Morocco	[2]		2,032		2,983		2,448	
Norway	[2]	[2]	7,862	187	10,727	903	7,272	
Philippine Islands	[5] 976	[2]	3,119	[2]	3,011	[2]	3,754	[2]
Sweden	2,459		3,962	1,121	5,985	534	6,251	333
United States	[5] 7,295	[2]	2,470	963	8,009	203	15,395	39
Other countries	6,466	458	1,723	20	735	220	1,234	2
Total	35,724	107,812	132,420	159,777	141,582	194,835	193,066	249,569

Division of Statistical and Historical Research. Official sources except where otherwise noted. Conversions made on the basis of 7.5 pounds to the gallon.

[1] International Institute of Agriculture, Oleaginous Products and Vegetable Oils.
[2] Not separately stated.
[3] Four-year average.
[4] Includes some soy-bean oil.
[5] Three-year average.

TABLE 400.—*Peanut oil, refined: Average price per pound (in barrels), at New York, 1916–1925*

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1916	12.19	12.60	13.33	13.49	13.50	14.38	14.80	17.58	17.83	17.87	17.44	18.05	15.26
1917	18.61	20.12	21.67	22.67	22.49	22.98	22.33	22.41	21.70	21.15	21.47	21.78	21.62
1918	21.44	22.75	22.75	21.06	20.36	20.25	19.90	22.38	24.58	26.91	29.31	30.05	23.48
1919	26.25	25.25	26.68	26.69	27.50	26.43	27.12	25.00	23.10	20.88	19.00	17.19	24.26
1920	16.88	16.29	14.62	12.75	12.52	12.34	11.00	10.70	10.50	10.25	10.00	10.12	12.32
1921	10.62	11.75	11.59	11.22	11.25	11.38	12.25	13.15	13.00	13.00	12.48	12.62	12.03
1922	12.40	12.25	13.03	14.25	16.88	17.38	17.85	17.75	16.56	16.00	16.00	16.00	15.53
1923	16.00	16.00	15.59	14.80	14.75	14.75	14.75	14.75	14.88	15.25	15.25	15.56	15.19
1924	16.45	16.25	16.25	16.25	16.75	16.75	16.75	16.75	15.20	15.00	15.00	15.00	16.03
1925	15.00	15.00	15.00	15.00									

Division of Statistical and Historical Research. Compiled from Oil, Paint, and Drug Reporter, average of weekly range.

TABLE 401.—*Sugar beets: Production by States, 1922–1925; United States, 1914–1925*

State and year [1]	Acreage [2]			Quantity harvested	Yield per acre	Price per ton received by producers	Value
	Planted	Harvested					
		Area	Percentage of planted				
Ohio:	*Acres*	*Acres*	*P. ct.*	*Short tons*	*Short tons*	*Dollars*	*Dollars*
1922	28,000	26,000	91.85	220,000	8.51	6.88	1,512,000
1923	46,000	41,000	90.94	391,000	9.43	9.26	3,620,000
1924	48,000	41,000	85.42	315,000	7.68	9.48	2,986,000
1925 [3]	42,000	37,000	88.10	353,000	9.54		
Michigan:							
1922	106,000	84,000	78.98	692,000	8.23	7.22	4,994,000
1923	131,000	109,000	83.31	883,000	8.11	9.38	8,282,000
1924	174,000	150,000	86.21	1,081,000	7.21	8.85	9,569,000
1925 [3]	137,000	119,000	86.86	1,069,000	8.98		
Wisconsin:							
1922	13,000	8,000	63.42	67,000	8.27	7.22	484,000
1923	20,000	15,000	73.87	122,000	8.36	8.72	1,064,000
1924	27,000	21,000	77.78	136,000	6.48	7.02	955,000
1925 [3]	18,000	12,000	66.67	136,000	11.33		
Nebraska:							
1922	55,000	55,000	100.66	703,000	12.78	7.79	5,477,000
1923	60,000	58,000	96.38	640,000	11.04	8.10	5,181,000
1924	67,000	65,000	97.01	766,000	11.78	7.53	5,768,000
1925 [3]	62,000	62,000	100.00	824,000	13.29		
Montana and Wyoming:							
1922	27,000	24,000	88.89	257,000	10.73	8.43	2,164,000
1923	40,000	37,000	92.50	431,000	11.64	8.76	3,770,000
1924	58,000	54,000	93.10	564,000	10.44	8.18	4,613,000
1925 [3]	62,000	59,000	95.16	610,000	10.34		
Idaho:							
1922	33,000	24,000	71.08	273,000	11.59	8.28	2,262,000
1923	47,000	43,000	90.00	498,000	11.68	8.57	4,269,000
1924	62,000	39,000	62.90	267,000	6.85	7.19	1,920,000
1925 [3]	40,000	40,000	100.00	467,000	11.68		
Colorado:							
1922	165,000	148,000	89.33	1,466,000	9.93	7.79	11,426,000
1923	182,000	164,000	90.44	1,996,000	12.15	8.15	16,276,000
1924	238,000	225,000	94.54	2,546,000	11.32	7.59	19,329,000
1925 [3]	186,000	134,000	72.04	1,490,000	11.12		
Utah:							
1922	80,000	73,000	90.77	819,000	11.29	7.96	6,519,000
1923	84,000	83,000	98.56	1,075,000	12.91	8.28	8,901,000
1924	98,000	81,000	82.65	568,000	7.01	6.92	3,930,000
1925 [3]	71,000	69,000	97.18	974,000	14.12		
California:							
1922	62,000	57,000	92.29	424,000	7.40	10.14	4,306,000
1923	70,000	61,000	86.25	581,000	9.59	13.99	8,129,000
1924	93,000	84,000	90.32	785,000	9.35	9.14	7,174,000
1925 [3]	100,000	78,000	78.00	491,000	6.29		
Other States:							
1922	37,000	31,000	83.78	262,000	8.12	7.13	1,873,000
1923	52,000	46,000	88.46	389,000	8.37	8.93	3,473,000
1924	60,000	57,000	95.00	485,000	8.51	7.24	3,511,000
1925 [3]	62,000	57,000	93.55	518,000	8.93		
United States:							
1914	515,000	483,000	93.94	5,585,000	11.60	5.45	30,438,000
1915	664,000	611,000	92.02	6,511,000	10.70	5.67	36,950,000
1916	768,000	665,000	86.57	6,228,000	9.36	6.12	38,139,000
1917	807,000	665,000	82.43	5,980,000	9.00	7.39	44,192,000
1918	690,000	594,000	86.13	5,949,000	10.01	10.00	59,494,000
1919	890,000	692,000	77.77	6,421,000	9.27	11.74	75,420,000
1920	978,000	872,000	89.08	8,538,000	9.79	11.63	99,324,000
Av. 1914–20	759,000	655,000	86.27	6,459,000	9.87	8.49	54,851,000
1921	882,000	815,000	92.36	7,782,000	9.55	6.35	49,392,000
1922	606,000	530,000	87.50	5,183,000	9.77	7.91	41,017,000
1923	732,000	657,000	89.82	7,006,000	10.66	8.99	62,965,000
1924	925,000	817,000	88.32	7,513,000	9.20	7.95	59,755,000
1925 [3]	780,000	667,000	85.51	6,932,000	10.39		
Av. 1921–25	785,000	697,000	88.70	6,883,000	9.91		

Division of Crop and Livestock Estimates.

[1] Acreage and production of beets are credited to the State in which the beets are made into sugar. Year shown is that in which beets were grown. Sugar-making campaign extends into succeeding year.

[2] The planted acreage is that covered by factory-contract agreements and understandings, all of which is not actually planted by growers. Therefore abandonment may not mean actual loss of acreage.

[3] Preliminary.

TABLE 402.—*Beet sugar: Production by States, 1922–1925, United States, 1914–1925*

State and year [1]	Factories operating	Average length of campaign	Sugar made (chiefly refined)	Beets sliced	Analysis of beets		Recovery of sucrose [4]		Loss [5]
					Percentage of sucrose [2]	Purity coefficient [3]	Percentage of weight of beets	Percentage of total sucrose in beets	
Ohio:	*No.*	*Days*	*Short tons*	*Short tons*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1922	4	60	25,000	206,000	14.65	82.81	11.94	81.50	2.71
1923	5	79	39,000	367,000	13.39	82.02	10.54	78.72	2.85
1924	5	59	45,000	297,000	17.85	85.20	15.15	84.87	2.70
1925			38,000	353,000	13.03		10.76	82.59	2.27
Michigan:									
1922	15	48	81,000	648,000	14.38	84.16	12.52	87.07	1.86
1923	16	57	110,000	815,000	15.29	84.40	13.51	88.36	1.78
1924	16	70	165,000	992,000	18.55	86.75	16.63	89.65	1.92
1925			123,000	1,069,000	14.03		11.51	82.04	2.52
Wisconsin:									
1922	4	31	8,000	65,000	16.06	83.14	13.08	81.44	2.98
1923	4	51	14,000	113,000	15.71	85.32	12.33	78.49	3.38
1924	4	66	18,000	128,000	17.19	85.36	14.06	81.79	3.13
1925			15,000	136,000	14.71		11.03	74.98	3.68
Nebraska:									
1922	5	92	87,000	671,000	14.79	84.26	12.94	87.49	1.85
1923	5	83	74,000	597,000	14.48	82.38	12.32	85.08	2.16
1924	5	90	105,000	717,000	16.46	84.90	14.64	88.94	1.82
1925			105,000	824,000	14.93		12.74	85.33	2.19
Montana and Wyoming:									
1922	4	53	37,000	246,000	16.87	85.72	15.12	89.63	1.75
1923	4	84	55,000	397,000	15.88	83.91	13.97	87.97	2.02
1924	4	92	81,000	517,000	17.21	85.77	15.67	91.05	1.54
1925			80,000	610,000	15.25		13.12	86.03	2.13
Idaho:									
1922	5	55	40,000	258,000	16.58	86.21	15.44	93.12	1.14
1923	9	61	68,000	467,000	16.39	86.74	14.64	89.32	1.75
1924	8	34	38,000	252,000	17.06	87.06	15.08	88.39	1.98
1925			69,000	467,000	17.60		15.70	89.20	1.90
Colorado:									
1922	15	63	183,000	1,422,000	14.66	82.69	12.90	87.99	1.76
1923	16	78	240,000	1,890,000	14.59	82.34	12.73	87.25	1.86
1924	16	93	364,000	2,403,000	16.65	84.70	15.15	90.99	1.50
1925			191,000	1,490,000	14.36		12.82	89.28	1.54
Utah:									
1922	16	55	110,000	775,000	16.11	85.17	14.16	87.90	1.95
1923	17	67	137,000	1,008,000	15.66	85.02	13.59	86.78	2.07
1924	17	36	76,000	540,000	16.30	85.44	14.07	86.32	2.23
1925			127,000	974,000	15.91		13.04	81.96	2.87
California:									
1922	7	74	73,000	424,000	18.48	82.71	17.28	93.51	1.20
1923	6	88	100,000	579,000	18.35	82.94	17.33	94.44	1.02
1924	8	77	131,000	783,000	18.26	83.24	16.73	91.62	1.53
1925			87,000	491,000	19.15		17.72	92.53	1.43
Other States:									
1922	6	55	31,000	248,000	14.96	81.36	12.47	83.36	2.49
1923	7	64	44,000	352,000	14.46	81.01	12.16	84.09	1.70
1924	7	67	67,000	446,000	17.03	83.23	15.02	88.20	2.01
1925			60,000	518,000	14.09		11.58	82.19	2.51
United States:									
1914	60	85	722,000	5,288,000	16.38	83.89	13.65	83.33	2.73
1915	67	92	874,000	6,150,000	16.49	84.38	14.21	86.17	2.28
1916	74	80	821,000	5,920,000	16.30	84.74	13.86	85.03	2.44
1917	91	74	765,000	5,626,000	16.28	83.89	13.60	83.54	2.68
1918	89	81	761,000	5,578,000	16.18	84.70	13.64	84.30	2.54
1919	89	78	726,000	5,888,000	14.48	82.84	12.34	85.22	2.14
1920	97	91	1,089,000	7,991,000	15.99	83.96	13.63	85.24	2.36
Average 1914–1920	81	83	823,000	6,063,000	16.01	84.07	13.57	84.75	2.44
1921	92	76	1,020,000	7,414,000	15.77	83.09	13.76	87.25	2.01
1922	81	58	675,000	4,963,000	15.44	83.76	13.61	88.15	1.83
1923	89	70	881,000	6,585,000	15.30	83.43	13.37	87.39	1.93
1924	90	66	1,090,000	7,075,000	17.19	85.03	15.41	89.65	1.78
1925			895,000	6,932,000	15.12		12.91	85.38	2.21
Average 1921–1925			912,000	6,594,000	15.76		12.91	87.56	1.91

Division of Crop and Livestock Estimates. Figures for 1925 are preliminary.

[1] Acreage and production of beets are credited to the State in which the beets are made into sugar. Year shown is that in which beets were grown. Sugar-making campaign extends into succeeding year.
[2] Based upon weight of beets.
[3] Percentage of sucrose (pure sucrose) in the total soluble solids of the beets.
[4] Percentage of sucrose actually extracted by factories.
[5] Percentage of sucrose (based upon weight of beets) remaining in molasses and pulp.
[6] Preliminary.

TABLE 403.—*Cane sugar: Production in Louisiana, 1911–1925*

Year [1]	Factories in operation	Sugar made [2]	Average sugar made per ton of cane	Cane used for sugar			Molasses made [3]	
				Acreage	Average per acre	Production	Total	Per ton of sugar
	Number	*Short tons*	*Pounds*	*Acres*	*Short tons*	*Short tons*	*Gallons*	*Gallons*
1911	188	352, 874	120	310, 000	19	5, 887, 292	35, 062, 525	99
1912	126	153, 573	142	197, 000	11	2, 162, 574	14, 302, 169	93
1913	153	292, 698	139	248, 000	17	4, 214, 600	24, 046, 320	82
1914	149	242, 700	152	213, 000	15	3, 199, 000	17, 177, 443	71
1915	136	137, 500	135	183, 000	11	2, 018, 000	12, 743, 000	93
1916	150	303, 900	149	221, 000	18	4, 072, 000	26, 154, 000	86
1917	140	243, 600	128	244, 000	15. 6	3, 813, 600	30, 728, 000	126
1918	134	280, 900	135	231, 200	18	4, 170, 000	28, 949, 000	100
1919	121	121, 000	129	179, 900	10. 5	1, 883, 000	12, 991, 000	107
1920	122	169, 127	136	182, 843	13. 6	2, 492, 524	16, 556, 867	100
Average 1914–1920	136	214, 104	138	207, 849	14. 9	3, 092, 503	20, 671, 330	97
1921	124	324, 431	155	226, 366	18. 5	4, 180, 780	25, 423, 341	78
1922	112	295, 095	156	241, 433	15. 6	3, 778, 110	22, 718, 840	77
1923	105	162, 023	136	217, 259	11. 1	2, 386, 650	15, 719, 400	97
1924	82	88, 000	144	163, 000	7. 6	1, 228, 000	9, 580, 000	109
1925		198, 000	108	221, 000	16. 5	3, 648, 000	22, 981, 000	116
Average 1921–1925		213, 500	140	213, 800	14. 2	3, 044, 300	19, 286, 500	90

Division of Crop and Livestock Estimates.

[1] Sugar campaign, usually not ended before February following season of growth of cane.

[2] Chiefly raw.

[3] Figures for molasses, 1911–1914, are as reported by the Louisiana Sugar Planters' Association; figures for later years as reported by Division of Crop and Livestock Estimates.

TABLE 404.—*Cane sugar: Production in Hawaii, 1914–1925*

Island, and year ended Sept. 30	Average length of campaign	Sugar made (chiefly raw)	Cane used for sugar			Total area in cane	Average extraction of sugar	
			Acreage harvested	Average yield per acre	Production		Per cent of cane	Per short ton of cane
	Days	*Short tons*	*Acres*	*Short tons*	*Short tons*	*Acres*	*Per cent*	*Pounds*
Island of Hawaii:								
1922	198	223, 000	55, 000	37	2, 010, 000	106, 000	11. 09	222
1923	164	186, 000	52, 000	32	1, 681, 000	105, 000	11. 08	222
1924	201	228, 000	49, 000	41	1, 996, 000	106, 000	11. 42	228
1925	170	263, 000	54, 000	43	2, 321, 000	108, 000	11. 33	227
Island of Kauai:								
1922	200	94, 000	23, 000	36	842, 000	43, 000	11. 22	224
1923	171	93, 000	21, 000	37	782, 000	42, 000	11. 82	236
1924	170	121, 000	20, 000	49	986, 000	42, 000	12. 27	245
1925	134	134, 000	24, 000	46	1, 111, 000	47, 000	12. 06	241
Island of Maui:								
1922	159	124, 000	19, 000	50	971, 000	38, 000	12. 76	255
1923	136	112, 000	17, 000	50	874, 000	43, 000	12. 81	256
1924	166	155, 000	19, 000	62	1, 170, 000	39, 000	13. 25	265
1925	141	170, 000	20, 000	63	1, 258, 000	40, 000	13. 51	270
Island of Oahu:								
1922	243	151, 000	27, 000	48	1, 265, 000	42, 000	11. 92	238
1923	200	146, 000	24, 000	52	1, 223, 000	44, 000	11. 93	239
1924	211	187, 000	23, 000	66	1, 509, 000	45, 000	12. 39	248
1925	146	202, 000	24, 000	67	1, 607, 000	46, 000	12. 57	251
Territory of Hawaii:								
1914	183	612, 000	112, 700	43	4, 900, 000		12. 49	250
1915	195	646, 000	113, 200	46	5, 185, 000	239, 800	12. 46	249
1916	180	592, 763	115, 419	42	4, 859, 424	246, 332	12. 20	244
1917	190	644, 663	123, 900	42	5, 220, 000	245, 100	12. 35	247
1918	184	576, 700	119, 800	41	4, 855, 000	276, 800	11. 88	238
1919	178	600, 312	119, 700	40	4, 744, 000	239, 900	12. 65	253
1920	175	555, 727	114, 100	39	4, 473, 000	247, 900	12. 42	248
Average 1914–1920	184	604, 024	116, 974	42	4, 890, 918	[1] 249, 305	12. 35	247
1921	202	521, 579	113, 100	41	4, 657, 000	236, 500	11. 20	224
1922	199	592, 000	124, 000	41	5, 088, 000	229, 000	11. 64	233
1923	167	537, 000	114, 000	40	4, 560, 000	235, 000	11. 77	235
1924	192	691, 000	111, 000	51	5, 661, 000	232, 000	12. 21	244
1925	154	769, 000	122, 000	52	6, 297, 000	241, 000	12. 21	244
Average 1921–1925	183	622, 116	116, 820	45	5, 252, 600	234, 700	11. 84	237

Division of Crop and Livestock Estimates.

[1] 1915–1920 average.

TABLE 405.—*Sugar: Production in the United States and its possessions, 1909–1925*

Year beginning July	Beet sugar (chiefly refined)	Cane sugar (chiefly raw)					Total
		Louisiana	Other States	Porto Rico	Hawaii	Philippine Islands [1]	
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
1909	512, 469	320, 526	11, 200	346, 786	517, 090	140, 783	1, 848, 854
1910	510, 172	342, 720	12, 320	349, 840	566, 821	164, 658	1, 946, 531
1911	599, 500	352, 874	8, 000	371, 076	595, 038	205, 046	2, 131, 534
1912	692, 556	153, 573	9, 000	398, 004	546, 524	345, 077	2, 144, 734
1913	733, 401	292, 698	7, 840	351, 666	612, 000	408, 339	2, 405, 944
Av. 1909–1913	609, 620	292, 478	9, 672	363, 474	567, 495	252, 781	2, 095, 519
1914	722, 054	242, 760	3, 920	346, 490	646, 000	421, 192	2, 382, 355
1915	874, 220	137, 500	1, 120	483, 590	592, 763	412, 274	2, 501, 467
1916	820, 657	303, 900	7, 000	503, 081	644, 663	425, 266	2, 704, 567
1917	765, 207	243, 600	2, 240	453, 794	576, 700	474, 745	2, 516, 286
1918	760, 950	280, 900	3, 500	406, 002	600, 312	453, 346	2, 505, 010
1919	726, 451	121, 000	1, 125	485, 071	555, 727	466, 912	2, 356, 286
1920	1, 089, 021	169, 127	6, 987	489, 818	521, 579	608, 499	2, 885, 031
Av. 1914–1920	822, 651	214, 104	3, 699	452, 549	591, 106	466, 033	2, 550, 143
1921	1, 020, 489	324, 431	3, 270	408, 325	592, 000	533, 189	2, 881, 704
1922	675, 000	295, 095	640	379, 172	537, 000	475, 325	2, 362, 232
1923	881, 000	162, 023	2, 800	447, 570	691, 000	529, 091	2, 713, 484
1924	1, 090, 000	88, 483	----------	660, 000	[2] 775, 000	[2] 679, 000	----------
1925 [3]	895, 000	197, 528	----------	596, 000	[2] 723, 000	[2] 526, 000	----------

Division of Statistical and Historical Research. Cane sugar production 1909–1910 from Willett & Gray; 1911 and subsequently from United States Department of Agriculture. Hawaiian production from Hawaiian Sugar Planters' Association.

[1] Exports 1909–1911, production 1912 and subsequently. [2] Unofficial. [3] Subject to revision.

TABLE 406.—*Sugar: Production, trade, and supply available for consumption in continental United States, 1909–1924* [1]

Year beginning July	Production [2]	Brought in from insular possessions [3]	Imports as sugar [4]	Domestic exports as sugar [5]	Exports in other forms [6]	Available for consumption [7]	
						Total	Per capita
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*Pounds*
1909	1, 765, 260	1, 855, 504	3, 869, 508	144, 764	48, 702	7, 296, 806	79. 7
1910	1, 806, 950	1, 887, 402	3, 690, 558	73, 195	31, 932	7, 279, 783	78. 3
1911	2, 010, 673	2, 375, 326	3, 664, 848	100, 760	30, 321	7, 919, 766	83. 9
1912	1, 814, 141	2, 053, 944	4, 532, 852	61, 926	38, 434	8, 300, 577	86. 6
1913	2, 177, 888	1, 872, 752	4, 926, 504	74, 381	23, 785	8, 878, 978	91. 3
Av. 1909–1913	1, 914, 982	2, 008, 986	4, 136, 854	91, 005	34, 635	7, 935, 182	84. 0
1914	2, 045, 656	2, 196, 628	5, 059, 926	605, 283	27, 171	8, 669, 756	87. 9
1915	2, 156, 813	2, 204, 114	5, 378, 134	1, 765, 728	24, 427	7, 948, 906	79. 4
1916	2, 386, 213	2, 407, 876	5, 055, 968	1, 353, 505	58, 422	8, 438, 130	83. 2
1917	2, 136, 875	1, 951, 368	4, 689, 632	610, 858	92, 262	8, 074, 755	78. 5
1918	2, 204, 842	2, 147, 888	5, 599, 924	1, 137, 133	73, 494	8, 742, 027	83. 8
1919	1, 806, 120	1, 951, 470	7, 625, 910	1, 553, 005	196, 772	9, 633, 723	91. 1
1920	2, 693, 623	2, 152, 684	6, 456, 558	638, 178	178, 983	10, 485, 704	97. 9
Av. 1914–1920	2, 204, 306	2, 144, 575	5, 695, 150	1, 094, 813	93, 076	8, 856, 143	86. 0
1921	2, 849, 453	2, 681, 734	7, 881, 554	2, 170, 698	62, 795	11, 179, 248	103. 0
1922	2, 042, 720	2, 470, 098	8, 136, 411	824, 393	25, 137	11, 799, 699	107. 3
1923	2, 223, 796	2, 549, 741	6, 873, 909	305, 767	29, 303	11, 312, 376	101. 6
1924	2, 316, 924	3, 291, 751	7, 856, 896	546, 941	44, 672	12, 873, 964	114. 1

Division of Statistical and Historical Research. See Table 405 for source of production figures. Trade figures, Bureau of Foreign and Domestic Commerce.

[1] In terms of raw sugar.
[2] Beet and cane sugar only.
[3] Duty free. From Hawaii, Porto Rico, and the Philippine Islands (Virgin Islands included 1917 and subsequently).
[4] No account taken of sugar imported in other forms. Imports from Philippine Islands excluded, re-exports deducted.
[5] Shipments to Hawaii and Porto Rico included. Direct exports to foreign countries from Hawaii and Porto Rico excluded.
[6] Sugar used in the manufacture of other commodities for export on which drawback was paid.
[7] No account taken of stocks at beginning or end of the year.

TABLE 407.—*Sugar beets: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925, preliminary	Average 1909–1913	1922	1923	1924	1925, preliminary
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Canada	17	15	18	31	------	9.4	8.5	8.8	9.5	------
United States [2]	485	530	657	817	667	10.0	9.8	10.7	9.2	10.4
Total N. America	502	545	675	848	------	------	------	------	------	------
EUROPE										
England and Wales	[3] 4	8	17	22	55	7.2	7.8	6.9	9.2	9.2
Sweden	78	41	106	102	100	13.3	12.3	10.8	9.9	14.6
Denmark	80	60	79	95	92	10.9	10.5	10.7	11.1	14.1
Netherlands	144	138	167	183	164	13.7	14.5	11.4	14.6	14.7
Belgium	146	149	179	201	179	12.3	12.6	12.5	13.7	13.4
France	612	323	406	508	483	10.7	11.2	10.3	12.7	11.0
Spain	114	138	153	443	193	8.3	9.6	10.0	5.2	10.5
Italy	130	203	223	306	124	15.3	12.2	13.3	13.4	13.7
Switzerland	[3] 2	3	3	3	4	15.0	12.3	11.7	16.7	13.0
Germany	[4] 1,075	1,031	948	975	996	13.7	11.5	10.1	11.6	11.4
Austria	57	28	32	46	51	9.8	6.8	8.3	10.4	11.8
Czechoslovakia	716	519	574	748	764	11.5	11.1	11.6	12.3	13.1
Hungary	131	103	128	168	163	11.5	7.6	7.4	8.4	10.3
Yugoslavia	35	48	67	119	82	10.9	7.2	6.1	9.8	9.7
Bulgaria	7	25	31	37	------	8.1	9.4	5.5	7.9	------
Rumania	[5] 72	54	92	133	144	9.3	6.8	7.7	7.2	9.0
Poland	431	270	337	404	425	10.7	10.9	8.4	8.8	9.6
Finland	([6])	3	2	2	3	------	4.0	2.5	3.0	6.3
Russia	1,484	435	611	860	1,168	7.2	3.8	4.8	3.7	6.5
Total Europe	5,318	3,579	4,155	5,350	5,190	------	------	------	------	------
World total	5,820	4,124	4,830	6,198	5,900	------	------	------	------	------

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated.

[1] Averages for countries having changed boundaries are estimates for territory within present boundaries.
[2] Principal producing States.
[3] Two year average.
[4] One year only, 1912–13. According to statistics of the German sugar association, the 1912–13 acreage was higher than any other year with the exception of 1914–15.
[5] Four-year average.
[6] No sugar beets grown for sugar previous to 1918.

TABLE 408.—*Sugar beets: Production in specified countries, average 1909–1913, annual 1922–1925*

[Thousand short tons—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTH AMERICA					
Canada	160	128	159	295	
United States [2]	4,860	5,183	7,006	7,513	6,932
Total North America	5,020	5,311	7,165	7,808	
EUROPE					
England and Wales	[3] 29	62	117	202	504
Sweden	1,036	503	1,148	1,008	1,458
Denmark	871	631	844	1,051	1,301
Netherlands	1,977	2,004	1,896	2,675	2,403
Belgium	1,793	1,873	2,245	2,744	2,397
France	6,544	3,626	4,174	6,369	5,290
Spain	949	1,318	1,535	2,312	2,017
Italy	1,983	2,486	2,976	4,102	1,698
Switzerland	[3] 30	37	35	50	52
Germany	[5] 14,679	11,893	9,586	11,317	11,382
Austria	561	191	267	477	604
Czechoslovakia	8,238	5,776	6,641	9,231	9,976
Hungary	1,513	784	952	1,405	1,681
Yugoslavia	381	345	411	1,172	[4] 794
Bulgaria	57	236	169	291	0
Rumania	[6] 668	365	709	962	1,298
Poland	4,611	2,945	2,838	3,539	4,064
Finland		12	5	6	19
Russia	10,636	1,661	2,921	3,213	7,583
Total Europe	56,556	36,748	39,469	52,126	54,521
Estimated world total	61,576	42,059	46,634	59,934	61,700

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated.

[1] Averages for countries having changed boundaries are estimated for territory within present boundaries.
[2] Principal producing States
[3] Two-year average.
[4] Unofficial estimate.
[5] One year only, 1912–13. According to statistics of the German sugar association, the 1912–13 production of beets was higher than any other year with the exception of 1913–14.
[6] Four-year average.

TABLE 409.—*Sugar, raw, cane and beet: World production, 1909–10, to 1925–26*

Year [1]	Production in countries reporting all years	Estimated world totals, preliminary	Total Europe beet sugar	Three chief producing countries		
				Cuba	India [2]	Java [2]
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
1909–10	13,281,591	16,784,000	6,607,324	2,020,871	2,480,700	1,368,755
1910–11	14,961,161	18,777,000	8,416,291	1,661,465	2,587,100	1,411,275
1911–12	13,885,475	17,824,000	6,638,123	2,123,502	2,744,900	1,616,599
1912–13	16,299,155	20,269,000	8,885,767	2,719,961	2,861,500	1,550,274
1913–14	16,987,369	20,913,000	8,725,501	2,909,460	2,573,200	1,615,944
1914–15	16,680,421	20,753,000	8,099,430	2,921,984	2,736,000	1,548,668
1915–16	14,496,093	18,985,000	5,849,814	3,398,385	2,949,000	1,454,030
1916–17	13,922,308	18,664,000	4,619,013	3,421,597	3,093,000	1,796,558
1917–18	14,838,179	20,261,000	4,817,219	3,889,966	3,839,000	2,008,521
1918–19	14,122,476	18,380,000	3,611,861	4,490,902	2,752,000	1,960,118
1919–20	13,025,076	17,801,000	2,868,402	4,183,676	3,404,000	1,472,793
1920–21	14,859,487	19,469,000	4,104,065	4,406,413	2,825,000	1,681,338
1921–22	15,742,572	20,482,000	4,386,063	4,517,470	2,928,000	1,853,357
1922–23	15,572,805	20,714,000	4,988,035	4,083,483	3,410,000	1,989,170
1923–24	16,965,741	22,772,000	5,634,290	4,606,223	3,715,000	1,980,653
1924–25	21,110,598	26,483,000	7,705,440	5,812,068	2,841,000	2,201,368
1925–26 preliminary	21,991,114	27,656,000	8,021,900	5,927,840	3,274,000	2,531,126

Division of Statistical and Historical Research.

[1] Figures are for the crop years 1909–10 to 1925–26 for the countries in which the sugar harvesting season begins in the fall months and is completed during the following calendar year, except in the case of cane-sugar producing countries where the season begins in May or June and is completed in the same calendar year. Production in these countries is for the calendar years 1909 to 1925.
[2] The figures quoted are the production of gur, a low grade of sugar which is mostly consumed by the natives.
[3] All grades of sugar reduced to terms of head sugar.

TABLE 410.—*Sugar: Production in specified countries, average, 1909–10 to 1913–14, annual 1922–23 to 1925–26*

BEET SUGAR IN TERMS OF RAW SUGAR

Country	Average 1909–10 to 1913–14 [1]	1922–23	1923–24	1924–25	Preliminary, 1925–26
NORTH AMERICA	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Canada [2]	11,782	16,995	22,400	48,733	[3] 41,000
United States [2]	655,000	726,000	947,000	1,172,000	962,000
Total North America	666,782	742,995	969,400	1,220,733	1,003,000
EUROPE					
England	[4] 3,084	[3] 7,852	[3] 14,875	[3] 29,745	[3] 56,300
Sweden	153,739	79,472	164,716	148,819	225,600
Denmark	127,091	98,949	114,684	149,730	193,000
Netherlands [2]	246,341	276,276	250,844	352,439	[3] 347,000
Belgium	278,837	292,534	326,273	434,851	397,000
France [2]	807,887	522,265	623,735	879,823	791,000
Spain	115,727	172,492	180,633	282,764	[3] 248,000
Italy	208,675	[3] 307,143	[3] 362,495	[3] 459,300	[3] 172,000
Switzerland	3,784	6,757	6,395	6,614	7,000
Germany	[5] 2,304,268	1,603,933	1,263,455	1,740,046	1,745,600
Austria	79,528	26,963	52,999	83,159	[3] 86,000
Czechoslovakia	1,221,274	811,297	1,104,742	1,572,807	1,681,000
Hungary	175,783	90,259	136,073	222,864	243,000
Yugoslavia	41,459	36,933	46,015	140,414	64,000
Bulgaria	4,376	19,821	31,437	44,530	([6])
Rumania	[7] 88,245	55,357	81,857	96,807	[3] 114,200
Poland	702,626	[3] 347,340	[3] 456,799	[3] 605,502	[3] 619,800
Finland	([6])	1,562	518	[3] 667	2,300
Russia	1,557,114	230,830	415,695	454,759	1,029,100
Total Europe	8,119,838	4,988,035	5,634,290	7,705,440	8,021,900
Australia	1,030	3,118	3,919	[3] 3,920	[3] 3,379
Estimated world total beet sugar [8]	8,787,650	5,734,148	6,607,609	8,930,093	9,028,300

CANE SUGAR (RAW)

NORTH AND CENTRAL AMERICA					
United States	310,837	[9] 295,095	[9] 162,023	[9] 88,483	[9] 197,528
Hawaii	567,495	537,000	691,000	775,000	[3] 723,000
Porto Rico	363,474	379,172	447,570	660,000	596,000
Virgin Islands	9,613	1,951	2,646	8,047	8,000
Central America:					
Honduras	----------	[3] 19,000	[3] 25,000	[3] 24,563	----------
Costa Rica	2,791	[3] 9,000	[3] 9,000	[3] 8,000	----------
Guatemala	8,998	14,507	28,177	26,896	[3] 28,000
Nicaragua	3,742	12,400	11,000	35,800	22,000
Salvador	[10] 18,084	22,000	[3] 18,000	22,000	----------
Panama	----------	6,572	5,480	6,084	----------
Mexico	163,388	164,616	185,568	[3] 185,050	[3] 196,000
West Indies:					
British—					
Antigua	12,919	14,046	8,803	[3] 16,388	[3] 17,000
Barbados	27,788	[3] 58,811	[3] 48,900	[3] 55,233	[3] 50,232
Jamaica	23,856	43,735	[3] 37,443	[3] 47,700	45,000
St. Christopher	13,252	[3] 12,025	[3] 11,420	[3] 17,696	[3] 15,000
Trinidad and Tobago	51,275	46,613	58,290	[3] 77,983	[3] 62,000
Cuba	2,287,052	4,083,483	4,606,223	5,812,068	[3] 5,927,840
Dominican Republic	104,664	206,270	[3] 255,855	[3] 345,492	[3] 418,920

[1] Where changes in boundary have occurred averages are estimates for territory within present boundaries.
[2] Refined sugar in terms of raw.
[3] Unofficial estimate.
[4] Two-year average.
[5] One year only, 1912–13. According to statistics of the German sugar association the 1912–13 sugar production was greater than any other year.
[6] No sugar produced.
[7] Four-year average.
[8] Exclusive of production in minor producing countries for which no data are available.
[9] Louisiana only.
[10] One year only.

TABLE 410.—*Sugar: Production in specified countries, average, 1909–10 to 1913–14, annual 1922–23 to 1925–26*—Continued

CANE SUGAR (RAW)—Continued

Country	Average 1909–10 to 1913–14	1922–23	1923–24	1924–25	Preliminary, 1925–26
NORTH AND CENTRAL AMERICA—contd.	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Haiti	[11]	[3] 10,967	[3] 6,500	[3] 9,274	[3] 15,000
French West Indies:					
Guadeloupe	40,810	27,000	30,900	[3] 44,790	[3] 45,000
Martinique	42,782	25,279	[3] 19,163	[3] 53,754	[3] 50,000
Total North and Central America reporting for all periods 1909–1913 to 1925–26	4,031,945	5,932,970	6,611,481	8,259,654	8,416,520
EUROPE AND ASIA					
Spain	17,059	9,319	8,445	9,043	[3] 10,000
India [12]	2,649,480	3,410,000	3,715,000	2,841,000	[3] 3,274,000
Formosa	192,299	391,724	507,888	532,823	558,275
Japan	75,718	88,147	86,127		
Java	1,512,569	1,989,170	1,980,653	2,201,368	[3] 2,531,126
Philippine Islands	294,380	475,325	529,091	[3] 679,000	[3] 526,000
Total Europe and Asia reporting for all periods 1909–1913 to 1925–26	4,665,787	6,275,538	6,741,077	6,263,234	6,899,401
SOUTH AMERICA					
Argentina	193,853	238,603	282,476	274,127	432,968
Brazil	[13] 332,813	839,240	881,764	916,543	[3] 840,000
British Guiana	[13] 112,312	101,649	102,796	[3] 101,779	114,000
Dutch Guiana	13,235	13,146	12,991	9,996	[3] 11,000
Paraguay	1,363	1,983	[3] 1,937	[3] 3,400	
Peru	202,518	347,531	340,645	345,025	[3] 297,000
Total South American countries reporting for all periods 1909–1913 to 1925–26	854,731	1,540,169	1,620,672	1,647,470	1,694,968
AFRICA					
Egypt	67,127	105,829	79,608	88,203	[3] 120,000
Mauritius	233,671	254,840	222,169	247,698	[3] 227,000
Union of South Africa	88,165	159,362	203,350	[3] 161,253	[3] 233,000
Portuguese East Africa	26,460	55,829	[3] 63,168	[3] 49,591	[3] 78,000
Reunion	41,653	44,474	48,954	[3] 58,666	[3] 45,000
Total Africa	457,076	620,334	617,249	605,411	703,000
OCEANIA					
Australia	216,331	343,129	320,324	486,232	[3] 592,000
Fiji	84,629	51,277	40,036	71,477	[3] 101,000
Total Oceania	300,960	394,406	360,360	557,709	693,000
Total world cane sugar production in countries reporting all periods 1909–1913 to 1925–26	10,310,499	14,763,417	15,950,839	17,333,478	18,406,889
Estimated world total cane sugar [3]	10,464,000	14,980,000	16,165,000	17,553,000	18,628,000
Total world cane and beet sugar production in countries reporting all periods 1909–1913 to 1925–26	19,098,149	20,497,565	22,558,448	26,263,571	27,435,168
Estimated world total beet and cane sugar [3]	19,252,000	20,714,000	22,773,000	26,483,000	27,656,000

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated.

Figures are for the crop years 1909–10 to 1925–26 for the countries in which the sugar harvesting season begins in the fall months and is completed during the following calendar year, except in the case of cane-sugar producing countries where the season beings in May or June and is completed in the same calendar year. Production in these countries is for the calendar years 1909 to 1925.

[3] Unofficial estimate.

[8] Exclusive of production in minor production countries for which no data are available.

[11] Too small to report.

[12] The figures quoted are the production of gur, a low grade of sugar which is mostly consumed by the natives. There are 23 modern factories in India which make sugar direct from cane. These factories produced 38,000 short tons refined sugar in 1924–25 as compared with 43,000 short tons in 1923–24. The decrease, according to the secretary of the sugar bureau, was due to inadequate supply of raw material and the higher price of gur, which induced the peasants to prefer making gur to selling cane to factories.

[13] Three-year average.

TABLE 411.—*Sugar: International trade, average 1909–1913, annual 1922–1924*

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Austria-Hungary	3,942	848,830						
Belgium	7,892	154,476	104,286	177,594	66,579	164,908	65,563	177,601
Brazil	[1] 117	38,284		277,903	[2]	168,844		37,992
British Guiana	[1] 6,112	106,196	281	101,440	323	93,147	309	96,204
Cuba	656	2,009,899	294	5,581,371	3,359	3,872,353		[3] 4,538,853
Czechoslovakia			36	350,366	43	519,484	[4] 42	734,896
Dominican Republic	[4] 766	92,351	284	189,195	164	186,946	501	243,227
Dutch East Indies	3,562	1,412,555	2,941	1,582,691	2,851	2,014,473	[5] 135	[5] 2,070,646
Egypt	43,020	8,086	160	19,675	5,022	49,904	48,799	31,095
Fiji	[6] 386	78,817	138	80,339	119	49,401	133	49,809
Germany	3,486	873,161	206,999	13,915	5,824	19,513	50,412	418,477
Hungary			9,545	28	930	49,716	142	105,923
Jamaica	395	14,494		56,735		27,700		38,776
Mauritius	[1] 2	226,255	80	322,692	131	246,704	1	201,437
Netherlands	82,721	200,490	152,559	219,477	162,528	232,844	258,223	293,091
Peru	726	146,736	22	302,447	16	311,391	277	292,671
Philippine Islands	3,950	179,432	2,692	399,112	4,985	299,807	3,741	394,436
Poland			12,636	65,344	1,571	104,871	123	271,498
Russia	3,744	293,514						
Salvador		2,935	1	10,087	1	10,188		6,057
Trinidad and Tobago	522	43,755	746	58,074	893	39,786	945	48,632
Union of South Africa.	29,694	675	17,913	36,100	2,972	32,274	537	9,375
Venezuela	[4] 285	2,181	18	10,714	27	21,931	[7] 8	[7] 5,308
PRINCIPAL IMPORTING COUNTRIES								
Algeria	37,908		42,852	1,657	42,922	501	47,520	5
Anglo-Egyptian Sudan.	13,764		11,197		8,609		14,939	
Argentina	51,690	72	81,148	2	27,089	1	7,329	112
Australia	76,233	268	[8] 5,097	[8] 2,809	[8] 588	[8] 11,121		
Austria			110,029	27	89,220	226	112,731	372
British India	715,990	26,611	516,995	17,988	559,541	22,221	624,281	6,000
Canada	297,893	820	600,135	159,949	432,791	60,974	435,482	43,550
Chile	84,965	90	104,303	78	88,437	117	87,984	
China	343,622	14,933	510,987	15,018	407,269	24,207	618,019	10,005
Denmark	21,814	22,536	21,621	654	71,544	292	57,610	519
Finland	50,077		66,072		54,528		74,279	
Formosa	554	5,744	37,787	13,085	26,193	10,646		
France	186,198	206,897	659,015	171,850	552,[illegible]8	135,972	502,494	160,818
Greece	11,718		43,542		38,813		62,289	
Hongkong			376,870	350,468	336,667	356,748	418,337	336,631
Italy	9,249	302	38,603	10	39,698	2,339	50,662	27,201
Japan	176,942	60,204	437,434	95,298	333,762	71,207	339,519	127,274
Morocco	61,402		83,009		75,939		83,151	
New Zealand	62,962	[1] 13,478	74,413	298	72,139	380	70,920	372
Norway	52,326		78,448		63,[illegible]28		83,714	
Persia	109,352	[1] 557	49,317		58,837			
Portugal	39,631				53,881		62,155	
Spain	45	63	41,337	35	812	8	[7] 41	[7] 108
Sweden	1,672	1	7,170	1	27,626	1	81,693	1
Switzerland	118,201		91,349	2	109,910	36	137,037	68
United Kingdom	1,853,605	32,603	2,121,591	32,712	1,694,865	58,667	1,946,416	81,121
United States	2,122,517	39,684	4,860,810	918,361	3,854,668	222,458	4,137,873	220,248
Yugoslavia			29,690					
Other countries	432,752	314,086	221,274	81,474	191,907	132,250	315,682	80,226
Total	7,125,060	7,472,071	11,833,726	11,717,075	9,572,399	9,626,557	10,802,048	11,160,635

Division of Statistical and Historical Research. Official sources except where otherwise noted.

The following kinds and grades have been included under the head of sugar: Brown, white candied, caramel, chancaca (Peru), crystal cube, maple, muscovado, panela. The following have been excluded: "Candy" (meaning confectionery), confectionery, glucose, grape sugar, jaggery, molasses, and sirups.

[1] Four-year average.
[2] Less than half a ton.
[3] Revista Azucarera de H. A. Himely.
[4] One year only.
[5] Java and Madura only.
[6] Three-year average.
[7] Six months.
[8] Year beginning July 1.

TABLE 412.—*Sugar, raw (96° centrifugal): Average wholesale price per pound, New York, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.[1]
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	3.7	3.6	3.8	3.9	3.9	3.9	3.9	4.1	4.2	4.3	4.4	4.2	4.0
1910	4.1	4.2	4.4	4.3	4.3	4.2	4.3	4.4	4.3	3.9	3.9	4.0	4.2
1911	3.6	3.5	3.8	3.9	3.9	3.9	4.3	4.9	5.9	5.9	5.1	4.8	4.5
1912	4.4	4.6	4.5	4.1	4.0	3.9	3.9	4.1	4.3	4.1	4.0	4.0	4.2
1913	3.5	3.5	3.5	3.4	3.3	3.3	3.6	3.7	3.7	3.5	3.6	3.4	3.5
Average 1909–1913	3.9	3.9	4.0	3.9	3.9	3.8	4.0	4.2	4.5	4.3	4.2	4.1	4.1
1914	3.3	3.4	3.0	3.0	3.2	3.3	3.3	5.7	5.8	4.4	3.9	3.9	3.8
1915	4.1	4.7	4.8	4.8	4.8	4.9	4.9	4.8	4.3	4.1	4.8	4.9	4.7
1916	4.6	4.9	5.6	6.2	6.4	6.3	6.3	5.6	5.6	6.3	6.2	5.3	5.8
1917	5.2	5.2	5.5	6.2	6.1	6.0	6.6	7.3	7.0	6.9	6.9	6.3	6.3
1918	6.0	6.0	6.0	6.0	6.0	6.0	6.1	6.1	7.0	7.3	7.3	7.3	6.4
1919	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	10.2	7.5
1920	13.0	11.4	11.9	17.7	20.8	19.7	17.6	13.4	10.7	8.3	6.8	5.3	13.0
Average 1914–1920	6.2	6.1	6.3	7.3	7.8	7.6	7.4	7.2	6.8	6.4	6.2	6.2	6.8
1921	5.4	5.3	6.1	5.4	4.9	4.2	4.4	4.7	4.3	4.2	4.1	3.7	4.7
1922	3.6	3.8	3.9	4.0	4.1	4.6	5.2	5.2	4.8	5.4	5.6	5.7	4.7
1923	5.3	6.2	7.3	7.8	7.9	7.4	6.9	6.1	7.0	7.6	7.3	7.3	7.0
1924	6.7	7.2	6.9	6.4	5.6	5.1	5.1	5.4	6.0	6.0	5.8	5.3	6.0
1925	4.6	4.6	4.7	4.5	4.3	4.4	4.3	4.4	4.3	3.9	4.0	4.1	4.3
Average 1921–1925	5.1	5.4	5.8	5.6	5.4	5.1	5.2	5.2	5.3	5.4	5.4	5.2	5.3

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.

TABLE 413.—*Sugar, granulated: Average wholesale price per pound, New York, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.[1]
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	4.5	4.4	4.6	4.8	4.8	4.7	4.7	4.8	4.9	4.9	5.0	4.9	4.8
1910	4.9	4.9	5.2	5.1	5.2	5.0	5.1	5.1	5.0	4.8	4.6	4.7	5.0
1911	4.7	4.6	4.7	4.7	4.8	4.9	5.1	5.7	6.6	6.6	6.1	5.6	5.3
1912	5.4	5.5	5.5	5.1	4.9	5.0	4.9	4.9	5.0	4.8	4.8	4.8	5.1
1913	4.5	4.2	4.2	4.1	4.1	4.1	4.5	4.6	4.5	4.2	4.2	4.1	4.3
Average 1909–1913	4.8	4.7	4.8	4.8	4.8	4.7	4.9	5.0	5.2	5.1	4.9	4.8	4.9
1914	3.9	3.9	3.8	3.7	4.0	4.2	4.2	6.5	6.8	5.9	4.9	4.8	4.7
1915	4.9	5.5	5.7	5.8	5.9	5.9	5.8	5.5	5.1	5.0	5.7	5.9	5.6
1916	5.7	6.0	6.6	7.1	7.5	7.4	7.5	7.0	6.4	7.1	7.4	6.9	6.9
1917	6.6	6.9	7.1	8.2	7.9	7.5	7.5	8.2	8.2	8.2	8.2	8.0	7.7
1918	7.4	7.3	7.3	7.3	7.3	7.3	7.4	7.4	8.5	8.8	8.8	8.8	7.8
1919	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	10.9	8.9
1920	15.4	15.0	13.7	[2] 19.2	[2] 22.5	[2] 21.2	[2] 19.1	16.7	14.3	10.8	9.6	8.1	------
Average 1914–1920	7.5	7.6	7.6	------	------	------	------	8.6	8.3	7.8	7.6	7.6	------
1921	7.6	7.1	7.8	7.3	6.3	5.7	5.5	5.8	5.6	5.2	5.2	5.0	6.2
1922	4.8	4.9	5.2	5.2	5.3	5.9	6.6	6.7	6.3	6.6	6.8	6.9	5.9
1923	6.7	7.3	8.6	9.2	9.4	9.2	8.5	7.6	8.2	9.0	8.7	8.8	8.4
1924	8.4	8.7	8.5	7.9	7.3	6.5	6.6	6.6	7.1	7.3	7.3	7.2	7.4
1925	6.1	5.8	5.9	5.6	5.5	5.5	5.3	5.4	5.4	5.0	5.1	5.3	5.5
Average 1921–1925	6.7	6.8	7.2	7.0	6.8	6.6	6.5	6.4	6.5	6.6	6.6	6.6	6.7

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.
[2] No quotations. Prices shown estimated by Bureau of Labor Statistics by applying manufacturing differential to prices of raw sugar.

TABLE 414.—*Sugar, granulated: Average retail price per pound, United States, 1913–1925*

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1913	5.8	5.5	5.4	5.4	5.4	5.3	5.5	5.6	5.7	5.5	5.4	5.4	5.5
1914	5.2	5.2	5.1	5.0	5.0	5.1	5.2	7.9	8.0	7.2	6.2	6.1	5.9
1915	6.0	6.5	6.6	6.7	6.8	6.9	7.0	6.7	6.5	6.1	6.6	6.8	6.6
1916	6.7	6.9	7.5	8.0	8.6	8.7	8.8	8.5	7.7	8.2	8.6	8.3	8.0
1917	8.0	8.1	8.8	9.6	10.1	9.4	9.2	10.0	9.9	9.8	9.6	9.5	9.3
1918	9.5	10.6	9.2	9.1	9.1	9.1	9.2	9.3	9.6	10.6	10.8	10.8	9.7
1919	10.8	10.7	10.6	10.6	10.6	10.6	10.9	11.1	11.0	11.4	12.5	14.5	11.3
1920	17.8	18.8	18.7	20.2	25.4	26.7	26.5	22.9	18.3	13.9	12.8	10.5	19.4
Av. 1914–1920	9.1	9.5	9.5	9.9	10.8	10.9	11.0	10.9	10.1	9.6	9.6	9.5	10.0
1921	9.7	8.9	9.7	9.7	8.4	7.8	7.1	7.5	7.3	6.9	6.7	6.5	8.0
1922	6.2	6.4	6.5	6.7	6.6	7.1	7.6	8.1	7.9	7.9	8.1	8.3	7.3
1923	8.3	8.7	10.2	10.6	11.2	11.1	10.5	9.6	9.6	10.6	10.3	10.4	10.1
1924	10.2	10.3	10.4	9.9	9.2	8.3	8.4	8.2	8.6	8.8	8.8	8.8	9.2
1925	8.1	7.7	7.7	7.5	7.2	7.2	7.1	7.0	7.0	6.8	6.6	6.7	7.2
Av. 1921–1925	8.5	8.4	8.9	8.9	8.5	8.3	8.1	8.1	8.1	8.2	8.1	8.1	8.4

Division of Statistical and Historical Research.
Compiled from Bureau of Labor Statistics reports.

TABLE 415.—*Sugar cane sirup: Acreage, production, and total farm value, by States, 1924 and 1925*

State	Acreage		Yield per acre		Production		Price per gallon received by producers Dec. 1		Total farm value, basis Dec. 1 price	
	1924	1925	1924	1925	1924	1925	1924	1925	1924	1925
	1,000 acres	*1,000 acres*	*Gals.*	*Gals.*	*1,000 gals.*	*1,000 gals.*	*Cents*	*Cents*	*1,000 dols.*	*1,000 dols.*
South Carolina	10	9	125	90	1,250	810	87	100	1,088	810
Georgia	30	32	125	110	3,750	3,520	95	100	3,562	3,520
Florida	9	10	200	210	1,800	2,100	100	105	1,800	2,205
Alabama	20	22	106	140	2,120	3,080	110	110	2,332	3,388
Mississippi	8	14	55	143	440	2,002	135	105	594	2,102
Arkansas	3	3	70	120	210	360	110	120	231	432
Louisiana	47	18	202	289	9,512	5,208	100	72	9,512	3,750
Texas	18	14	82	165	1,476	2,310	125	130	1,845	3,003
United States	145	122	141.8	158.9	20,558	19,390	102.0	99.1	20,964	19,210

Division of Crop and Livestock Estimates.

SORGO FOR SIRUP

TABLE 416.—*Sorgo for sirup: Acreage, production, and farm value, United States, 1917–1925*

Year	Acreage	Average yield per acre	Production	Price per gallon received by producers Dec. 1	Farm value
	1,000 acres	*Gallons*	*1,000 gallons*	*Cents*	*1,000 dollars*
1917	415	90.3	37,472	69.5	26,055
1918	422	79.2	33,387	93.4	31,191
1919	487	80.9	39,413	110.8	43,683
1920	536	92.4	49,505	106.9	52,943
1921	518	88.0	45,566	62.9	28,681
1922	447	81.5	36,440	71.0	25,855
1923	380	84.2	32,001	86.2	27,595
1924	385	68.3	26,284	94.4	24,821
1925 [1]	377	67.6	25,492	94.8	24,168

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 417.—*Sorgo for sirup: Acreage, production, and farm value, by States, 1924 and 1925*

State	Acreage		Average yield per acre		Production		Price per gallon received by producers Dec. 1		Farm value	
	1924	1925 [1]	1924	1925	1924	1925 [1]	1924	1925	1924	1925 [1]
	1,000 acres	*1,000 acres*	*Galls.*	*Galls.*	*1,000 gallons*	*1,000 gallons*	*Cents*	*Cents*	*1,000 dollars*	*1,000 dollars*
Ohio	4	4	75	72	300	288	115	125	345	360
Indiana	3	2	85	88	255	176	105	112	268	197
Illinois	9	10	75	77	675	770	112	110	756	847
Wisconsin	2	2	54	70	108	140	120	135	130	189
Minnesota	2	2	56	71	112	142	108	115	121	163
Iowa	5	5	72	79	360	395	110	115	396	454
Missouri	22	22	81	76	1,782	1,672	99	102	1,764	1,705
Nebraska	2	2	80	70	160	140	100	100	160	140
Kansas	4	5	75	50	300	250	98	102	294	255
Virginia	12	11	95	78	1,140	858	90	95	1,026	815
West Virginia	8	8	92	80	736	640	105	115	773	736
North Carolina	31	28	87	68	2,697	1,904	90	98	2,427	1,866
South Carolina	21	20	62	39	1,302	780	80	92	1,042	718
Georgia	25	19	71	45	1,775	855	84	95	1,491	812
Kentucky	46	48	80	80	3,680	3,840	97	96	3,570	3,686
Tennessee	30	28	73	68	2,190	1,904	96	94	2,102	1,790
Alabama	35	42	50	70	1,750	2,940	98	90	1,715	2,646
Mississippi	36	34	55	76	1,980	2,584	93	75	1,841	1,938
Arkansas	36	38	58	68	2,088	2,584	93	93	1,942	2,403
Louisiana	1	1	30	75	30	75	89	80	27	60
Oklahoma	16	14	68	76	1,088	1,064	90	93	979	990
Texas	33	31	50	46	1,650	1,426	92	93	1,518	1,326
New Mexico	2	1	63	65	126	65	106	110	134	72
United States	385	377	68.3	67.6	26,284	25,492	94.4	94.8	24,821	24,168

Division of Crop and Livestock Estimates.

[1] Preliminary.

MAPLE SUGAR AND SIRUP

TABLE 418.—*Maple sugar and sirup: Production by States, 1922–1925, United States, 1917–1925*

State and year	Trees tapped	Sugar made	Sirup made	Total product in terms of sugar [1]	Average per tree	
					As sugar	As sirup
	Number	*Pounds*	*Gallons*	*Pounds*	*Pounds*	*Gallons*
Maine:						
1922	290,000	31,000	62,000	522,000	1.80	.22
1923	264,000	33,000	45,000	393,000	1.50	.19
1924	314,000	24,000	72,000	600,000	1.91	.24
1925	320,000	22,000	51,000	432,000	1.35	.17
New Hampshire:						
1922	800,000	247,000	189,000	1,760,000	2.20	.28
1923	760,000	343,000	145,000	1,505,000	1.98	.25
1924	798,000	279,000	214,000	1,991,000	2.49	.31
1925	798,000	227,000	161,000	1,516,000	1.90	.24
Vermont:						
1922	5,559,000	3,152,000	1,065,000	11,674,000	2.10	.26
1923	5,281,000	2,307,000	913,000	9,612,000	1.82	.23
1924	5,445,000	2,445,000	1,222,000	12,221,000	2.24	.28
1925	5,554,000	1,794,000	956,000	9,442,000	1.70	.21
Massachusetts:						
1922	272,000	134,000	82,000	788,000	2.90	.36
1923	261,000	87,000	49,000	483,000	1.85	.23
1924	272,000	125,000	63,000	629,000	2.31	.29
1925	272,000	126,000	56,000	571,000	2.10	.26
Connecticut:						
1922	10,000	2,000	4,000	35,000	3.50	.44
1923	9,000	6,000	1,000	15,000	1.68	.21
1924						
1925						
New York:						
1922	4,487,000	1,185,000	1,085,000	9,865,000	2.20	.28
1923	4,000,000	1,376,000	903,000	8,600,000	2.15	.27
1924	4,080,000	861,000	1,069,000	9,413,000	2.31	.29
1925	3,998,000	624,000	896,000	7,792,000	1.95	.24
Pennsylvania:						
1922	815,000	242,000	245,000	2,201,000	2.70	.34
1923	831,000	209,000	265,000	2,329,000	2.80	.35
1924	773,000	184,000	265,000	2,304,000	2.98	.37
1925	696,000	208,000	191,000	1,736,000	2.49	.31
Ohio:						
1922	2,088,000	64,000	420,000	3,424,000	1.64	.20
1923	1,879,000	112,000	700,000	5,712,000	3.04	.38
1924	1,747,000	38,000	467,000	3,774,000	2.16	.27
1925	1,747,000	122,000	341,000	2,850,000	1.63	.20
Indiana:						
1922	558,000	12,000	143,000	1,156,000	2.07	.26
1923	536,000	29,000	180,000	1,469,000	2.74	.34
1924	536,000	18,000	180,000	1,458,000	2.72	.34
1925	515,000	40,000	144,000	1,192,000	2.31	.29
Michigan:						
1922	857,000	54,000	197,000	1,628,000	1.90	.24
1923	900,000	151,000	285,000	2,431,000	2.70	.34
1924	855,000	80,000	193,000	1,624,000	1.90	.24
1925	838,000	75,000	179,000	1,507,000	1.80	.22
Wisconsin:						
1922	538,000	24,000	148,000	1,210,000	2.25	.28
1923	570,000	32,000	119,000	984,000	1.73	.22
1924	587,000	24,000	158,000	1,288,000	2.19	.27
1925	575,000	28,000	110,000	908,000	1.58	.20
Total, 11 States: [2]						
1917	17,313,000	10,525,000	4,258,000	44,589,000	2.58	.32
1918	19,132,000	12,944,000	4,863,000	51,848,000	2.71	.34
1919	18,798,000	9,787,000	3,804,000	40,223,000	2.14	.27
1920	18,895,000	7,324,000	3,580,000	36,400,000	1.90	.24
1921	15,114,000	4,730,000	2,386,000	23,820,000	1.58	.20
1922	16,274,000	5,147,000	3,640,000	34,263,000	2.11	.26
1923	15,291,000	4,635,000	3,605,000	33,533,000	2.19	.27
1924 [3]	15,407,000	4,078,000	3,903,000	35,302,000	2.29	.29
1925 [3]	15,313,000	3,266,000	3,085,000	27,946,000	1.82	.23

Division of Crop and Livestock Estimates. Figures for 1925 subject to revision.

[1] One gallon of sirup taken as equivalent to 8 pounds of sugar.

[2] These 11 States produced in 1919, 97.1 per cent of the maple sugar crops of the United States and 97.2 per cent of the maple sirup.

[3] Ten States.

TABLE 419.—*Maple sugar and sirup: Estimated price received by producers, United States, 1917–1925*

Month	Sugar (cents per pound)									Sirup (dollars per gallon)								
	1917	1918	1919	1920	1921	1922	1923	1924	1925	1917	1918	1919	1920	1921	1922	1923	1924	1925
Feb. 15	14.7	18.8	22.0	29.3	24.9	17.5	22.0	23.4	23.3	1.22	1.58	1.86	2.35	2.27	1.84	1.89	2.01	2.05
Mar. 15	14.7	20.5	25.3	31.6	25.7	21.9	23.2	25.5	24.4	1.30	1.76	1.99	2.58	2.17	1.94	1.96	2.04	2.13
Apr. 15	16.3	22.5	26.9	37.0	25.7	23.1	26.0	25.6	27.8	1.33	1.80	2.03	2.92	2.21	1.93	2.09	2.08	2.10
May 15	16.2	22.6	26.3	36.0	21.5	21.6	26.4	27.8	27.4	1.34	1.85	2.02	2.93	2.08	1.86	1.75	2.06	2.10
June 15	15.9	22.0	26.2	35.1	20.7	21.3	25.6	25.6	26.5	1.33	1.85	2.19	2.84	2.10	1.86	2.05	1.97	2.10

Division of Crop and Livestock Estimates.

CLOVER, TIMOTHY, AND ALFALFA SEED

TABLE 420.—*Clover seed: Acreage, production, and farm value, United States, 1916–1925*

Year	Acreage	Average yield per acre	Production	Average farm price per bushel, Nov. 15	Farm value
	1,000 acres	*Bushels*	*1,000 bushels*	*Dollars*	*1,000 dollars*
1916	939	1.8	1,706	9.18	15,661
1917	821	1.8	1,488	12.84	19,107
1918	820	1.5	1,197	19.80	23,705
1919	942	1.6	1,484	26.75	39,700
1920	1,082	1.8	1,944	11.95	23,227
1921	889	1.7	1,538	10.75	16,529
1922	1,170	1.7	1,955	9.38	18,332
1923	775	1.6	1,228	10.76	13,218
1924	809	1.1	927	14.51	13,455
1925 [1]	789	1.3	1,029	14.86	15,288

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 421.—*Clover seed: Acreage, production, and farm value, by States, 1924 and 1925*

State	Acreage		Average yield per acre		Production		Price per bushel received by producers Dec. 1		Farm value	
	1924	1925 [1]	1924	1925	1924	1925 [1]	1924 [2]	1925	1924	1925 [1]
	1,000 acres	*1,000 acres*	*Bushels*	*Bushels*	*1,000 bushels*	*1,000 bushels*	*Dollars*	*Dollars*	*1,000 dollars*	*1,000 dollars*
New York	8	7	2.7	1.7	22	12	14.00	14.30	308	172
Pennsylvania	17	16	1.5	1.8	26	29	14.00	15.70	364	455
Ohio	153	168	1.0	1.1	156	185	16.00	15.10	2,496	2,794
Indiana	171	115	.8	.7	137	80	14.80	15.40	2,028	1,232
Illinois	110	110	1.1	.8	121	88	15.80	15.60	1,912	1,373
Michigan	90	72	1.2	1.4	108	101	14.00	15.00	1,512	1,515
Wisconsin	60	122	1.1	1.9	66	232	14.50	14.60	957	3,387
Minnesota	63	43	1.9	2.0	120	86	13.30	14.40	1,596	1,238
Iowa	66	76	.7	1.0	46	76	15.20	16.00	699	1,216
Missouri	23	20	1.4	1.5	32	30	13.00	13.60	416	408
Nebraska	9	7	1.2	2.1	11	15	13.00	12.00	143	180
Kansas	14	14	2.0	1.8	28	25	13.00	12.20	364	305
Tennessee	4	5	1.6	1.4	6	7	14.00	16.00	84	112
Mississippi [3]	8	13	4.5	5.4	36	70	4.25	4.10	153	287
Louisiana [3]	8	7	4.0	4.0	32	28	6.00	3.64	192	102
Idaho	14	11	3.0	5.0	42	55	12.00	14.20	504	781
Oregon	4	3	1.5	2.5	6	8	12.00	15.00	72	120
Total	809	789	1.1	1.3	927	1,029	14.51	14.86	13,455	15,288

Division of Crop and Livestock Estimates.

[1] Preliminary.
[2] Price per bushel for 1924 is price Nov. 15, and values for 1924 are computed on that basis.
[3] Lespediza, not included in totals.

TABLE 422.—*Clover seed: Receipts and shipments, Chicago, 1910–1925*

[Thousand pounds—i. e., 000 omitted]

RECEIPTS

Year beginning September	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Total
1910	1,340	1,375	865	231	94	524	751	378	364	405	59	270	6,656
1911	519	198	176	95	331	337	357	307	213	194	343	574	3,644
1912	271	950	521	295	493	545	901	279	109	165	41	40	4,610
1913	188	225	989	1,446	1,035	418	837	412	210	836	429	1,180	8,155
1914	789	596	1,136	1,723	1,773	1,993	900	438	55	0	48	327	9,778
1915	2,190	1,921	1,953	1,205	980	1,236	1,123	974	294	0	53	138	12,067
1916	1,356	1,308	995	1,416	660	1,192	833	798	393	307	2	602	9,862
1917	1,346	945	1,119	587	1,079	1,688	797	217	298	108	22	135	8,371
1918	192	1,597	1,337	1,146	1,974	1,002	1,175	464	88	0	271	798	10,044
1919	1,539	1,816	1,941	1,606	2,840	2,557	2,239	884	7	200	195	213	16,037
1920	1,549	2,448	1,033	1,314	2,762	3,150	3,996	1,570	418	319	84	365	19,008
Average 1914–1920	1,280	1,519	1,363	1,285	1,724	1,831	1,580	764	222	133	96	368	12,167
1921	739	1,235	2,040	2,064	1,585	1,692	2,448	1,050	352	169	77	997	14,448
1922	1,368	1,299	1,479	1,214	1,044	629	1,825	845	348	109	8	271	10,439
1923	641	1,681	1,109	1,039	633	1,672	2,054	1,352	239	41	1	42	10,504
1924	360	863	2,078	1,723	1,537	1,507	1,574	740	9	27	68	328	10,814
1925	393	1,027	1,992	2,603									

SHIPMENTS

1910	165	183	244	224	480	682	504	252	185	52	12	118	3,101
1911	51	111	204	131	426	621	420	363	106	48	144	59	2,684
1912	141	309	862	372	502	335	1,525	707	90	78	33	55	5,519
1913	138	152	264	668	882	1,576	1,591	740	544	301	381	264	7,501
1914	309	124	484	1,665	1,197	1,583	1,290	792	188	13	69	104	7,818
1915	714	596	1,506	879	1,125	1,438	2,027	1,481	415	39	78	88	10,386
1916	279	602	1,021	962	1,065	1,696	2,086	1,606	583	157	309	429	10,795
1917	423	483	430	1,144	908	1,923	1,116	182	246	4	60	167	7,086
1918	191	527	1,447	787	984	1,139	1,109	653	18	94	25	136	7,110
1919	271	386	952	888	2,589	1,619	026	842	248	98	118	61	8,998
1920	107	589	691	769	1,554	2,997	3,104	1,694	370	167	239	528	12,809
Average 1914–1920	328	472	933	1,013	1,346	1,771	1,665	1,036	295	82	128	216	9,286
1921	371	781	691	1,236	1,728	2,167	2,416	1,030	818	147	133	230	11,748
1922	547	1,172	1,187	1,169	1,430	906	1,252	820	223	75	122	285	9,188
1923	530	514	705	670	1,370	1,075	1,477	1,502	346	230	177	224	8,820
1924	180	402	1,395	803	1,148	1,273	985	418	43	54	114	108	6,923
1925	77	236	456	917									

Division of Statistical and Historical Research. Compiled from Chicago Board of Trade and the Seed World.

TABLE 423.—*Timothy seed: Receipts and shipments, Chicago, 1910–1925*

[Thousand pounds—i. e., 000 omitted]

RECEIPTS

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1910	1,878	7,509	3,778	1,741	1,563	1,311	1,560	1,205	368	106	55	87	21,161
1911	4,451	5,829	4,011	2,649	1,120	792	879	868	557	388	242	158	21,944
1912	2,916	6,875	5,505	3,608	2,182	2,361	3,019	2,831	3,964	1,509	1,764	2,647	39,181
1913	3,601	5,947	4,232	3,421	2,131	2,191	1,763	4,393	1,977	828	1,446	2,410	34,340
1914	4,914	11,208	3,469	2,650	3,487	3,050	3,087	4,129	1,165	1,101	403	752	39,415
1915	1,201	9,894	5,578	4,039	2,416	1,431	2,203	2,167	1,019	1,039	704	296	31,987
1916	2,487	10,565	5,631	3,989	3,051	2,149	2,478	6,279	3,367	2,442	1,117	924	44,479
1917	3,810	6,525	5,172	2,966	1,915	2,006	2,242	2,554	1,434	1,250	392	677	30,943
1918	764	3,198	5,175	3,242	1,463	1,578	2,234	2,985	3,772	2,398	1,348	891	29,048
1919	7,450	13,191	6,124	2,582	1,643	3,186	3,381	3,118	1,338	1,093	641	1,135	44,882
1920	3,313	12,777	9,013	5,269	3,446	2,343	3,386	4,056	2,601	2,368	1,249	531	50,351
Average 1914–1920	3,420	9,622	5,737	3,534	2,489	2,249	2,716	3,613	2,099	1,670	836	744	38,729
1921	10,849	6,269	4,586	3,197	2,669	2,404	2,899	2,827	780	1,215	472	119	38,286
1922	8,985	9,600	4,516	2,048	1,050	570	1,352	1,697	1,243	398	355	84	31,898
1923	5,061	13,722	4,419	1,606	1,299	762	1,311	1,815	1,162	86	315	507	32,065
1924	3,698	12,714	4,707	3,876	1,654	2,138	1,928	2,566	1,727	1,167	664	687	37,526
1925	5,933	7,599	5,009	2,047	1,651								

TABLE 423.—*Timothy seed: Receipts and shipments, Chicago, 1910–1925*—Con.

[Thousand pounds—i. e., 000 omitted]

SHIPMENTS

Year beginning September	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
1912	1,825	4,198	1,701	676	899	2,078	2,109	2,751	1,004	159	4	3	17,407
1911	2,452	5,038	2,035	2,051	688	482	958	1,356	761	360	54	158	16,392
1910	1,951	7,504	4,373	4,912	2,224	3,313	3,152	4,426	4,629	2,229	1,521	1,344	41,578
1913	1,774	3,735	3,285	1,896	1,893	2,065	2,021	3,977	1,955	888	786	2,592	26,867
1914	2,056	4,845	2,511	2,124	3,549	2,565	1,877	2,430	2,623	1,727	955	1,205	28,467
1915	1,372	5,344	5,283	3,796	2,485	1,892	2,326	4,203	2,715	1,212	162	395	31,185
1916	2,826	7,956	5,363	4,071	3,128	2,921	4,082	7,775	4,321	2,288	779	729	46,239
1917	2,605	3,887	2,816	1,511	1,291	1,720	2,049	5,160	1,459	147	509	427	23,581
1918	1,218	1,774	2,674	3,903	2,688	1,659	3,178	3,621	4,579	1,817	780	1,253	29,144
1919	2,340	6,301	3,142	1,964	2,588	4,007	3,737	3,404	1,852	2,497	735	1,057	33,624
1920	2,233	4,072	4,150	1,787	1,594	3,810	4,531	5,410	2,708	1,550	587	1,001	33,433
Average 1914–1920	2,093	4,883	3,706	2,737	2,475	2,653	3,111	4,572	2,894	1,605	644	867	32,239
1921	5,233	8,567	3,750	2,340	2,846	2,551	4,108	5,187	2,129	2,598	336	352	39,997
1922	3,896	6,303	4,580	3,943	1,895	2,106	2,451	3,291	2,221	1,394	353	217	32,650
1923	2,481	3,926	1,804	1,573	1,001	735	2,040	3,206	2,904	1,202	416	516	21,804
1924	1,040	7,546	4,726	1,295	1,383	1,430	2,478	3,270	2,166	557	232	362	26,485
1925	2,677	4,021	3,011	709	598	------	------	------	------	------	------	------	------

Division of Statistical and Historical Research. Compiled from Chicago Board of Trade and the Seed World.

TABLE 424.—*Forage plant seed: Imports into United States, 1913–1925* [1]

[Thousand pounds—i. e., 000 omitted]

Kind of seed	Year ended June 30												
	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Alfalfa	6,104	5,203	6,930	3,252	3,170	45	770	18,831	942	7,259	8,784	12,818	4,783
Canada blue grass	791	567	1,043	698	495	1,229	739	552	1,148	1,034	836	817	1,150
Kentucky blue grass	5	3	1	1	------	5	------	------	------	------	------	------	------
Awnless brome grass	75	139	7	(2)	1	------	------	169	9	14	------	------	------
Alsike clover	766	2,688	778	1,113	4,329	3,528	7,032	5,648	4,121	7,057	5,566	11,056	10,425
Crimson clover	5,377	8,534	11,690	4,504	5,776	1,603	1,484	10,053	5,566	3,443	2,262	7,745	4,834
Red clover	5,333	5,921	8,932	32,509	5,344	768	1,051	19,268	16,333	10,391	448	24,729	6,541
White clover	979	640	373	149	158	53	1	189	516	1,623	520	1,408	1,227
Biennial white sweet clover	33	42	194	(2)	195	71	941	2,215	3,133	------	------	4,039	3,493
Biennial yellow sweet clover	------	243	201	(2)	9	------	1	202	235	------	------	222	52
Clover mixtures	------	------	------	------	26	169	550	265	23	57	20	74	13
Grass mixtures	------	------	------	------	124	6	(2)	3	6	43	(2)	------	200
Spring vetch and oats mixtures	------	------	------	------	------	------	------	------	4	------	------	------	------
Meadow fescue	------	------	------	------	------	------	------	3	------	1	------	(2)	600
Broomcorn millet	1,194	1,520	1,305	1,102	786	1,584	------	225	152	1,496	5,360	595	253
Foxtail millet	291	523	338	118	260	9	138	140	434	302	65	184	243
Orchard grass	119	1,939	701	754	1,286	58	177	2,771	------	2,922	768	603	992
Rape	1,194	2,981	3,966	4,019	2,286	11,316	639	5,766	4,245	4,763	6,384	6,600	4,345
Redtop	------	------	------	------	------	------	------	7	(2)	2	11	(2)	700
Perennial rye grass	1,117	1,429	1,342	1,510	1,668	1,584	831	1,958	1,523	1,868	1,834	1,952	1,335
Italian rye grass	345	311	485	383	481	606	208	980	577	828	860	1,034	831
Timothy	40	23	18	119	4	22	155	37	391	95	32	(3)	500
Hairy vetch	1,948	2,477	466	68	296	231	257	1,220	1,387	1,941	1,599	3,215	2,068
Spring vetch	1,390	682	221	62	30	118	435	1,048	542	345	1,858	1,210	1,266

Hay, Feed, and Seed Division.

[1] Imports of all seeds up to and including the fiscal year 1913, also of perennial and Italian rye grass and hairy vetch up to and including 1917, and sweet clover for all years, are based on information furnished by U. S. Customs Service. All other figures represent imports of seed permitted entry under the seed importation act.

[2] Less than 500 pounds.

[3] Figures missing.

TABLE 425.—*Alfalfa seed: Estimated price per bushel, received by producers, United States, 1912–1925*

Year beginning July	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1912	8.32	8.58	9.02	7.87	8.23	7.86	7.66	8.15	8.19	8.36	8.21	8.08	8.21
1913	8.20	7.96	7.42	6.96	6.36	6.60	6.55	6.48	6.60	6.77	6.77	6.83	6.96
1914	6.92	6.81	7.21	7.29	7.29	7.57	7.61	7.86	7.92	8.45	8.38	8.31	7.52
1915	8.51	8.30	7.94	8.37	8.65	8.88	8.84	9.20	10.02	10.39	10.70	10.10	9.16
1916	10.30	9.33	9.27	8.61	8.30	8.56	7.97	7.75	8.53	9.03	8.85	8.61	8.76
1917	8.71	8.69	9.04	9.04	9.43	9.58	10.14	9.90	10.60	10.53	10.09	10.13	9.66
1918	9.67	9.88	10.04	9.91	9.38	9.65	10.07	10.48	10.64	11.18	12.13	11.79	10.40
1919	10.88	11.34	12.34	14.90	15.23	16.68	16.60	19.57	21.43	21.80	22.40	20.42	16.97
1920	19.41	16.03	14.89	13.35	12.25	10.24	9.95	9.01	9.31	8.71	8.97	8.73	11.74
1921	7.89	8.51	8.53	8.33	8.09	7.63	7.39	8.45	7.50	9.00	8.89	8.48	8.22
1922	9.00	7.74	8.00	7.94	8.50	9.45	9.58	9.96	10.56	10.44	10.59	10.57	9.36
1923	10.25	10.38	9.20	10.75	10.21	10.19	10.43	10.51	11.17	11.41	11.67	11.39	10.63
1924	11.13	10.99	10.74	10.39	10.16	10.33	10.52	11.05	11.72	12.73	12.00	10.99	11.06
1925	11.41	9.88	10.51	10.30	10.65	9.87							

Division of Crop and Livestock Estimates.

TABLE 426.—*Clover seed: Estimated price per bushel, received by producers, United States, 1910–1925*

Year beginning Sept.	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Weighted av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	8.27	8.13	7.70	7.94	8.27	8.37	8.56	8.79	8.74	8.80	8.83	9.65	8.30
1911	10.19	10.33	10.37	10.62	10.89	12.22	12.89	12.91	12.53	11.69	10.64	9.80	11.25
1912	9.39	9.37	9.06	9.00	9.41	10.28	10.42	11.00	10.74	9.77	9.78	9.37	9.71
1913	7.31	7.00	7.33	7.70	7.99	8.07	8.17	8.06	7.87	7.96	8.12	8.76	7.75
Av. 1910–1913	8.79	8.71	8.62	8.82	9.14	9.74	10.01	10.19	9.97	9.56	9.34	9.40	9.25
1914	9.10	8.24	8.02	8.12	8.51	8.60	8.55	8.36	8.14	7.90	7.96	7.94	8.41
1915	8.49	9.70	9.67	10.01	10.27	10.47	10.76	10.38	9.98	9.47	9.15	9.12	9.98
1916	8.65	8.54	9.20	9.40	9.60	9.87	10.32	10.41	10.40	10.29	10.50	10.53	9.54
1917	10.89	11.92	12.91	13.53	14.48	16.46	17.49	17.86	16.56	15.88	14.71	15.20	14.48
1918	16.61	19.01	20.03	20.67	21.55	21.79	22.61	24.81	24.48	23.37	23.25	24.33	21.01
1919	25.38	26.47	26.53	27.63	28.06	31.21	31.88	32.23	29.84	26.21	25.52	19.97	28.34
1920	17.77	13.18	11.64	10.28	10.82	10.61	10.98	10.80	10.71	10.20	10.00	10.37	11.81
Av. 1914–1920	13.84	13.87	14.00	14.23	14.76	15.57	16.08	16.44	15.73	14.76	14.44	13.92	14.80
1921	10.25	10.21	10.09	10.38	10.69	11.88	13.00	13.13	12.84	11.60	11.00	9.88	11.14
1922	8.85	9.66	10.18	10.88	11.16	11.52	11.71	11.48	11.20	10.84	10.94	10.46	10.71
1923	11.07	12.20	12.18	12.22	12.51	12.67	13.04	13.09	13.07	12.72	12.42	12.09	12.38
1924	12.15	12.80	13.42	15.31	16.17	16.95	18.19	17.40	16.82	15.48	15.67	14.86	15.35
1925	13.42	14.42	14.85	15.48									

Division of Crop and Livestock Estimates.

TABLE 427.—*Timothy seed: Estimated price per bushel, received by producers, United States, 1910–1925*

Year beginning August	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Weighted av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910		3.77	4.03	4.08	4.11	4.12	4.51	4.93	5.17	5.24	5.24	5.48	4.28
1911	6.52	6.65	6.91	6.90	6.72	6.99	7.26	7.33	7.27	7.16	6.68	5.96	6.87
1912	3.20	2.09	1.95	1.82	1.79	1.79	1.78	1.72	1.74	1.76	1.77	1.94	2.01
1913	2.01	2.13	2.02	2.08	2.10	2.07	2.12	2.30	2.28	2.38	2.23	2.32	2.13
Av. 1910–1913	3.91	3.66	3.72	3.72	3.68	3.74	3.92	4.07	4.12	4.14	3.98	3.92	3.82
1914	2.43	2.46	2.34	2.34	2.18	2.63	2.66	2.78	2.69	2.75	2.65	2.57	2.49
1915	2.56	2.62	2.72	2.91	2.86	3.05	3.19	3.28	3.54	3.33	3.26	3.08	2.89
1916	2.36	2.22	2.27	2.25	2.31	2.44	2.46	2.70	2.76	3.09	3.09	3.04	2.42
1917	3.23	3.31	3.61	3.25	3.37	3.57	3.78	3.84	3.74	3.84	3.56	3.67	3.50
1918	3.87	3.79	4.08	4.26	4.21	4.34	4.51	4.54	4.69	5.05	4.63	4.49	4.19
1919	4.58	4.55	4.78	4.67	4.98	5.35	5.62	5.61	5.63	5.61	5.46	5.44	4.98
1920	4.44	3.52	3.25	3.09	3.16	3.04	2.75	2.97	2.84	2.90	2.99	2.98	3.29
Av. 1914–1920	3.35	3.21	3.29	3.25	3.30	3.49	3.57	3.69	3.69	3.80	3.66	3.61	3.39
1921	2.71	2.31	2.70	2.41	2.57	2.70	2.82	2.95	3.11	3.21	2.81	2.53	2.64
1922	2.20	2.28	2.48	2.49	2.69	3.06	2.98	3.00	2.99	2.87	2.92	3.16	2.60
1923	2.63	3.01	3.12	3.15	3.19	3.37	3.56	3.60	3.54	3.48	3.44	3.23	3.19
1924	3.20	3.12	3.16	2.88	3.03	3.04	3.03	3.15	3.24	3.10	3.05	3.47	3.11
1925	3.36	3.21	3.21	3.31	3.41								

Division of Crop and Livestock Estimates.

TABLE 428.—*Field seeds: Average price per 100 pounds paid to growers for crops of 1920–1924*

ALFALFA SEED

State or State subdivision	1920	1921	1922	1923	1924	State or State subdivision	1920	1921	1922	1923	1924
Southern Arizona	$17.00	$14.35	$15.50	$16.25	$16.25	Montana	$17.00	$17.85	$21.05	$19.25	$19.50
California	15.90	14.00	14.75	17.00	17.25	Nebraska	15.80	10.10	13.90	------	------
Colorado	13.00	11.85	11.60	15.25	15.40	Eastern New Mexico	14.00	10.80	13.00	14.30	15.80
Southern Idaho	11.80	12.00	14.95	15.50	15.00	Western Oklahoma	12.85	11.20	13.30	15.25	13.65
Northeastern Kansas	13.60	11.10	------	------	------	Western Oregon	18.00	13.00	------	------	------
Northwestern Kansas	14.25	10.65	12.10	15.50	14.65	South Dakota	18.75	13.20	17.00	18.35	19.50
Southeastern Kansas	16.40	13.60	------	------	------	Western Texas	20.65	14.75	13.10	14.50	15.50
Southwestern Kansas	14.70	11.35	12.90	15.00	14.70	Northern Utah	16.00	11.75	15.50	16.00	16.00

ALSIKE CLOVER SEED

Southern Idaho	$22.00	$14.50	$13.60	$13.50	$14.10	Northwestern Ohio	$22.30	$13.30	$12.90	$13.05	$16.20
Northern Illinois	22.05	14.65	13.80	14.20	16.50	Western Oregon	23.50	13.65	15.20	13.25	13.55
Northern Indiana	21.75	14.80	14.55	12.85	15.25	Northeastern Wisconsin	18.95	14.30	11.80	12.45	13.80
Iowa	19.95	15.15	------	------	------	Southeastern Wisconsin	20.20	14.20	12.85	12.25	12.90
Southern Michigan	20.90	13.50	13.50	12.90	15.40						
Minnesota	19.25	13.65	12.95	12.30	15.40						
Western New York	21.10	14.50	------	------	------						

RED CLOVER SEED

Idaho	$13.95	$15.10	$16.75	$18.25	$21.30	Minnesota	$16.75	$15.50	$17.10	$19.00	$23.90
Northern Illinois	18.70	16.30	17.25	20.40	27.50	Missouri	15.85	16.05	15.55	18.35	21.80
Central Illinois	18.40	16.55	16.55	20.40	27.50	Nebraska	14.65	15.35	16.15	------	------
Northern Indiana	19.10	17.00	17.20	19.70	26.35	Northwestern Ohio	19.05	17.20	17.55	19.30	27.35
Central Indiana	18.50	16.55	16.15	19.70	26.35	Western Oregon	22.35	15.30	20.10	19.65	23.05
Southern Indiana	16.05	16.45	15.85	------	------	Washington	18.00	15.25	------	------	------
Northeastern Iowa	17.80	16.45	16.60	------	------	Northeastern Wisconsin	16.30	16.65	17.35	18.30	25.15
Southeastern Iowa	18.30	15.40	16.10	19.85	26.35	Southeastern Wisconsin	18.40	17.55	17.90	19.70	26.35
Southwestern Iowa	17.25	15.90	17.05	------	------	Southwestern Wisconsin	16.75	16.85	17.45	19.70	26.35
Kansas	15.65	15.30	16.30	------	------						
Southern Michigan	17.10	16.60	17.35	18.70	27.20						

SWEET CLOVER SEED

Colorado	$9.90	$4.25	$4.55	$8.60	$8.25	Nebraska	$12.50	$6.50	------	------	------
Idaho	10.00	6.50	------	------	------	North Dakota	9.60	4.40	$7.35	$9.00	$8.35
Illinois	16.30	10.15	7.10	9.70	10.20	Oklahoma	9.00	5.00	------	------	------
Kansas	8.15	5.10	7.75	9.10	8.80	South Dakota	9.50	5.00	7.00	9.70	8.05
Minnesota	8.00	4.50	6.85	9.15	8.15	Utah	8.50	3.00	------	10.00	10.20
Montana	11.50	5.00	7.00	9.15	8.35						

TIMOTHY SEED

Southern Idaho	$5.25	$4.10	$4.45	$5.50	$5.90	West central Minnesota	$5.25	$4.75	$4.75	------	------
Northern Illinois	6.50	4.50	4.70	------	------	Northeastern Missouri	5.75	4.30	4.95	$6.05	$5.95
Central Illinois	6.30	4.85	4.95	6.15	5.75	Northwestern Missouri	5.50	3.95	4.60	5.55	5.85
Southern Illinois	6.75	4.95	5.15	6.00	5.75	Southwestern Missouri	4.55	3.70	------	------	------
Indiana	6.25	4.70	5.15	5.50	5.75	Nebraska	5.50	5.50	------	------	------
Northeastern Iowa	5.40	4.20	4.70	6.30	5.55	North Dakota	5.80	5.20	4.55	------	------
Northwestern Iowa	5.90	4.15	4.50	------	------	Northeastern Ohio	6.65	4.85	4.95	6.55	5.70
Southeastern Iowa	6.05	4.50	4.60	5.95	5.60	Northwestern Ohio	5.85	4.70	5.00	6.55	5.70
Southwestern Iowa	5.50	4.10	4.55	5.90	5.70	Northeastern South Dakota	5.05	4.45	4.60	5.75	5.05
Kansas	5.25	5.60	------	------	------	Southeastern South Dakota	5.65	4.05	4.60	5.95	4.95
Northwestern Minnesota	5.10	4.35	4.55	------	------	Wisconsin	5.90	4.80	5.05	------	------
East central Minnesota	5.75	4.40	5.05	------	------						
Southern Minnesota	5.50	4.45	4.85	6.25	5.40						

Division of Statistical and Historical Research. Compiled from data of the Hay, Feed, and Seed Division. Weighted average price based on reports received annually from seed shippers.

TABLE 429.—*Alfalfa seed: Average wholesale selling price per 100 pounds at leading markets, 1920–1925*

Year	Baltimore						Minneapolis					
	Jan.	Feb.	Mar.	Apr.	May	Av.	Jan.	Feb.	Mar.	Apr.	May	Av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1920	40.00	40.00	39.00	35.75	31.60	37.27	45.60	46.00	44.90	41.65	38.30	43.29
1921	18.50	16.00	16.00	16.00	16.00	16.50	19.00	19.60	19.40	21.40	21.00	19.96
1922	17.10	17.50	18.25	18.80	19.50	18.23	19.00	19.50	19.50	19.80	20.25	19.61
1923	20.25	20.00	20.00	20.00	20.00	20.05	21.25	21.00	20.50	20.75	21.00	20.90
1924	21.00	21.00	20.70	22.00	22.50	21.44	22.50	22.50	23.90	24.90	24.80	23.72
1925	21.80	22.50	22.50	22.50	22.50	22.36	23.80	23.60	23.40	23.50	23.10	23.48
Av. 1921–1925	19.73	19.40	19.49	19.86	20.10	19.72	21.11	21.12	21.34	22.07	22.03	21.53
	Chicago						New York					
1920	41.00	42.00	41.65	40.15	38.00	40.56	36.20	38.50	36.50	34.65	30.40	35.25
1921	17.25	17.65	17.90	19.40	18.65	18.17	16.00	15.00	16.25	16.40	16.00	15.93
1922	17.15	18.45	19.20	19.35	19.15	18.66	17.50	17.90	18.50	18.60	19.00	18.30
1923	19.50	19.05	19.75	20.00	20.00	19.66	19.90	19.40	19.00	19.15	19.00	19.29
1924	22.25	22.20	22.45	23.75	24.30	22.99	20.90	20.40	20.10	21.75	22.00	21.03
1925	22.60	22.75	22.75	23.00	23.00	22.82	20.30	21.00	20.50	19.75	19.50	20.21
Av. 1921–1925	19.75	20.02	20.41	21.10	21.02	20.46	18.92	18.74	18.87	19.13	19.10	18.95
	Denver						Richmond					
1920	38.30	42.00	41.00	37.75	34.60	38.73	43.30	44.00	42.75	41.50	41.00	42.51
1921	19.50	17.00	17.00	17.75	16.75	17.60	24.95	23.85	21.00	21.00	21.00	22.36
1922	16.00	16.50	18.00	17.80	17.50	17.16	20.00	20.00	20.00	19.10	19.00	19.62
1923	19.65	19.50	19.70	19.75	19.00	19.52	19.00	20.00	20.00	19.50	19.50	19.60
1924	20.00	20.25	20.60	22.25	22.60	21.14	20.00	19.75	20.30	21.60	21.70	20.67
1925	26.00	26.00	23.50	23.50	23.50	24.50	22.40	22.10	22.00	21.00	21.00	21.70
Av. 1921–1925	20.23	19.85	19.76	20.21	19.87	19.98	21.27	21.14	20.66	20.44	20.44	20.79
	Kansas City						St. Louis					
1920	42.00	42.00	40.25	39.00	37.60	40.17	42.10	43.50	43.00	40.50	40.00	41.82
1921	18.50	18.00	18.40	18.50	18.15	18.31	22.75	19.45	17.15	17.30	18.00	18.93
1922	16.90	18.00	18.50	17.90	18.50	17.96	17.80	18.25	19.50	19.10	19.00	18.73
1923	19.50	19.50	19.50	20.65	21.00	20.03	20.50	19.25	19.10	19.90	20.00	19.75
1924	21.50	21.50	22.30	23.00	23.00	22.26	22.00	21.00	20.70	22.80	23.50	22.00
1925	22.00	22.10	22.60	23.50	23.25	22.69	22.55	23.25	23.50	23.75	23.50	23.34
Av. 1921–1925	19.68	19.82	20.26	20.71	20.78	20.25	21.12	20.24	19.99	20.57	20.80	20.54
	Louisville						Toledo					
1920	42.80	43.00	43.30	41.50	38.80	41.88	43.30	44.00	43.60	44.25	43.60	43.75
1921	20.65	20.25	20.50	21.40	21.25	20.81	20.00	20.00	20.00	20.00	20.00	20.00
1922	17.60	18.65	19.45	19.70	19.65	19.01	17.50	18.25	19.40	19.50	19.40	18.81
1923	19.80	19.70	19.65	19.25	19.25	19.53	19.00	21.00	21.15	21.25	21.25	20.73
1924	21.70	20.90	20.50	22.50	23.50	21.82	22.50	21.90	22.60	24.10	24.90	23.20
1925	22.55	22.55	22.50	22.45	22.10	22.43	22.70	22.50	22.50	22.50	22.50	22.54
Av. 1921–1925	20.46	20.41	20.52	21.06	21.15	20.72	20.34	20.73	21.13	21.47	21.61	21.06

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division. These prices are the average wholesale selling prices for high-quality seed, as reported to the Hay, Feed, and Seed Division weekly, by seedsmen in these markets.

TABLE 430.—*Red clover seed: Average wholesale selling price per 100 pounds at leading markets, 1920–1925*

Year	Baltimore						Minneapolis					
	Jan.	Feb.	Mar.	Apr.	May	Av.	Jan.	Feb.	Mar.	Apr.	May	Av.
	Dols.	*Dols.*	*Dols.*	*Dols*	*Dols*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1920	54.30	56.00	56.25	54.50	45.00	53.21	56.50	59.40	57.40	51.75	45.40	54.09
1921	21.40	19.50	20.75	19.60	18.25	19.90	21.55	18.95	21.65	21.50	21.50	21.03
1922	22.70	24.65	25.75	23.60	23.00	23.94	24.00	25.75	26.65	25.10	24.00	25.10
1923	22.50	22.50	21.35	19.95	19.50	21.16	23.40	23.25	22.50	21.75	21.15	22.41
1924	22.25	21.95	20.50	20.25	19.70	20.93	24.75	25.00	24.70	24.00	23.40	24.37
1925	33.60	34.50	34.00	33.00	32.50	33.52	34.80	36.00	36.00	35.75	32.75	35.06
Av. 1921–1925	24.49	24.62	24.47	23.28	22.59	23.89	25.70	25.79	26.30	25.62	24.56	25.59
	Chicago						New York					
1920	55.20	57.00	56.30	50.25	43.20	52.39	54.30	57.40	56.75	54.25	46.40	53.82
1921	21.25	18.05	20.80	19.95	18.55	19.72	21.00	18.75	21.40	19.60	18.50	19.85
1922	22.20	24.55	25.45	23.35	21.95	23.50	22.50	25.00	25.90	23.90	22.75	24.01
1923	22.55	22.45	20.60	19.70	19.35	20.93	23.40	22.40	21.55	20.25	19.50	21.42
1924	23.10	21.55	21.10	19.60	19.00	20.87	22.75	21.75	20.05	19.95	19.55	20.81
1925	34.20	36.00	34.30	33.40	32.00	33.98	32.50	32.60	30.50	29.00	28.25	30.57
Av. 1921–1925	24.66	24.52	24.45	23.20	22.17	23.80	24.43	24.10	23.88	22.54	21.71	23.33
	Denver						Richmond					
1920							56.20	59.45	58.20	56.90	50.55	56.26
1921	23.15	21.55	21.50	21.35	20.00	21.51	24.15	21.10	21.15	20.00	16.75	20.63
1922	23.50	23.50	23.75	24.00	24.00	23.75	23.00	24.40	26.25	25.50	24.15	24.66
1923	23.00	23.00	22.90	22.40	21.50	22.56	24.00	23.50	22.50	21.30	21.00	22.46
1924	21.00	21.25	22.00	22.00	23.65	21.98	23.00	22.70	22.00	21.25	20.20	21.83
1925	36.00	36.00	37.00	34.50	32.00	35.10	32.40	32.50	32.50	34.25	33.25	32.98
Av. 1921–1925	25.33	25.06	25.43	24.85	24.23	24.98	25.31	24.84	24.88	24.46	23.08	24.51
	Kansas City						St. Louis					
1920	56.30	59.25	56.50	54.50	52.00	55.71	56.20	59.00	56.25	51.75	50.00	54.64
1921	20.25	19.25	19.00	18.60	18.00	19.02	22.80	19.45	19.80	18.65	19.25	19.99
1922	22.90	23.25	24.50	22.80	24.00	23.49	22.30	24.05	25.25	23.00	23.00	23.52
1923	22.50	22.50	22.30	21.90	22.00	22.24	22.50	21.15	21.20	20.50	20.50	21.17
1924	25.55	25.40	24.00	23.75	22.40	24.22	25.00	23.80	23.75	22.95	22.50	23.60
1925	34.00	34.00	34.00	34.00	29.50	33.10	34.80	34.50	33.00	33.00	32.50	33.56
Av. 1921–1925	25.04	24.88	24.76	24.21	23.18	24.41	25.48	24.59	24.60	23.62	23.55	24.37
	Louisville						Toledo					
1920	57.40	60.25	56.50	55.50	49.20	55.77	57.25	58.50	57.45	49.70	43.50	53.28
1921	23.25	22.00	22.90	20.20	22.25	22.12	21.20	18.30	20.90	21.20	22.80	20.88
1922	23.35	25.15	26.20	24.15	23.05	24.38	23.30	25.40	26.60	23.60	22.90	24.36
1923	22.55	22.50	21.25	20.00	20.00	21.26	22.45	22.30	20.85	19.65	18.80	20.81
1924	23.40	22.80	21.60	20.90	21.00	21.94	22.45	20.50	19.75	18.70	18.40	19.96
1925	34.35	35.00	31.55	30.10	28.70	31.94	32.70	31.40	29.20	28.05	26.15	29.50
Av. 1921–1925	25.38	25.49	24.70	23.07	23.00	24.33	24.42	23.58	23.46	22.24	21.81	23.10

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division. These prices are the average wholesale selling prices for high quality seed, as reported to the Hay, Feed, and Seed Division, weekly, by seedsmen in these markets.

TABLE 431.—*Alsike clover seed: Average wholesale selling price per 100 pounds at leading markets, 1920–1925*

Year	Baltimore						Minneapolis					
	Jan.	Feb.	Mar.	Apr.	May	Av.	Jan.	Feb.	Mar.	Apr.	May	Av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1920	56.20	58.00	57.40	55.25	46.00	54.57	57.90	60.90	58.75	55.00	46.00	55.71
1921	26.25	24.00	23.15	19.60	18.50	22.30	25.75	23.25	24.00	23.20	22.50	23.74
1922	18.40	19.15	18.75	17.80	18.00	18.42	20.20	21.00	21.00	20.10	20.00	20.46
1923	17.00	16.65	16.40	16.00	16.00	16.41	18.00	18.00	17.50	17.25	17.00	17.55
1924	16.00	15.70	15.80	16.00	16.00	15.90	17.50	17.40	17.00	17.00	17.00	17.18
1925	21.70	21.50	22.25	24.10	24.25	22.76	22.60	23.50	23.75	25.50	25.50	24.17
Av. 1921–1925	19.87	19.40	19.27	18.70	18.55	19.16	20.81	20.63	20.65	20.61	20.40	20.62
	Chicago						New York					
1920	55.80	57.50	58.00	53.25	43.20	53.55	56.00	57.75	58.25	56.75	48.40	55.43
1921	25.65	22.40	22.45	21.60	19.50	22.32	26.75	24.65	23.75	21.50	19.50	23.23
1922	18.20	19.25	19.00	17.30	17.30	18.21	18.55	19.00	19.05	17.95	17.50	18.41
1923	16.50	16.50	16.50	16.45	16.35	16.46	17.40	16.80	16.65	16.25	16.00	16.62
1924	15.55	15.45	15.45	15.90	16.00	15.67	16.40	15.55	15.55	16.00	16.00	15.90
1925	21.75	22.40	23.05	24.75	25.00	23.39	21.50	21.90	22.30	24.80	25.00	23.10
Av. 1921–1925	19.53	19.20	19.29	19.20	18.83	19.21	20.12	19.58	19.46	19.30	18.80	19.45
	Denver						Richmond					
1920	53.20	58.65	58.75	58.00	56.60	57.04	57.30	59.50	58.20	57.65	51.10	56.75
1921	32.40	28.50	27.25	24.20	23.00	27.07	31.25	29.70	29.00	24.20	23.00	27.43
1922	19.50	19.50	19.75	20.00	20.00	19.75	21.70	21.65	21.40	21.00	21.00	21.35
1923	18.50	19.00	19.00	18.75	17.50	18.55	17.50	17.40	17.20	16.75	16.50	17.07
1924	17.00	17.00	17.00	17.00	17.15	17.03	17.50	17.40	17.00	17.00	17.70	17.32
1925	24.00	24.00	21.75	21.75	21.75	22.65	22.00	22.00	22.75	26.00	26.00	23.75
Av. 1921–1925	22.28	21.60	20.95	20.34	19.88	21.01	21.99	21.63	21.47	20.99	20.84	21.38
	Kansas City						St. Louis					
1920	56.50	60.00	58.50	58.00	53.50	57.30	56.30	61.50	58.75	54.25	51.20	56.40
1921	28.00	26.00	25.00	24.60	24.00	25.52	27.25	24.90	23.00	23.00	23.00	24.23
1922	18.80	19.50	19.50	18.00	18.00	18.76	17.80	19.15	19.00	18.50	18.50	18.59
1923	19.00	19.00	18.75	18.00	18.00	18.55	18.25	17.15	17.50	17.50	17.50	17.58
1924	17.50	17.50	17.60	17.50	16.00	17.22	17.40	16.75	16.00	16.00	16.00	16.43
1925	22.05	22.05	22.50	23.00	23.00	22.52	22.50	22.60	22.25	22.90	22.75	22.60
Av. 1921–1925	21.07	20.81	20.67	20.22	19.80	20.51	20.64	20.11	19.55	19.58	19.55	19.89
	Louisville						Toledo					
1920	57.80	60.25	58.25	57.00	49.90	56.64	57.70	58.60	59.30	52.60	42.50	54.14
1921	28.90	26.40	26.65	20.60	22.25	24.96	26.60	25.45	25.15	23.10	22.50	24.56
1922	18.50	20.00	20.20	18.75	18.30	19.15	19.35	20.70	19.90	18.80	18.95	19.54
1923	18.00	17.95	16.95	16.40	16.50	17.16	17.90	17.60	17.50	17.50	17.40	17.58
1924	16.95	16.55	15.80	15.60	15.95	16.17	15.55	15.40	14.80	15.25	16.15	15.43
1925	22.20	22.45	22.60	24.60	21.25	23.22	22.15	21.45	22.70	24.90	24.80	23.20
Av. 1921–1925	20.91	20.67	20.44	19.19	19.45	20.13	20.31	20.12	20.01	19.91	19.96	20.06

Division of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division. These prices are the average wholesale selling prices for high quality seed, as reported to the Hay, Feed, and Seed Division, weekly, by seedsmen in these markets.

TABLE 432.—*Timothy seed: Average wholesale selling price per 100 pounds at leading markets, 1920–1925*

Year	Baltimore						Minneapolis					
	Jan.	Feb.	Mar.	Apr.	May	Av.	Jan.	Feb.	Mar.	Apr.	May	Av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1920	14.10	14.90	13.70	13.20	12.35	13.65	13.85	14.20	13.45	12.55	12.00	13.21
1921	7.60	7.25	7.05	7.15	7.25	7.26	7.15	6.55	6.30	6.35	6.50	6.57
1922	7.15	7.25	7.20	6.80	6.80	7.04	6.80	6.95	6.80	6.20	6.25	6.60
1923	7.25	7.20	7.10	7.10	7.20	7.17	6.90	6.75	6.75	6.65	6.70	6.75
1924	8.50	8.50	8.50	8.50	8.30	8.46	8.30	8.55	8.30	7.75	7.55	8.09
1925	7.25	7.10	7.00	7.10	7.50	7.19	7.00	6.90	6.70	6.95	7.00	6.91
Av. 1921–1925	7.55	7.46	7.37	7.33	7.41	7.42	7.23	7.14	6.97	6.78	6.80	6.98
	Chicago						New York					
1920	13.50	13.90	13.30	12.65	12.30	13.13	14.25	14.75	14.40	13.65	13.30	14.07
1921	7.10	6.50	6.40	6.40	6.45	6.57	8.15	7.30	7.15	7.10	7.05	7.35
1922	7.05	7.30	7.30	6.60	6.70	6.99	7.70	7.75	7.50	7.25	7.05	7.45
1923	7.00	7.00	7.05	7.05	7.00	7.02	7.70	7.40	7.50	7.25	7.30	7.43
1924	8.15	8.25	8.10	7.75	7.55	7.96	9.10	8.95	8.60	8.50	8.25	8.68
1925	6.95	6.70	6.50	6.85	7.00	6.80	7.25	7.20	7.05	7.25	7.30	7.21
Av. 1921–1925	7.25	7.15	7.07	6.93	6.94	7.07	7.98	7.72	7.56	7.47	7.39	7.62
	Denver						Richmond					
1920	13.60	15.00	14.05	12.95	12.30	13.58	14.15	15.00	14.25	13.95	13.90	14.25
1921	9.15	8.00	7.25	7.00	6.90	7.66	9.50	8.80	8.00	7.75	7.75	8.36
1922	6.95	8.00	7.80	7.50	7.05	7.46	7.80	8.00	8.00	7.40	7.15	7.67
1923	7.95	7.75	7.70	7.50	7.50	7.68	7.50	7.50	7.35	7.30	7.30	7.39
1924	8.90	8.95	9.00	8.90	8.60	8.87	9.00	8.75	8.75	8.75	8.60	8.77
1925	9.00	9.00	8.00	8.00	8.00	8.40	7.95	7.85	7.75	8.00	8.05	7.92
Av. 1921–1925	8.39	8.34	7.95	7.78	7.61	8.01	8.35	8.18	7.97	7.84	7.77	8.02
	Kansas City						St Louis					
1920	14.40	14.80	13.45	12.75	12.50	13.58	14.05	14.75	13.65	12.80	12.50	13.55
1921	7.30	7.00	6.90	6.50	6.90	6.92	7.50	7.00	6.60	6.95	7.15	7.04
1922	7.05	7.20	7.15	6.40	6.50	6.86	7.00	7.30	7.00	6.45	6.35	6.82
1923	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.30	7.15	7.25	7.25	7.29
1924	8.50	8.50	8.50	8.40	7.70	8.32	8.45	8.45	8.25	8.20	8.00	8.27
1925	7.50	7.35	7.00	7.00	7.00	7.17	7.25	7.05	6.90	6.90	6.90	7.00
Av. 1921–1925	7.57	7.51	7.41	7.16	7.12	7.35	7.54	7.42	7.18	7.16	7.13	7.28
	Louisville						Toledo					
1920	14.10	14.55	13.70	13.25	12.60	13.64	14.45	14.80	13.80	12.50	12.35	13.58
1921	8.00	7.65	7.50	7.50	8.25	7.78	7.20	6.55	6.40	6.40	6.85	6.68
1922	7.40	7.50	7.40	6.80	6.90	7.20	7.15	7.20	6.90	6.55	6.80	6.92
1923	7.30	7.25	7.10	7.05	7.00	7.14	7.35	7.40	7.55	7.30	7.35	7.39
1924	8.55	8.70	8.40	8.20	7.85	8.34	8.90	8.50	8.40	8.30	7.60	8.34
1925	7.25	7.05	6.90	7.15	7.20	7.11	7.30	6.75	6.50	6.90	6.75	6.84
Av. 1921–1925	7.70	7.63	7.46	7.34	7.44	7.51	7.58	7.28	7.15	7.09	7.07	7.23

Divison of Statistical and Historical Research. Compiled from weekly reports of the Hay, Feed, and Seed Division. These prices are the average wholesale selling prices for high quality seed, as reported to the Hay, Feed, and Seed Division, weekly, by seedmen in these markets.

91044°—26——65

TABLE 433.—*Alfalfa seed: Price per bushel paid by farmers, United States, 1912–1925*

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1912						10. 25	10. 07	10. 07	10. 52	9. 84	9. 73	9. 49
1913	8. 25	9. 60	9. 78	9. 99	9. 75	9. 73	9. 41	10. 06	8. 96	8. 73	7. 65	7. 25
1914	8. 30	7. 98	8. 01	8. 17	8. 38	8. 31	8. 29	7. 79	8. 85	8. 97	8. 45	8. 81
1915	8. 79	9. 29	9. 58	9. 50	9. 62	9. 61	9. 61	9. 14	9. 60	10. 00	9. 71	9. 75
1916	10. 27	11. 04	12. 21	12. 54	12. 10	12. 10	11. 67	11. 51	11. 30	10. 67	10. 00	10. 31
1917	9. 72	9. 98	10. 34	10. 32	10. 52	10. 79	10. 87	10. 52	10. 72	11. 00	10. 94	11. 16
1918	11. 84	12. 00	12. 24	12. 34	12. 35	12. 04	11. 70	13. 06	12. 43	11. 82	11. 68	12. 00
1919	12. 48	12. 70	13. 12	13. 65	14. 32	14. 24	14. 51	14. 11	15. 47	16. 57	17. 51	20. 27
1920	21. 65	22. 66	24. 64	25. 22	25. 08	24. 22	23. 70	21. 05	21. 19	18. 32	16. 87	12. 99
1921	10. 91	12. 74	12. 47	11. 62	11. 43	11. 84	10. 70	11. 00	11. 14	10. 51	10. 14	10. 38
1922	10. 33	10. 76	11. 37	11. 72	11. 45	11. 24	11. 38	10. 38	10. 67	10. 94	11. 19	11. 69
1923	11. 99	12. 42	12. 50	12. 85	13. 19	12. 64	12. 17	12. 05	12. 15	12. 86	12. 31	12. 44
1924	12. 75	12. 74	13. 21	13. 49	13. 37	13. 34	12. 98	13. 01	13. 10	12. 77	11. 68	12. 63
1925	12. 82	13. 14	13. 54	14. 02	14. 03	14. 04	14. 27	14. 11	12. 93	13. 26	12. 33	12. 39

Division of Crop and Livestock Estimates.

TABLE 434—*Clover seed: Price per bushel paid by farmers, United States, 1912–1925*

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Dols.	*Dols.*	*Dols.*	*Dols*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1912						13. 49	12. 82	11. 78	11. 61	11. 28	11. 23	11. 10
1913	11. 39	11. 62	12. 30	12. 90	12. 90	12. 47	12. 12	11. 94	10. 22	9. 32	9. 13	9. 43
1914	9. 82	9. 77	9. 45	9. 84	9. 77	9. 86	9. 79	10. 39	10. 76	10. 32	10. 06	10. 04
1915	10. 34	10. 32	10. 33	10. 08	9. 99	9. 89	10. 05	9. 79	10. 18	11. 14	10. 25	11. 56
1916	11. 98	12. 22	12. 58	12. 59	12. 14	11. 71	11. 20	11. 27	10. 90	10. 61	10. 87	11. 10
1917	11. 29	11. 67	12. 07	12. 28	12. 30	12. 23	12. 36	12. 38	12. 64	13. 26	14. 26	14. 99
1918	16. 45	18. 90	20. 13	20. 35	19. 71	19. 15	18. 71	17. 84	19. 42	20. 84	21. 25	23. 10
1919	24. 25	25. 04	25. 72	28. 24	28. 07	27. 87	27. 22	27. 82	28. 73	28. 82	29. 63	31. 04
1920	32. 09	35. 00	35. 64	35. 73	34. 28	32. 05	31. 38	27. 64	23. 31	18. 94	16. 13	14. 66
1921	14. 02	13. 62	13. 52	13. 56	13. 48	13. 38	13. 17	13. 55	13. 00	12. 84	12. 89	12. 82
1922	13. 44	14. 10	15. 39	15. 40	15. 12	14. 48	14. 04	13. 20	12. 11	12. 64	12. 85	13. 32
1923	13. 76	14. 06	14. 12	14. 02	13. 94	13. 66	13. 55	13. 41	13. 84	14. 38	13. 40	14. 30
1924	13. 49	15. 08	15. 36	15. 37	15. 25	14. 92	14. 73	14. 67	14. 46	15. 05	16. 14	16. 83
1925	18. 15	18. 74	21. 09	20. 66	20. 49	20. 33	20. 25	19. 30	17. 32	16. 84	18. 20	18. 12

Division of Crop and Livestock Estimates.

TABLE 435—*Timothy seed: Price per bushel paid by farmers, United States, 1912–1925*

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1912						7. 37	6. 59	3. 89	3. 06	2. 84	2. 67	2. 47
1913	2. 51	2. 47	2. 33	2. 43	2. 40	2. 44	2. 57	2. 76	2. 84	2. 85	2. 87	2. 84
1914	2. 90	2. 94	2. 97	2. 95	2. 97	2. 98	2. 99	3. 17	3. 25	3. 19	3. 11	3. 05
1915	3. 42	3. 56	3. 60	3. 57	3. 46	3. 48	3. 49	3. 48	3. 59	3. 74	3. 69	3. 73
1916	3. 80	3. 96	3. 98	4. 03	4. 04	4. 01	3. 99	3. 50	3. 08	3. 01	3. 05	3. 11
1917	3. 17	3. 22	3. 24	3. 27	3. 60	3. 81	3. 93	3. 98	4. 12	4. 14	4. 12	4. 20
1918	4. 49	4. 55	4. 67	4. 58	4. 55	4. 56	4. 55	4. 71	4. 98	5. 10	5. 20	5. 23
1919	5. 43	5. 45	5. 50	5. 56	5. 73	5. 68	5. 79	5. 96	5. 92	6. 05	6. 06	6. 24
1920	6. 43	6. 87	6. 94	7. 03	6. 91	6. 88	6. 83	6. 01	5. 41	4. 84	4. 70	4. 54
1921	4. 40	4. 27	4. 05	4. 08	4. 02	4. 10	3. 91	3. 65	3. 41	3. 48	3. 52	3. 63
1922	3. 83	4. 04	4. 00	4. 03	4. 04	3. 88	3. 79	3. 56	3. 34	3. 48	3. 69	3. 74
1923	3. 93	3. 94	3. 97	3. 95	3. 99	4. 03	4. 03	3. 61	3. 93	4. 13	4. 24	4. 14
1924	4. 23	4. 30	4. 44	4. 40	4. 36	4. 32	4. 17	4. 18	4. 16	4. 02	3. 95	4. 15
1925	4. 07	4. 05	3. 95	3. 97	3. 99	4. 02	4. 16	4. 39	4. 27	4. 21	4. 19	4. 17

Division of Crop and Livestock Estimates.

TOBACCO

TABLE 436.—*Tobacco: Acreage, production, value, exports, etc., United States, 1909–1925*

Year	Acreage	Average yield per acre	Production	Price per pound received by producers Dec. 1	Farm value Dec. 1	Value per acre [1]	Domestic exports of unmanufactured, fiscal year beginning July 1 [2]	Imports of unmanufactured, fiscal year beginning July 1 [2]
	Acres	*Pounds*	*Pounds*	*Cents*	*Dollars*	*Dollars*	*Pounds*	*Pounds*
1909	*1,295,000*	814.8	1,055,133,000	10.1	106,374,000	82.14	357,196,074	46,853,389
1910	1,366,000	807.7	1,103,415,000	9.3	102,142,000	74.77	355,327,072	48,203,288
1911	1,013,000	893.7	905,109,000	9.4	85,210,000	84.12	379,845,320	54,740,380
1912	1,226,000	785.5	962,855,000	10.8	104,063,000	84.88	418,796,906	67,977,113
1913	1,216,000	784.3	953,734,000	12.8	122,481,000	100.72	449,749,982	61,174,751
Av. 1909–1913	1,223,000	814.3	996,049,000	10.4	104,054,000	85.07	392,183,071	55,789,785
1914	1,224,000	845.7	1,034,679,000	9.8	101,411,000	82.85	348,346,091	45,809,213
1915	1,370,000	775.4	1,062,237,000	9.1	96,281,000	70.28	443,293,156	48,077,956
1916	1,413,000	816.0	1,153,278,000	14.7	169,672,000	120.08	411,598,860	49,105,651
1917	1,518,000	823.1	1,249,276,000	24.0	300,449,000	197.92	289,170,686	86,990,541
1918	1,647,000	873.7	1,439,071,000	28.0	402,264,000	244.24	629,287,761	83,951,103
1919	1,951,000	751.1	1,465,481,000	39.0	570,868,000	292.60	648,037,655	94,005,182
1920	1,960,000	807.3	1,582,225,000	21.2	335,675,000	171.26	506,526,449	58,923,217
Av. 1914–1920	1,583,000	810.8	1,283,750,000	22.0	282,374,000	178.35	468,037,237	66,694,695
1921	1,427,000	749.6	1,069,693,000	19.9	212,728,000	149.07	463,388,521	65,225,437
1922	1,695,000	735.6	1,246,837,000	23.2	289,248,000	170.65	454,364,150	75,785,715
1923	1,877,000	807.2	1,515,110,000	19.9	301,096,000	160.41	597,630,387	54,497,204
1924	1,706,000	728.3	1,242,456,000	20.7	256,834,000	150.55	430,701,868	76,869,612
1925 [3]	1,747,000	772.6	1,349,660,000	18.3	247,413,000	141.62		

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Based upon farm price Dec. 1.

[2] Compiled from Commerce and Navigation of United States, 1909–1918, and June issues of Monthly Summary of Foreign Commerce, 1919–1925.

[3] Preliminary.

TABLE 437.—*Tobacco: Acreage, production, and total farm value, by States, 1924 and 1925*

	Acreage		Production		Total value, basis Dec. 1 price	
	1924	1925 [1]	1924	1925 [1]	1924	1925 [1]
	1,000 acres	*1,000 acres*	*1,000 pounds*	*1,000 pounds*	*1,000 dollars*	*1,000 dollars*
Massachusetts	9	9	12,060	12,420	3,232	1,987
Connecticut	29	28	39,730	39,900	12,833	7,581
New York	2	2	2,350	2,200	524	484
Pennsylvania	46	41	57,500	57,400	9,023	8,610
Ohio	58	52	40,890	50,960	7,933	7,644
Indiana	21	17	18,753	14,807	3,113	2,665
Wisconsin	38	32	35,720	44,000	4,644	7,260
Missouri	5	5	5,500	4,075	1,375	1,100
Maryland	32	30	22,528	24,690	6,060	4,691
Virginia	210	189	136,500	119,070	29,211	20,956
West Virginia	8	9	6,200	6,975	1,327	1,289
North Carolina	497	547	278,320	361,020	71,807	83,035
South Carolina	94	96	45,590	71,040	7,750	12,077
Georgia	40	67	31,080	48,039	8,267	7,206
Florida	6	7	4,500	5,460	1,692	1,693
Kentucky	485	485	405,460	392,850	69,334	62,856
Tennessee	125	130	99,375	94,250	18,484	16,022
Louisiana	1	1	400	504	220	277
United States	1,706	1,747	1,242,456	1,349,660	256,834	247,413

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 438.—*Tobacco: Acreage, yield, and production, by types and districts, 1924 and 1925*

Class and type of tobacco	U. S. type No.	Acreage		Yield per acre		Production		Average price per pound [1]		Farm value		Value per acre	
		1924	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924	1925
		Acres	*Acres*	*Pounds*	*Pounds*	*1,000 lbs.*	*1,000 lbs.*	*Cents*	*Cents*	*1,000 dols.*	*1,000 dols.*	*Dollars*	*Dollars*
Flue cured:													
Old Belt—													
Virginia	11	142,300	128,200	598	576	85,045	73,842	21.3	17.0	18,115	12,553	127.30	97.92
North Carolina	11	224,000	240,000	588	579	131,790	138,895	22.0	18.6	28,994	25,834	129.44	107.64
Total, Old Belt		366,300	368,200	592.0	577.8	216,835	212,737	21.7	18.0	47,109	38,387	128.61	104.26
New Belt—													
North Carolina	12, 13	268,500	301,000	534	725	143,380	218,225	25.5	26.9	36,562	58,703	136.17	195.03
South Carolina	13	94,000	96,000	485	740	45,590	71,040	17.0	17.0	7,750	12,077	82.50	125.80
Georgia	14	38,450	66,250	767	716	29,596	47,433	21.7	14.4	6,422	6,830	167.03	103.10
Florida	14	2,500	4,500	560	700	1,400	3,150	19.0	15.0	266	473	106.40	105.11
Total, New Belt		403,450	467,750	545.2	726.6	219,966	339,848	23.2	23.0	51,000	78,083	126.41	166.93
Total, flue cured		769,750	835,950	567.5	661.0	436,801	552,585	22.5	21.1	98,109	116,470	127.46	139.33
Fire cured:													
Virginia dark	21, 25	57,500	51,200	750	731	43,125	37,427	19.4	19.0	8,366	7,111	145.50	138.89
Clarksville and Hopkinsville—													
Kentucky	22	49,400	58,000	800	795	39,520	46,110	12.7	11.5	5,019	5,303	101.60	91.43
Tennessee	22	65,000	69,000	806	739	52,390	51,000	17.6	17.0	9,221	8,670	141.86	125.66
Total, Clarksville and Hopkinsville		114,400	127,000	803.4	765	91,910	97,110	15.5	14.4	14,240	13,973	124.48	110.02
Paducah—													
Kentucky	23	61,500	58,000	812	780	49,938	45,240	9.8	9.0	4,894	4,072	79.58	70.21
Tennessee	23	20,000	16,000	721	750	14,420	12,000	10.0	10.0	1,442	1,200	72.21	75.00
Total, Paducah		81,500	74,000	789.7	773.5	64,358	57,240	9.8	9.2	6,336	5,272	77.74	71.24
Henderson		17,167	18,000	825	775	14,163	13,950	12.0	10.0	1,700	1,395	99.03	77.50
Total, fire cured	24	270,567	270,200	789.3	761.4	213,556	205,727	14.3	13.5	30,642	27,751	113.70	102.71

Air cured:												
Burley—												
Virginia	31	2,600	2,600	1,050	852	2,730	2,215	21.4	20.0	584	443	224.62	170.39
West Virginia	31	8,000	9,000	775	775	6,200	6,975	22.0	18.2	1,364	1,269	170.50	141.00
North Carolina	31	4,500	6,000	700	650	3,150	3,900	22.0	20.0	693	780	154.00	130.00
Ohio	31	17,050	15,300	914	745	15,590	11,400	24.0	22.0	3,742	2,508	201.87	163.93
Indiana	31	15,300	12,500	898	867	13,732	10,839	19.0	21.5	2,609	2,330	170.52	186.40
Missouri	31	5,000	5,000	1,100	815	5,500	4,075	25.0	27.0	1,375	1,100	275.00	220.00
Kentucky	31	264,133	255,000	857	810	226,412	206,550	21.1	21.0	47,773	43,375	180.71	170.10
Tennessee	31	30,500	36,000	849	700	25,886	25,200	22.0	20.0	5,695	5,040	186.72	140.00
Total, Burley		347,083	341,400	863.8	794.3	299,200	271,154	21.3	21.0	63,835	56,845	183.65	166.51
Maryland	32	32,000	30,000	704	823	22,528	24,690	26.9	19.0	6,060	4,691	189.38	156.37
Eastern Ohio Export	32	350	700	856	1,286	300	900	14.0	11.0	42	99	120.00	141.43
One Sucker—													
Indiana	35	5,200	4,000	880	877	4,576	3,510	10.0	9.3	458	326	88.08	81.50
Kentucky	35	35,500	36,000	785	833	27,868	30,000	11.5	10.0	3,205	3,000	90.28	83.33
Tennessee	35	9,500	9,000	703	700	6,679	6,050	10.5	9.0	701	545	73.79	60.56
Total, One Sucker	35	50,200	49,000	779.4	807.4	39,123	39,560	11.2	9.8	4,364	3,871	86.93	79.00
Green River (Henderson and Owensboro)	36	57,300	60,000	830	850	47,559	51,000	11.6	10.0	5,517	5,100	96.28	85.00
Virginia sun cured	37	7,600	7,000	737	798	5,600	5,586	14.6	15.0	818	838	107.63	119.71
Total, air cured		494,533	488,100	837.8	804.9	414,310	392,890	19.5	18.2	80,636	71,444	163.06	146.37
Miscellaneous: Louisiana		1,000	1,000	400	504	400	504	55.0	55.0	220	277	220.00	277.00
Total all types other than cigar		1,535,850	1,595,250	694.0	721.0	1,065,067	1,151,706	19.7	18.7	209,607	215,942	136.48	135.37
Cigar types:													
New England		38,000	37,000	1,363	1,414	51,790	52,320	31.0	18.3	16,055	9,575	422.50	258.78
New York		2,000	2,000	1,175	1,100	2,350	2,200	22.3	22.0	524	484	262.00	242.00
Pennsylvania		46,000	41,000	1,250	1,400	57,500	57,400	15.7	15.0	9,027	8,610	196.24	210.00
Ohio		40,600	36,000	616	1,074	25,000	38,660	13.0	16.0	3,250	5,760	80.05	160.00
Indiana		500	500	890	985	445	458	13.0	16.0	45	80	90.00	160.00
Wisconsin		38,000	32,000	940	1,375	35,720	44,000	9.0	16.5	3,215	7,260	84.61	137.50
Georgia		1,550	750	957	808	1,484	606	40.9	37.6	587	228	387.71	304.00
Florida		3,500	2,500	886	924	3,100	2,310	49.6	58.0	1,538	1,340	439.40	536.00
Total		170,150	151,750	1,042.5	1,304.4	177,389	197,954	19.3	16.8	34,241	33,337	201.24	219.68
Total, all types		1,706,000	1,747,000	728.3	772.6	1,242,456	1,349,660	19.6	18.5	243,848	249,279	142.94	142.70

Division of Crop and Livestock Estimates.

[1] Average prices per pound represent season averages for 1924 and season averages to date for 1925. Complete season averages may change the 1925 prices and values.

TABLE 439.—*Tobacco: Yield per acre, by States, 1909–1925*

State	1909	1910	1911	1912	1913	Av. 1909–1913	1914	1915	1916	1917
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
Massachusetts	1,600	1,730	1,650	1,700	1,550	1,646	1,750	1,100	1,660	1,400
Connecticut	1,650	1,730	1,625	1,700	1,550	1,651	1,770	1,350	1,630	1,400
New York	1,175	1,250	1,330	1,300	1,020	1,215	1,300	1,200	1,230	1,250
Pennsylvania	985	1,500	1,420	1,450	1,200	1,311	1,450	1,350	1,360	1,400
Ohio	925	810	925	920	750	866	900	900	950	960
Indiana	950	880	910	800	750	858	900	840	930	950
Wisconsin	1,180	1,050	1,250	1,290	1,180	1,190	1,180	900	1,270	1,000
Missouri	885	1,050	800	1,000	650	877	1,200	900	950	940
Maryland	710	690	735	660	740	707	800	740	770	790
Virginia	775	780	800	600	770	745	650	750	680	700
West Virginia	875	640	750	760	680	741	820	870	900	800
North Carolina	600	600	710	620	670	640	650	620	550	630
South Carolina	800	630	810	700	760	740	730	580	520	710
Georgia	700	680	900	830	1,000	822	1,000	880	1,180	1,000
Florida	710	680	940	840	1,000	834	1,000	910	1,210	1,100
Kentucky	835	810	880	780	760	813	910	810	900	900
Tennessee	730	760	810	660	720	736	820	750	800	810
Louisiana	550	550	450	300	450	460	400	420	450	350
United States	814.8	807.7	893.7	785.5	784.3	817.2	845.7	775.4	816.0	823.1

State	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs*
Massachusetts	1,500	1,540	1,550	1,500	1,370	1,068	1,410	1,340	1,380	1,314
Connecticut	1,500	1,565	1,480	1,528	1,454	1,045	1,388	1,370	1,425	1,336
New York	1,250	1,290	1,280	1,257	1,250	1,110	1,125	1,175	1,100	1,152
Pennsylvania	1,420	1,320	1,510	1,401	1,460	1,320	1,310	1,250	1,400	1,348
Ohio	980	860	960	930	920	900	910	705	980	883
Indiana	930	800	900	893	875	900	899	893	871	888
Wisconsin	1,330	1,270	1,248	1,171	1,281	1,140	1,093	940	1,375	1,166
Missouri	900	1,000	1,000	984	925	900	1,100	1,100	815	968
Maryland	830	675	875	783	715	770	792	704	823	761
Virginia	770	530	730	687	550	750	740	650	630	664
West Virginia	720	700	800	801	750	825	860	775	775	797
North Carolina	705	616	694	638	561	500	700	560	660	596
South Carolina	720	722	650	662	630	640	730	485	740	645
Georgia	800	530	600	856	564	540	661	777	717	652
Florida	960	950	1,050	1,026	900	1,100	1,073	750	780	921
Kentucky	960	800	850	876	846	850	855	836	810	839
Tennessee	800	810	730	789	750	725	750	795	725	749
Louisiana	420	434	500	425	450	450	465	400	504	454
United States	873.7	751.1	807.3	813.2	749.6	735.6	807.2	728.3	772.6	758.7

Division of Crop and Livestock Estimates.

TABLE 440.—*Tobacco: Percentage reduction from full yield per acre, from stated causes, as reported by crop correspondents, 1909–1924*

Year	Adverse weather conditions									Plant diseases	Insect pests	Animal pests	Defective seed	Other and unknown causes	Total
	Deficient moisture	Excessive moisture	Floods	Frost or freeze	Hail	Hot winds	Storms	Other climatic	Total climatic						
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	5.5	6.8	1.1	0.7	0.8	0.1	0.2	0.1	15.3	0.7	2.6	------	(1)	1.0	19.6
1910	4.8	6.8	1.2	.4	.3	(1)	.1	.8	14.4	.7	2.8	------	0.1	2.6	20.6
1911	16.7	.9	------	.8	.1	.6	------	.4	19.5	.3	1.0	------	.2	1.6	22.6
1912	7.6	4.8	.8	.5	1.0	.2	.2	.2	15.3	.7	2.8	------	.1	2.3	21.2
1913	15.3	.7	.4	1.2	1.2	.3	.6	.3	20.0	.2	3.0	------	(1)	1.8	25.0
1914	18.1	.2	.1	.4	.6	.3	.1	.3	20.1	(1)	2.7	------	.1	1.9	24.8
1915	3.9	8.2	.9	1.2	.8	.1	.9	.3	16.3	.6	4.0	------	.1	2.5	23.5
1916	3.5	5.5	1.3	1.3	1.0	.1	.8	.5	14.0	.3	2.9	------	(1)	1.2	18.4
1917	3.3	2.2	.5	3.3	1.2	.1	.2	.3	11.1	.2	2.1	------	.1	1.7	15.2
1918	8.6	.4	.2	.7	1.1	.2	.2	------	11.4	.3	2.1	------	.1	.3	14.2
1919	8.9	7.9	.6	.2	1.1	.1	.2	.2	19.2	.6	2.8	------	(1)	.4	23.0
1920	2.3	7.0	.6	.7	1.0	(1)	.1	------	11.7	5.5	2.6	------	(1)	1.2	21.0
1921	18.9	2.2	.1	.4	.7	.4	.2	------	22.9	1.6	3.2	------	(1)	.5	28.2
1922	7.0	4.5	.3	.4	1.4	.1	.2	.4	14.3	1.7	2.5	------	(1)	.2	18.7
1923	4.1	3.9	.4	1.6	.5	.1	.3	------	10.9	2.5	2.7	------	.1	.7	16.9
1924	7.3	10.2	.5	1.8	.9	.1	.2	.1	21.1	1.8	2.7	------	(1)	.2	25.8

Division of Crop and Livestock Estimates.

[1] Less than 0.05 per cent.

TABLE 441.—*Tobacco: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE										
NORTH AMERICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Canada	[2] 15	26	24	21	28	[2] 1,004	998	887	891	1,045
United States	1,223	1,695	1,877	1,706	1,747	814	736	807	727	724
Porto Rico	[3] 19	35	35	40	34	[4] 492	706	700	700	688
EUROPE										
Belgium	10	4	5	7	8	2,077	1,833	1,900	2,147	2,110
France	41	38	41	43	32	1,307	1,618	1,353	1,833	1,350
Italy	20	55	76	89	[5] 95	1,148	918	908	1,139	1,036
Germany	32	28	20	24	20	2,004	1,657	1,571	1,837	------
Czechoslovakia	8	4	6	10	13	1,183	1,137	1,027	1,272	1,270
Hungary	93	44	38	38	------	1,203	782	783	1,001	------
Yugoslavia	35	31	54	87	------	912	668	708	904	------
Greece	[6] 76	114	148	148	------	[6] 776	342	803	662	------
Bulgaria	36	83	131	116	101	651	700	673	831	716
Rumania	[3] 53	53	44	78	91	[3] 909	524	485	606	484
Poland	8	------	------	[5] 2	[5] 4	1,091	------	------	935	825
Russia	167	------	[5] 96	[5] 94	[5] (118)	1,378	------	339	269	------

[1] Averages for European countries are estimates for territory within present boundaries.
[2] Two-year average.
[3] Four-year average.
[4] Year 1910 only. Census figure.
[5] Unofficial.
[6] One-year only.
[7] Includes Asiatic Russia.
[8] Estimate as reported by the Russian Bureau of Information. The figure for 1925 is a rough estimate based on a reported increase of 25 per cent over 1924.

TABLE 441.—*Tobacco: Acreage and yield per acre in specified countries, average 1909–1913, annual 1922–1925*—Continued

Country	Acreage					Yield per acre				
	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary	Average 1909–1913	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE—Con.										
NORTH AFRICA	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Algeria	25	27	54	73	67	924	773	854	906	823
ASIA										
India	1,057	1,332								
Ceylon	14	13	13	13			769	769	769	
Japanese Empire—										
Japan	72	97	88	93	91	1,302	1,581	1,547	1,333	1,545
Chosen (Korea)	51	30	31	29	37	500	775	844	835	742
Taiwan (Formosa)	1	3	3			1,120	1,252	1,203		
Siam	[9] 26	29	25				490	602		
Philippine Islands	154	148	160	178		422	446	452	537	
SOUTHERN HEMISPHERE										
SOUTH AMERICA										
Brazil		155	195	166			1,008	673	785	
Paraguay	[8] 17	33	27	29		[8] 1,050	748	848	877	
Argentina	27	17	22	21		468	1,043	1,152	973	
SOUTH AFRICA										
Union of South Africa	[6] 19	19				[6] 787	509			
Southern Rhodesia	[9] 4	9	8			[9] 614	312	485		
Nyasaland	7	18	[8] 17	[8] 21		431	361	231	404	
OCEANIA										
Java and Madura	466	334	351	533		[10] 795	[10] 778	[10] 743	[10] 1,080	

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Acreage figures given correspond to crop production of the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[1] Four-year average.
[8] Unofficial.
[6] One-year only.
[9] Three-year average.
[10] Yield on land cultivated by Europeans. See note 13 of tobacco production table.

TABLE 442.—*Tobacco: Production in specified countries, average 1909–1913, annual 1922–1925*

(Thousand pounds—i. e., 000 omitted)

Country	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
NORTHERN HEMISPHERE					
NORTH AMERICA					
Canada	[2] 15,066	25,948	21,297	18,711	29,255
United States	996,087	1,246,837	1,515,110	1,240,513	1,264,000
Mexico	[2] 29,096	23,085	24,326	[3] 14,000	[3] 7,187
Guatemala	[4] 256	386	154		
Costa Rica				680	
Salvador		1,213	1,213		
Cuba	73,666	51,808	39,903	[3] 77,000	[3] 47,000
Dominican Republic	[4] 25,417	15,000	[3] 20,000	[3] 29,000	[3] 45,000
Porto Rico	[5] 10,828	24,712	24,500	28,000	23,402
Jamaica	[4] 490				
EUROPE					
Sweden	1,744	1,166	1,516	1,299	
Denmark	[5] 258	0	0	[3] 49	
Belgium	20,767	7,333	9,502	15,031	16,876
France	53,598	61,495	55,464	78,829	43,185
Italy	22,964	50,485	69,004	[3] 101,351	[3] 98,300
Switzerland	1,266	794	794	790	840
Germany	64,116	46,387	31,421	44,092	
Austria	590				
Czechoslovakia	9,467	4,548	6,160	12,720	16,515
Hungary	111,883	34,392	29,762	38,045	
Yugoslavia	31,920	20,704	38,231	78,671	[3] 31,000
Greece	[5] 58,987	38,936	118,884	[3] 97,923	[3] 134,900
Bulgaria	23,435	58,077	88,184	96,340	72,310
Rumania	[6] 48,174	27,750	21,356	47,290	[3] 44,000
Poland	8,725		[3] 110	[3] 1,870	[3] 3,300
Russia [7]	230,142	[3] [8] 2,889	[3] [8] 32,501	[3] [8] 25,300	
NORTH AFRICA					
Algeria	23,097	20,868	46,097	66,140	55,170
Tunis	266	722	733	856	770
ASIA					
Turkey	[5] 88,180	[3] 44,092	[3] 50,646	[3] 170,000	[3] 105,571
Persia		[9] (23,000)	[4] (23,000)	[9] (23,000)	[9] (23,000)
Palestine		1,530	1,422	4,067	1,630
Syria	[5] [10] 360	[3] [11] 2,315	[3] [11] 2,374	[3] [11] 2,603	[10] 1,760
Cyprus		60	29	6	
British India	[3] [5] 450,000				
Ceylon		10,000	10,000	10,000	
Japanese Empire:					
Japan	93,717	153,364	136,114	124,010	140,550
Chosen (Korea)	25,510	23,244	26,170	[3] 24,221	[3] 27,465
Taiwan (Formosa)	1,120	3,755	3,610		
Indo-China	[12] 15,939				
Siam		14,202	15,057		
Philippine Islands	65,005	66,004	72,324	95,509	
SOUTHERN HEMISPHERE					
SOUTH AMERICA					
Chile	4,493	8,768	9,715		
Brazil	[5] 110,000	156,298	131,285	130,311	
Uruguay	2,045	78	194	503	
Paraguay	[6] 17,844	24,672	22,884	25,441	
Argentina	12,635	17,730	25,344	21,226	

[1] Aveages for European countries are estimates for territory within present boundaries.
[2] 2-year average.
[3] Unofficial estimate
[4] 3-year average.
[5] 1 year only.
[6] 4-year average.
[7] Includes Asiatic Russia.
[8] Incomplete data, yellow tobacco only. According to another source the total production of both yellow tobacco and makhorka in 1924 amounted to 43,335,000 pounds.
[9] Rough estimate of annual production.
[10] Lebanon only. According to the International Institute of Agriculture this district produced 1,102,000 pounds in 1922, 882,000 in 1923, and 1,587,000 pounds in 1924.
[11] Exclusive of Aleppo.
[12] Exclusive of Tonking.

TABLE 442.—*Tobacco: Production in specified countries, average 1909–1913, annual 1922–1925*—Continued

[Thousand paunds—i. e., 000 omitted]

Country	Average 1909–1913 [1]	1922	1923	1924	1925 preliminary
SOUTHERN HEMISPHERE—Continued					
SOUTH AFRICA					
French Equatorial Africa		558	600	772	
Belgian Congo		926	882		
Union of South Africa	[5] 14,961	9,671	8,220	13,000	
Southern Rhodesia	[6] 1,992	2,811	3,878		
Northern Rhodesia		19	1,140		
Nyasaland	3,017	6,490	3,919	8,488	
Madagascar	[4] 4,203		16,490	19,840	
OCEANIA					
Dutch East Indies:					
Java and Madura [13]	218,733	144,742	151,090	200,344	
Sumatra (east coast)	46,278	35,413	37,295	40,044	
British North Borneo		1,208	1,281		
Australia	2,135	3,666	[14] 1,246		
Fiji	42	58	59		
Total, all countries reporting for all periods listed (1909–1913 to 1925)	1,651,508	1,899,802	2,312,475	2,321,396	2,203,296
Estimated world total exclusive of India and China [15]	2,671,000	2,568,000	2,996,000	3,110,000	

Division of Statistical and Historical Research. Official sources and International Institute of Agriculture except as otherwise stated. Production figures are for the crop harvested in the calendar year in the Northern Hemisphere and the succeeding harvest in the Southern Hemisphere.

[4] 3-year average.
[5] 1 year only.
[6] 4-year average.
[13] The figures quoted here include a rough estimate of the crops produced by natives, on the basis of an average yield of 4 piculs per bouw (311 pounds per acre), as quoted by Trade Commissioner J. F. Van Wickel, Batavia, Java, to which is added the official estimate of production by Europeans.
[14] Exclusive of Victoria.
[15] No reliable data is available on production in India or China. The acreage devoted to tobacco in India would indicate a production next to the United States in the size of the crop. China is also of considerable importance.

TABLE 443.—*Tobacco: Estimated price per pound received by producers, December 1, average 1909–1913, annual 1914–1925*

State	Av. 1909–1913	1914	1915	1916	1917	1918	1919	1920	Av. 1914–1920	1921	1922	1923	1924	1925	Av. 1921–1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Massachusetts	18.8	17.7	14.5	25.0	38.4	40.0	46.3	40.6	31.8	36.0	37.8	43.8	26.8	16.0	32.4
Connecticut	19.7	18.5	17.0	27.0	38.4	44.0	46.3	35.0	32.3	41.0	40.3	46.5	32.3	19.0	35.8
New York	10.3	12.0	9.5	13.0	22.0	18.0	22.5	27.0	17.7	19.3	37.0	20.0	22.3	22.0	24.1
Pennsylvania	8.8	8.5	9.2	14.2	21.0	14.0	17.0	20.0	14.8	14.4	16.0	18.1	15.7	15.0	15.8
Ohio	9.4	8.8	9.0	13.0	25.0	19.5	33.7	13.0	17.4	15.0	19.0	14.4	19.4	15.0	16.6
Indiana	9.7	9.0	7.3	13.0	20.6	20.7	35.2	14.0	17.6	15.0	17.0	14.0	16.6	18.0	16.1
Wisconsin	9.9	11.0	6.0	12.5	17.5	22.0	22.2	25.9	16.7	12.5	20.0	11.0	13.0	16.5	14.6
Missouri	12.3	13.0	12.0	15.0	21.2	25.0	36.0	33.0	22.2	20.0	29.0	28.0	25.0	27.0	25.8
Maryland	8.2	8.0	8.5	16.0	20.0	30.0	30.0	29.0	29.2	19.0	17.5	28.1	26.9	19.0	22.1
Virginia	10.6	9.0	9.4	14.6	26.5	27.0	47.4	24.0	22.6	20.5	24.0	19.6	21.4	17.6	20.6
West Virginia	10.9	11.0	10.0	15.0	26.0	36.6	50.0	25.0	25.4	24.0	22.0	22.0	21.4	18.2	21.5
North Carolina	13.2	11.5	11.2	20.0	31.5	35.1	53.6	25.3	26.9	26.0	30.3	23.1	25.8	23.0	25.6
South Carolina	10.6	9.7	7.0	14.0	23.1	31.1	22.8	15.0	17.5	11.0	23.0	19.0	17.0	17.0	17.4
Georgia	28.6	25.0	23.0	27.0	57.0	46.0	21.5	37.0	33.8	25.0	26.0	31.0	26.6	15.0	24.7
Florida	29.2	30.0	23.0	30.0	57.0	46.0	54.5	48.0	41.2	40.0	47.0	50.9	37.6	31.0	41.3
Kentucky	9.1	8.4	7.8	12.7	20.0	26.3	38.2	15.0	18.7	15.5	19.5	16.6	17.1	16.0	16.9
Tennessee	8.0	7.5	6.3	10.1	17.0	21.4	25.1	20.0	15.3	20.0	22.0	14.3	18.6	17.0	18.4
Louisiana	29.6	35.0	30.0	28.0	35.0	65.0	65.0	40.0	42.6	55.0	55.0	50.0	55.0	55.0	54.0
United States	10.5	9.8	9.1	14.7	24.0	28.0	39.0	21.2	20.8	19.9	23.2	19.9	20.7	18.3	20.4

Division of Crop and Livestock Estimates.

TABLE 444.—*Tobacco (unmanufactured): International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average, 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria	4,776	11,681	8,506	33,549	8,596	17,516	10,546	30,112
Brazil	620	59,991	2,321	97,434	2,030	79,976	----------	65,225
British India	6,538	28,874	8,053	26,890	9,205	37,891	[1] 5,774	[1] 45,985
Bulgaria	(2)	4,310	----------	63,989	----------	37,808	----------	69,963
Ceylon	----------	4,093	4	4,335	4	2,951	2	4,159
Cuba	141	38,035	(2)	34,998	(2)	29,212	----------	----------
Dominican Republic	----------	22,395	----------	16,602	----------	35,976	----------	34,745
Dutch East Indies	8,074	163,823	617	113,076	1,174	115,736	[3] 2,641	[3] 111,652
Greece	12,024	18,113	128	81,036	57	47,104	45	92,225
Hungary	----------	----------	5,430	7,560	2,814	5,738	----------	----------
Paraguay	----------	11,361	69	11,402	99	18,058	----------	----------
Philippine Islands	45	26,018	181	35,433	132	55,736	269	49,505
Russia	1,084	23,283	----------	----------	----------	----------	----------	----------
United States	52,768	381,127	77,767	441,856	57,670	497,347	68,589	575,104
PRINCIPAL IMPORTING COUNTRIES								
Argentina	14,988	41	22,180	50	28,183	517	13,346	4,136
Australia	13,740	(2)	[4] 15,756	(2, 4)	[4] 26,234	----------	----------	----------
Austria	----------	----------	31,556	854	30,101	81	18,606	1,484
Austria-Hungary	49,984	23,192	----------	----------	----------	----------	----------	----------
Belgium	22,094	33	46,244	728	41,454	848	45,974	114
Canada	17,891	433	14,454	1,735	13,966	1,837	18,035	4,313
China	15,113	25,487	33,871	26,269	42,042	29,697	91,087	27,764
Czechoslovakia	----------	----------	57,702	----------	39,480	23	40,687	(2)
Denmark	8,774	100	9,570	43	11,883	1,189	9,578	39
Egypt	19,005	----------	16,457	6	15,845	(2)	16,356	----------
Finland	9,597	----------	4,569	----------	6,339	----------	6,837	----------
France	63,914	26	128,797	1,717	65,019	775	58,414	625
Germany	168,437	116	175,323	989	146,579	633	230,098	522
Irish Free State	----------	----------	----------	----------	----------	----------	10,318	----------
Italy	47,732	3,008	49,333	2	41,304	869	35,712	2,531
Japan	1,707	696	5,793	1,655	4,296	2,298	18,724	4,532
Netherlands	57,218	3,786	49,643	4,667	62,847	5,395	65,598	5,549
Norway	3,994	----------	5,236	----------	5,944	----------	5,455	----------
Poland	----------	----------	23,030	491	26,263	753	29,605	247
Portugal	6,565	279	----------	----------	9,533	----------	9,561	----------
Spain	51,026	----------	27,058	----------	71,200	----------	[5] 30,560	----------
Sweden	9,772	1	9,509	2,160	9,813	598	12,598	883
Switzerland	17,949	47	10,641	11	22,986	----------	4,281	----------
United Kingdom	117,956	4,603	173,722	7,104	158,404	8,682	162,947	7,520
Other countries	43,403	73,657	31,396	11,919	29,113	19,094	28,412	13,419
Total	846,929	928,609	1,044,916	1,028,560	990,609	1,054,338	1,050,955	1,152,353

Division of Statistical and Historical Research. Official sources. Tobacco comprises leaf, stems, and strippings, but not snuff.

[1] Sea-trade only.
[2] Less than 500 pounds.
[3] Java and Madura only.
[4] Year beginning July 1.
[5] Six months.

COFFEE

TABLE 445.—*Coffee: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Brazil		1,672,282		1,676,331		1,913,512		1,881,758
British India	[1] 605	27,780	5,595	19,459	5,486	22,424	3,126	23,435
Colombia		104,398	[2] 3	[2] 233,401		[2] 272,576		[2] 293,074
Costa Rica		27,515		41,155		24,455		27,807
Dutch East Indies	4,227	54,149	4,921	126,457	663	85,116	[3] 70	[3] 86,569
Guatemala		85,951		[2] 95,192		[2] 100,501		[2] 89,279
Haiti		61,943		[2] 58,425		[2] 79,031		[2] 64,820
Jamaica		8,263		[3] 7,081		[3] 8,633		[2] 5,815
Mexico	[1] 167	48,991	805	55,726	2,630	38,733	4,463	31,744
Nicaragua	[4] 138	19,033	[5] 56	19,563	[2] 90	[2] 30,000		[2] 35,000
Salvador	[5] 1,593	62,830	([6])	94,972	([6])	92,580		107,603
Venezuela		111,326		114,832		102,366		[7] 84,736
PRINCIPAL IMPORTING COUNTRIES								
Argentina	28,125		46,434		45,140		55,788	
Austria			9,801	185	11,880	13	15,828	[2] 26
Austria-Hungary	128,304	8						
Belgium	111,738	33,627	84,904	2,440	91,015	1,203	87,176	1,183
British Malaya	[3] 7,524	[3] 7,137	23,304	19,254	21,133	14,508	16,494	10,893
Canada	13,378	55	21,303	21	20,818	27	22,810	42
Cuba	24,906	4	19,209	([6])	37,259	1		
Czechoslovakia			23,973		31,082	13	32,371	[2] 1
Denmark	33,102	152	51,069	216	48,825	120	51,108	103
Egypt	15,654		21,838	37	22,461	26	24,257	138
Finland	28,624		30,448		31,448		37,038	
France	245,752	41	382,093	705	379,396	822	376,593	779
Germany	399,965	1,757	81,162	172	85,414	109	122,221	139
Hungary			7,136	[2] 197	2,632	[2] 144	[2] 4,335	[2] 60
Italy	58,278	458	104,195	5	105,963	10	103,574	22
Netherlands	283,633	189,288	129,148	55,944	115,563	46,951	141,899	58,199
Norway	29,309		39,651		38,205		35,549	
Russia	26,073						[2] 2,469	
Spain	29,317	9	41,235	17	53,773	7	[7] 27,546	[7] 1
Sweden	74,486	24	77,874	162	92,812	102	95,543	41
Switzerland	25,029	62	29,259	43	28,272	60	32,453	72
Union of South Africa	26,458	36	29,924	17	32,934	12	30,724	16
United Kingdom	28,581	241	88,828	59	—[8] 32,697	156	32,251	212
United States	907,899	[9] 44,251	1,246,061	26,750	1,409,755	26,367	1,420,870	28,731
Yugoslavia			[3] 17,695		[3] 20,235		[3] 18,382	
Other countries	81,989	46,736	148,888	98,330	166,014	93,880	114,356	67,811
Total	2,614,854	2,608,347	2,766,812	2,747,148	2,868,201	2,954,458	2,909,294	2,900,109

Division of Statistical and Historical Research. Compiled from official sources except where otherwise noted. The item coffee comprises unhulled and hulled, ground or otherwise prepared, but imitation or "surrogate" coffee and chicory are excluded.

[1] Four-year average.
[2] International Institute of Agriculture.
[3] Java and Madura only.
[4] Three-year average.
[5] One year only.
[6] Less than 500 pounds.
[7] Six months.
[8] Reexports in excess of imports.
[9] Chiefly from Porto Rico.

TABLE 446.—*Coffee, Rio, No. 7: Average wholesale price per pound, New York, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	7.1	7.7	8.2	8.2	8.3	8.1	7.4	7.5	7.3	7.3	8.3	8.6	7.8
1910	8.7	8.7	8.8	8.8	8.4	8.2	8.4	8.7	10.2	11.1	11.1	13.2	9.5
1911	13.4	13.1	12.6	12.3	12.4	12.3	13.3	13.2	13.4	14.2	15.8	14.9	13.4
1912	14.5	14.2	14.4	14.8	14.4	14.2	14.8	14.3	14.6	14.8	15.0	15.4	14.6
1913	13.9	13.5	12.5	11.9	11.4	11.1	9.8	9.6	9.2	10.2	10.8	9.6	11.1
Av. 1909–1913	11.5	11.4	11.3	11.2	11.0	10.8	10.7	10.7	10.9	11.5	12.2	12.3	11.3
1914	9.1	9.5	9.2	8.9	8.8	9.1	8.8	7.5	7.6	6.6	6.4	6.3	8.2
1915	7.2	8.2	7.8	8.1	7.8	7.0	7.4	7.4	6.8	6.8	7.5	7.6	7.5
1916	7.6	8.2	9.2	9.5	9.8	9.9	9.0	9.5	9.9	9.5	9.5	9.2	9.2
1917	9.8	10.0	9.8	9.5	10.1	10.4	9.5	9.1	9.1	8.5	7.9	7.6	9.3
1918	8.5	8.4	8.9	9.0	8.7	8.4	8.6	8.5	9.6	10.4	10.7	17.3	9.4
1919	15.5	15.4	16.0	17.0	19.3	21.1	23.0	21.5	16.6	16.5	17.0	15.2	17.9
1920	16.3	14.8	15.0	15.1	15.6	15.0	13.1	9.4	8.2	7.6	7.5	6.6	12.0
Av. 1914–1920	10.6	10.6	10.8	11.0	11.4	11.6	11.3	10.4	9.7	9.4	9.5	10.0	10.5
1921	6.7	6.7	6.4	6.0	6.2	6.7	6.5	7.0	7.9	8.1	8.8	9.3	7.2
1922	9.6	9.0	9.6	10.8	11.0	11.0	10.4	10.0	10.2	10.2	10.8	11.1	10.3
1923	11.9	13.0	13.0	11.5	11.6	11.7	10.9	10.7	10.7	11.1	11.0	10.9	11.5
1924	10.9	14.2	15.6	15.3	14.8	14.6	16.5	16.6	17.7	20.7	22.6	22.6	16.8
1925	23.4	22.4	21.2	20.2	18.6	21.6	19.7	20.7	21.2	19.5	18.5	17.1	20.3
Av. 1921–1925	12.5	13.1	13.2	12.8	12.4	13.1	12.8	13.0	13.5	13.9	14.3	14.2	13.2

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.

TEA

TABLE 447.—*Tea: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
British India	8,002	267,887	14,604	311,693	17,713	331,611	[1] 12,164	[1] 346,111
Ceylon	[2] 1	189,016	1	171,808	1	181,940	(3)	204,930
China	18,890	197,997	13,656	76,463	129	99,492	5,072	94,211
Dutch East Indies	6,742	46,675	6,516	89,985	6,602	104,871	[4] 6,538	[4] 105,541
Formosa	68	23,640	73	19,767	82	21,205	[5] 58	[5] 21,267
Japan	590	35,823	1,469	29,148	1,684	27,359	1,267	24,036
PRINCIPAL IMPORTING COUNTRIES								
Argentina	3,890	.....	3,054	.....	3,772	.....	4,379	.....
Australia	35,442	(3)	[6] 47,666	.....	[6] 48,502	.....	[5] [6] 48,935	.....
Austria	.....	.....	1,001	11	955	2	1,463	[5] 2
Austria-Hungary	3,424	3	.....	.....	.....	.....	.....	.....
British Malaya	[5] 11,983	[5] 5,318	6,866	1,081	8,227	1,394	8,425	1,241
Canada	37,927	.....	40,050	.....	41,289	.....	35,861	.....
Chile	3,505	.....	1,613	.....	5,228	.....	4,476	.....
Czechoslovakia	.....	.....	1,016	2	1,165	2	1,423	(3)
Egypt	1,950	.....	4,503	157	6,602	239	8,156	274
France	2,806	61	2,742	113	2,985	237	3,662	171
French Indo-China	3,295	1,145	[5] 3,391	[5] 1,136	[5] 3,836	[5] 1,933	[5] 4,036	[5] 1,668
Germany	8,964	23	6,178	23	5,463	10	8,954	6
Hungary [5]	.....	.....	1,075	35	416	16	8,515	4
Irish Free State	.....	.....	.....	.....	.....	.....	24,400	.....
Morocco	6,696	.....	9,581	.....	8,224	1	10,556	.....
Netherlands	11,383	45	26,226	31	35,468	15	23,933	29
New Zealand	7,542	.....	8,708	.....	9,968	.....	10,787	.....
Persia	9,446	125	11,357	[5] 1,965	12,964	[5] 2,422	.....	.....
Poland	.....	.....	4,409	253	5,313	127	3,201	43
Russia	157,704	866	[5] 3,322	.....	[5] 3,106	.....	[5] 13,609	.....
Union of South Africa	5,192	61	9,326	256	8,963	133	9,407	10
United Kingdom	293,045	.....	377,039	.....	392,531	.....	434,621	.....
United States	98,897	.....	97,097	.....	105,138	.....	92,773	.....
Other countries	31,268	7,237	33,105	4,371	37,945	6,556	37,721	21,890
Total	768,652	775,922	735,644	708,298	774,271	779,565	824,392	821,434

Division of Statistical and Historical Research. Official sources except where otherwise noted. "Tea" includes tea leaves only, and excludes dust, sweepings, and yerba mate.

[1] Twelve months' sea-trade, three months' land-trade.
[2] Two-year average.
[3] Less than 500 pounds.
[4] Java and Madura only.
[5] International Institute of Agriculture.
[6] Year beginning July 1.

TABLE 448.—*Tea, Formosa, fine: Average wholesale price per pound, New York, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average [1]
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	24.0	18.5	18.5	23.5	25.0	25.0	25.0	24.0	24.0	24.0	24.0	24.0	23.3
1910	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
1911	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.5	24.5	24.5	24.5	24.5	24.2
1912	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5
1913	24.5	24.5	24.5	24.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.8
Av. 1909–1913	24.2	23.1	23.1	24.1	24.5	24.5	24.5	24.4	24.4	24.4	24.4	24.4	24.2
1914	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.0	24.0	24.8
1915	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
1916	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
1917	24.0	24.0	24.0	24.0	26.3	28.3	36.5	36.5	36.5	36.5	35.5	35.5	30.6
1918	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	36.3	36.5	36.5	36.5	35.8
1919	36.5	36.5	35.3	34.0	34.3	35.0	35.0	35.0	35.0	35.0	36.1	36.5	35.3
1920	36.5	36.5	36.5	36.5	36.5	36.5	36.5	34.3	31.0	31.0	28.6	23.8	33.7
Av. 1914–1920	29.4	29.4	29.2	29.0	29.4	29.8	30.9	30.6	30.3	30.3	29.8	29.2	29.8
1921	24.5	24.5	24.5	24.1	22.4	22.0	22.0	22.0	22.3	23.0	28.0	29.0	24.0
1922	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.5	30.5	31.0	31.0	30.2
1923	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0
1924	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.3	32.5	32.9	35.0	31.7
1925	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.3	35.0
Av. 1921–1925	30.3	30.3	30.3	30.2	29.9	29.8	29.8	29.8	30.0	30.4	31.6	32.3	30.4

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.

TABLE 449.—*Oil cake and oil-cake meal: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina		42,587		65,382		80,486		102,113
Australia	148	1,347	[1] 698	[1] 7,462	[1] 518	[1] 5,860		
Austria-Hungary	53,673	124,873						
Brazil		[2] 6,574		38,450		24,196		
British India	1,262	268,648	2,189	311,854	2,226	359,679	[3] 1,029	[3] 446,723
Canada	7,752	51,370	3,873	45,727	3,548	40,114	6,124	34,303
China	[4] 174	147,468		144,285		196,685		188,903
Dutch East Indies	2,509	13,242		38,587		42,361		[5] 52,100
Egypt		161,624		267,039		267,508		260,478
France	288,968	476,863	82,465	213,239	128,237	328,003	113,447	298,448
Germany	1,686,416	525,108	209,655	371,291	90,202	521,098	285,465	457,647
Hungary			224	27,735	935	106,624		
Italy	10,550	55,115	3,919	158,688	752	147,941	268	282,802
Peru		10,930		37,323		35,695		48,684
Russia		1,453,413						
Spain		2,104	87	20,445	147	15,157	[6] 319	[6] 8,882
United States		1,704,124	88,605	926,144	124,124	917,394	154,572	1,289,948
PRINCIPAL IMPORTING COUNTRIES								
Austria					7,016	2,420	12,532	921
Belgium	543,648	155,373	262,125	52,931	215,640	73,509	249,286	62,696
Ceylon	[7] 40,494	[7] 28,509	41,292	12,935	41,830	13,056	43,072	17,533
Denmark	1,002,329	15,777	846,355	2,837	1,241,054	5,799	1,547,660	18,833
Finland	25,333	2,125	17,963	572	107,415	144	22,843	
Irish Free State							108,901	
Japan	189,868		259,709	13,707	332,319	10,619	322,879	21,720
Netherlands	707,116	219,819	414,635	116,659	493,590	95,195	574,900	79,046
Norway	55,112	2,889	43,810	271	84,798	169	118,527	
Sweden	346,755	1,535	169,564	19,992	246,640	4,748	276,096	5,546
Switzerland	69,352	1,413	91,677	1,586	85,908	1,243	87,487	6,651
United Kingdom	790,865	161,798	707,838	85,053	697,894	111,964	802,285	201,620
Other countries	30,172	41,595	41,380	40,244	14,398	8,966	19,454	15,937
Total	5,852,496	5,676,283	3,288,063	3,020,458	3,919,191	3,416,603	4,747,146	3,901,53

Division of Statistical and Historical Research. Official sources.

The class called here "oil cake and oil-cake meal" includes the edible cake and meal remaining after making oil from such products as cottonseed, flaxseed, peanuts, corn, etc. Soy-bean cake is not included in this table.

[1] Year beginning July 1
[2] Four-year average.
[3] Twelve months' sea-trade, three months' land-trade.
[4] Three-year average.
[5] Java and Madura only.
[6] Six months.
[7] One year only.

STATISTICS OF FARM ANIMALS AND THEIR PRODUCTS

TABLE 450.—*All cattle and calves: Number and value on farms, by States, 1920–1926*

State	Number Jan. 1—				Average value per head Jan. 1—				Farm value Jan. 1—			
	1920	1921	1922	1923	1920	1921	1922	1923	1920	1921	1922	1923
	Thousands	*Thousands*	*Thousands*	*Thousands*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Thousand Dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*
Maine	301	276	259	247	60.30	47.20	38.30	44.00	18,141	13,040	9,930	10,871
N. Hampshire	164	165	169	157	66.60	56.00	44.60	45.40	10,923	9,236	7,542	7,122
Vermont	435	444	449	445	70.80	50.90	42.80	44.30	30,802	22,594	19,211	19,719
Massachusetts	216	219	225	220	85.60	76.30	63.90	61.20	18,483	16,711	14,378	13,475
Rhode Island	31	31	31	31	92.90	82.40	67.00	70.40	2,879	2,554	2,078	2,183
Connecticut	174	172	176	177	84.00	73.00	59.00	61.90	14,614	12,555	10,390	10,962
New York	2,144	2,104	2,090	2,030	88.20	60.30	54.40	52.20	189,085	126,848	113,725	105,917
New Jersey	179	178	173	168	108.20	93.20	73.40	75.20	19,374	16,585	12,690	12,642
Pennsylvania	1,546	1,490	1,482	1,448	76.90	61.10	48.00	48.90	118,841	91,024	71,162	70,827
Ohio	1,927	1,880	1,840	1,770	69.40	54.40	42.80	44.40	133,822	102,360	78,795	78,557
Indiana	1,546	1,531	1,446	1,410	66.60	49.30	39.10	41.30	103,002	75,429	56,572	58,190
Illinois	2,788	2,515	2,413	2,465	69.50	46.80	38.30	42.80	193,762	117,695	92,346	105,533
Michigan	1,586	1,536	1,506	1,460	69.90	51.00	39.00	42.20	110,864	78,303	58,789	61,573
Wisconsin	3,051	3,091	3,040	2,979	74.00	49.60	39.70	44.70	225,801	153,320	120,691	133,149
Minnesota	3,021	2,940	2,980	2,940	55.70	39.30	32.70	33.60	168,417	115,415	97,434	98,697
Iowa	4,558	4,347	4,311	4,545	58.00	40.30	34.80	39.80	264,157	175,000	150,012	181,022
Missouri	2,782	2,760	2,760	2,700	55.90	40.00	30.70	33.40	155,621	110,472	84,752	90,164
North Dakota	1,335	1,350	1,400	1,370	49.10	33.70	25.50	27.50	65,489	45,490	35,720	37,660
South Dakota	2,388	2,061	2,123	2,070	48.90	34.90	28.40	33.70	116,777	71,900	60,279	69,820
Nebraska	3,154	2,953	3,026	3,224	50.60	37.70	31.60	35.60	159,724	111,228	95,726	114,666
Kansas	2,975	3,012	2,991	3,058	52.70	37.90	28.70	30.80	156,911	114,247	85,930	94,116
Delaware	47	47	47	47	74.10	69.00	48.30	47.60	3,481	3,242	2,269	2,236
Maryland	283	283	282	280	73.50	65.40	51.40	50.30	20,788	18,512	14,502	14,079
Virginia	910	915	865	882	58.60	45.30	32.50	34.00	53,333	41,407	28,110	29,980
West Virginia	587	597	607	617	58.20	49.30	36.10	39.70	34,143	29,415	21,906	24,525
North Carolina	680	670	600	580	51.90	40.20	29.60	28.50	35,275	26,933	17,758	16,507
South Carolina	434	418	416	382	56.20	37.00	25.50	23.10	24,401	15,475	10,622	8,817
Georgia	1,157	1,137	1,117	1,057	39.50	28.00	17.10	16.90	45,754	31,875	19,136	17,910
Florida	880	840	810	770	30.70	26.40	20.20	20.50	27,029	22,193	16,350	15,748
Kentucky	1,093	1,088	1,074	1,000	52.80	39.80	28.30	30.20	57,669	43,298	30,352	30,176
Tennessee	1,162	1,124	1,114	1,070	46.20	31.30	23.20	23.50	53,714	35,170	25,795	25,131
Alabama	1,044	1,022	1,000	950	35.70	23.80	17.60	16.70	37,264	24,302	17,550	15,868
Mississippi	1,250	1,190	1,180	1,090	37.50	26.20	18.00	16.40	46,911	31,235	21,194	17,897
Arkansas	1,073	1,030	1,030	940	37.30	25.90	18.50	15.10	40,057	26,670	19,073	14,169
Louisiana	840	800	780	740	39.80	30.60	22.20	20.60	33,403	24,465	17,291	15,279
Oklahoma	2,074	2,000	2,050	1,900	44.10	31.00	23.10	21.40	91,398	62,088	47,294	40,592
Texas	6,890	7,165	7,318	7,248	46.80	34.80	22.60	20.70	322,160	248,985	165,540	149,731
Montana	1,370	1,269	1,380	1,360	50.50	39.50	30.70	33.50	69,248	50,118	42,428	45,524
Idaho	715	675	685	685	49.50	39.10	34.30	33.90	35,368	26,387	23,473	23,253
Wyoming	950	859	898	881	49.50	40.30	32.40	33.10	47,066	34,575	29,080	29,131
Colorado	1,757	1,683	1,680	1,614	50.80	37.70	30.10	28.90	89,318	63,474	50,578	46,604
New Mexico	1,700	1,800	1,900	1,900	46.70	37.20	25.90	23.10	79,381	67,016	49,178	34,690
Arizona	1,150	1,135	1,090	1,138	45.30	39.90	29.80	34.10	52,045	45,340	32,440	38,782
Utah	556	535	525	550	44.60	35.60	31.50	33.10	24,789	19,027	16,527	18,204
Nevada	456	436	445	460	45.70	38.70	33.10	35.20	20,832	16,860	14,721	16,196
Washington	613	583	587	587	60.20	51.10	46.50	42.20	36,895	29,781	27,293	24,761
Oregon	891	828	846	834	53.70	45.80	36.90	35.40	47,889	37,946	31,182	29,496
California	2,008	2,000	2,048	2,080	63.50	57.90	45.50	46.00	127,417	115,770	93,228	95,600
United States	68,871	67,184	67,264	66,156	55.68	41.28	32.16	33.52	3,834,517	2,773,555	2,163,022	2,217,751

TABLE 450.—*All cattle and calves: Number and value on farms, by States, 1920–1926*—Continued

State	Number Jan. 1—			Average value per head Jan. 1—			Farm value Jan. 1—		
	1924	1925	1926 [1]	1924	1925	1926	1924	1925	1926 [1]
	Thous.	*Thous.*	*Thous.*	*Dollars*	*Dollars*	*Dollars*	*Thous. dollars*	*Thous. dollars*	*Thous. dollars*
Maine	245	238	233	45.60	42.10	51.30	11,173	10,020	11,952
New Hampshire	142	121	121	49.80	48.20	58.00	7,066	5,832	7,018
Vermont	429	393	389	45.40	46.00	55.80	19,474	18,078	21,696
Massachusetts	208	192	190	63.60	63.60	74.10	13,234	12,211	14,078
Rhode Island	28	27	28	75.00	70.40	74.60	2,101	1,901	2,088
Connecticut	170	155	155	66.60	66.80	78.00	11,324	10,354	12,091
New York	1,940	1,851	1,814	54.70	53.50	68.60	106,096	99,028	124,465
New Jersey	160	156	147	74.50	68.20	87.30	11,916	10,639	12,830
Pennsylvania	1,387	1,340	1,340	50.70	51.10	59.70	70,359	68,474	80,041
Ohio	1,710	1,675	1,642	44.50	45.80	51.00	76,157	76,715	83,708
Indiana	1,358	1,296	1,322	42.90	44.80	49.00	58,298	58,061	64,718
Illinois	2,425	2,345	2,368	44.20	44.40	50.20	107,162	104,118	118,950
Michigan	1,420	1,417	1,381	46.10	46.50	51.00	65,412	65,890	70,416
Wisconsin	3,039	3,035	3,005	46.30	44.40	53.70	140,776	134,754	161,411
Minnesota	2,890	2,863	2,834	36.70	37.20	43.20	106,030	106,504	122,305
Iowa	4,533	4,372	4,372	40.30	39.20	43.50	182,844	171,382	190,241
Missouri	2,650	2,442	2,369	34.60	33.20	36.40	91,820	81,074	86,285
North Dakota	1,370	1,345	1,265	28.50	28.50	32.80	39,076	38,332	41,486
South Dakota	2,147	2,074	1,919	31.20	30.60	34.00	67,026	63,464	65,326
Nebraska	3,386	3,314	3,248	34.30	32.90	36.20	116,006	109,031	117,601
Kansas	3,200	3,143	3,080	31.10	31.30	35.20	99,555	98,376	108,357
Delaware	46	46	48	48.20	53.10	56.80	2,215	2,443	2,724
Maryland	279	278	281	51.00	50.40	54.90	14,237	14,011	15,420
Virginia	847	827	786	33.20	33.00	34.10	28,161	27,291	26,783
West Virginia	600	587	575	35.60	33.20	35.70	21,340	19,488	20,509
North Carolina	562	545	529	31.20	29.80	32.00	17,524	16,241	16,944
South Carolina	362	340	313	25.90	24.90	25.10	9,381	8,466	7,871
Georgia	996	938	854	17.60	18.20	19.10	17,527	17,072	16,311
Florida	740	710	575	19.80	18.50	21.10	14,620	13,135	12,150
Kentucky	970	938	910	28.60	28.60	32.90	27,725	26,827	29,905
Tennessee	1,040	1,023	962	22.40	22.10	24.60	23,260	22,608	23,624
Alabama	900	840	739	16.80	16.30	18.70	15,155	13,692	13,827
Mississippi	1,010	938	845	16.50	15.00	17.60	16,695	14,070	14,876
Arkansas	880	837	804	13.20	15.90	18.50	11,637	13,308	14,835
Louisiana	720	720	648	20.80	19.50	19.80	14,996	14,040	12,819
Oklahoma	1,750	1,695	1,610	19.50	21.80	27.00	34,112	36,951	43,531
Texas	6,550	6,275	5,900	20.90	21.80	22.40	136,630	136,795	132,412
Montana	1,360	1,340	1,280	30.60	30.00	32.00	41,660	40,200	40,945
Idaho	705	650	624	33.10	29.00	37.40	23,304	18,850	23,364
Wyoming	825	795	795	31.30	28.90	34.40	25,849	22,976	27,383
Colorado	1,540	1,465	1,277	28.30	26.20	33.00	43,531	38,383	42,116
New Mexico	1,350	1,290	1,161	23.50	22.20	26.70	31,692	28,638	31,012
Arizona	1,116	1,064	919	31.10	26.10	34.70	34,740	27,770	31,850
Utah	540	507	472	33.20	27.70	36.80	17,942	14,044	17,373
Nevada	440	418	395	34.70	25.40	35.30	15,276	10,617	13,930
Washington	586	586	568	48.30	45.30	45.50	28,302	26,546	25,848
Oregon	814	796	772	36.00	35.00	37.80	29,334	27,860	29,146
California	2,142	1,908	1,965	45.20	43.40	47.30	96,715	82,807	92,939
United States	64,507	62,150	59,829	34.05	33.46	38.40	2,196,465	2,079,367	2,297,510

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 451.—*Cows and heifers 2 years old and over kept for milk: Number and value on farms, by States, January 1, 1920–1926*

State	Number Jan. 1—				Average value per head Jan. 1—				Farm value Jan. 1—			
	1920	1921	1922	1923	1920	1921	1922	1923	1920	1921	1922	1923
	Thousands	*Thousands*	*Thousands*	*Thousands*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Thousand Dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*
Maine	176	171	165	162	79.00	60.00	48.00	55.00	13,904	10,260	7,920	8,910
N. Hampshire	98	96	94	90	86.00	74.00	60.00	59.00	8,428	7,104	5,640	5,310
Vermont	292	298	302	303	89.00	65.00	55.00	56.00	25,988	19,370	16,610	16,968
Massachusetts	150	154	160	164	105.00	94.00	79.00	74.00	15,750	14,476	12,640	12,136
Rhode Island	22	22	23	23	110.00	100.00	79.00	84.00	2,420	2,200	1,817	1,932
Connecticut	114	115	115	116	105.00	90.00	74.00	78.00	11,970	10,350	8,510	9,048
New York	1,499	1,477	1,462	1,449	107.00	73.00	67.00	63.00	160,393	107,821	97,954	91,287
New Jersey	131	130	127	126	128.00	110.00	86.00	87.00	16,768	14,300	10,922	10,962
Pennsylvania	893	893	900	925	98.00	77.00	60.00	60.00	87,514	68,761	54,000	55,500
Ohio	918	927	936	936	92.00	72.00	56.00	56.00	84,456	66,744	52,416	52,416
Indiana	659	653	659	652	88.00	65.00	53.00	53.00	57,992	42,445	34,927	34,556
Illinois	1,047	1,027	997	1,029	96.00	68.00	52.00	56.00	100,512	64,701	51,844	57,624
Michigan	824	815	823	831	96.00	70.00	53.00	55.00	79,104	57,050	43,619	45,705
Wisconsin	1,832	1,858	1,882	1,921	97.00	65.00	52.00	57.00	177,704	120,770	97,864	109,497
Minnesota	1,359	1,405	1,503	1,525	82.00	58.00	48.00	47.00	111,438	81,490	72,144	71,675
Iowa	1,120	1,120	1,160	1,220	88.00	62.00	53.00	58.00	98,560	69,440	61,480	70,760
Missouri	800	792	799	799	79.00	58.00	44.00	45.00	63,200	45,936	35,156	35,955
North Dakota	430	426	440	457	77.00	55.00	43.00	44.00	33,110	23,430	18,920	20,108
South Dakota	467	462	480	500	75.00	56.00	47.00	51.00	35,025	25,872	22,560	25,500
Nebraska	535	540	594	606	83.00	63.00	53.00	57.00	44,405	34,020	31,482	34,542
Kansas	695	709	723	730	81.00	62.00	46.00	46.00	56,295	43,958	33,258	33,580
Delaware	33	32	32	33	85.00	81.00	57.00	55.00	2,805	2,592	1,824	1,815
Maryland	166	169	172	174	89.00	79.00	63.00	60.00	14,774	13,351	10,836	10,440
Virginia	377	384	392	402	76.00	59.00	43.00	42.00	28,652	22,656	16,856	16,884
West Virginia	193	197	201	207	76.00	66.00	50.00	48.00	14,668	13,002	10,050	9,936
North Carolina	300	306	312	309	78.00	58.00	42.00	39.00	23,400	17,748	13,104	12,051
South Carolina	195	193	187	185	85.00	58.00	40.00	35.00	16,575	11,194	7,480	6,475
Georgia	408	396	396	376	65.00	45.00	29.00	28.00	26,520	17,820	11,484	10,528
Florida	73	75	78	82	72.00	74.00	58.00	56.00	5,256	5,550	4,524	4,592
Kentucky	455	450	450	462	73.00	57.00	40.00	40.00	33,215	25,650	18,000	18,480
Tennessee	445	445	453	467	70.00	49.00	35.00	34.00	31,150	21,805	15,855	15,878
Alabama	420	410	390	380	57.00	40.00	29.00	27.00	23,940	16,400	11,310	10,260
Mississippi	475	451	446	437	62.00	47.00	30.00	27.00	29,450	21,197	13,380	11,799
Arkansas	450	428	436	396	56.00	43.00	29.00	24.00	25,200	18,404	12,644	9,504
Louisiana	220	209	204	203	67.00	52.00	43.00	38.00	14,740	10,868	8,772	7,714
Oklahoma	564	536	556	564	68.00	52.00	39.00	34.00	38,352	27,872	21,684	19,176
Texas	930	948	995	1,004	77.00	63.00	43.00	36.00	71,610	59,724	42,785	36,144
Montana	148	148	155	162	83.00	75.00	58.00	55.00	12,284	11,100	8,990	8,910
Idaho	118	122	128	134	85.00	72.00	65.00	63.00	10,030	8,784	8,320	8,442
Wyoming	55	57	59	62	93.00	75.00	71.00	67.00	5,115	4,275	4,189	4,154
Colorado	202	202	206	209	87.00	70.00	57.00	53.00	17,574	14,140	11,742	11,077
New Mexico	58	61	63	63	83.00	73.00	60.00	50.00	4,814	4,453	3,780	3,150
Arizona	35	30	35	36	95.00	105.00	95.00	93.00	3,325	3,150	3,325	3,348
Utah	72	72	75	80	78.00	70.00	61.00	63.00	5,616	5,040	4,575	5,040
Nevada	14	15	16	17	88.00	86.00	69.00	74.00	1,232	1,290	1,104	1,258
Washington	245	250	255	270	88.00	75.00	70.00	61.00	21,560	18,750	17,850	16,470
Oregon	200	202	202	205	83.00	75.00	62.00	60.00	16,600	15,150	12,524	12,300
California	515	530	550	580	97.00	95.00	76.00	76.00	49,955	50,350	41,800	44,080
United States	21,427	21,408	21,788	22,063	85.56	64.13	50.97	50.94	1,833,348	1,372,813	1,110,470	1,123,876

TABLE 451.—*Cows and heifers 2 years old and over kept for milk: Number and value on farms, by States, January 1, 1920–1926*—Continued

State	Number, Jan. 1—			Average value per head, Jan. 1—			Farm value, Jan. 1—		
	1924	1925	1926 [1]	1924	1925	1926	1924	1925	1926 [1]
	Thousands	*Thousands*	*Thousands*	*Dollars*	*Dollars*	*Dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*
Maine	160	155	149	56.00	52.00	66.00	8,960	8,060	9,834
New Hampshire	86	83	83	63.00	59.00	72.00	5,418	4,897	5,976
Vermont	298	281	272	57.00	57.00	70.00	16,986	16,017	19,040
Massachusetts	157	148	142	76.00	75.00	90.00	11,932	11,100	12,780
Rhode Island	22	22	22	88.00	80.00	87.00	1,936	1,760	1,914
Connecticut	116	117	118	83.00	78.00	92.00	9,628	9,126	10,856
New York	1,422	1,395	1,374	65.00	62.00	80.00	92,430	86,490	109,920
New Jersey	124	124	124	85.00	75.00	95.00	10,540	9,300	11,780
Pennsylvania	898	889	853	62.00	61.00	74.00	55,676	54,229	63,122
Ohio	964	964	945	56.00	57.00	64.00	53,984	54,948	60,480
Indiana	659	679	665	55.00	57.00	62.00	36,245	38,703	41,230
Illinois	1,029	1,049	1,039	60.00	59.00	66.00	61,740	61,891	68,574
Michigan	847	852	869	60.00	60.00	64.00	50,820	51,120	55,616
Wisconsin	1,981	2,015	2,055	58.00	55.00	66.00	114,898	110,825	135,630
Minnesota	1,535	1,563	1,579	52.00	51.00	59.00	79,820	79,713	93,161
Iowa	1,280	1,341	1,369	60.00	58.00	63.00	76,800	77,778	86,247
Missouri	805	835	827	46.00	44.00	47.00	37,030	36,740	38,869
North Dakota	494	520	530	47.00	44.00	47.00	23,218	22,880	24,910
South Dakota	520	544	544	50.00	47.00	52.00	26,000	25,568	28,288
Nebraska	612	625	625	56.00	54.00	58.00	34,272	33,750	36,250
Kansas	737	766	766	50.00	49.00	52.00	36,850	37,534	39,832
Delaware	34	34	34	56.00	60.00	65.00	1,904	2,040	2,210
Maryland	179	184	182	63.00	60.00	66.00	11,277	11,040	12,012
Virginia	385	393	385	42.00	40.00	41.00	16,170	15,720	15,785
West Virginia	215	219	215	43.00	40.00	43.00	9,245	8,760	9,245
North Carolina	306	312	318	43.00	40.00	42.00	13,158	12,480	13,356
South Carolina	182	175	157	38.00	36.00	36.00	6,916	6,300	5,652
Georgia	366	354	340	30.00	30.00	30.00	10,980	10,620	10,200
Florida	82	81	83	55.00	54.00	50.00	4,510	4,374	4,150
Kentucky	457	473	454	38.00	37.00	41.00	17,366	17,501	18,614
Tennessee	458	462	434	32.00	31.00	34.00	14,656	14,322	14,756
Alabama	370	365	340	27.00	26.00	29.00	9,990	9,490	9,860
Mississippi	433	411	379	27.00	24.00	28.00	11,691	9,864	10,612
Arkansas	378	382	367	21.00	25.00	28.00	7,938	9,550	10,276
Louisiana	205	206	198	37.00	37.00	34.00	7,585	7,622	6,732
Oklahoma	554	582	570	31.00	34.00	40.00	17,174	19,788	22,800
Texas	1,014	985	936	33.00	33.00	34.00	33,462	32,505	32,164
Montana	174	187	192	53.00	50.00	54.00	9,222	9,350	10,368
Idaho	147	160	163	62.00	50.00	64.00	9,114	8,000	10,432
Wyoming	64	66	69	57.00	50.00	55.00	3,648	3,300	3,795
Colorado	217	224	222	50.00	45.00	50.00	10,850	10,080	11,100
New Mexico	63	64	64	50.00	45.00	46.00	3,150	2,880	2,944
Arizona	36	37	32	85.00	70.00	70.00	3,060	2,590	2,240
Utah	84	87	88	72.00	58.00	68.00	6,048	5,046	5,984
Nevada	18	19	20	83.00	60.00	75.00	1,494	1,140	1,500
Washington	275	284	275	71.00	65.00	66.00	19,525	18,460	18,150
Oregon	218	225	220	61.00	60.00	60.00	13,298	13,500	13,200
California	595	585	603	76.00	73.00	77.00	45,220	42,705	46,431
United States	22,255	22,523	22,290	52.30	50.68	57.37	1,163,834	1,141,456	1,278,877

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 452.—*Heifers 1 to 2 years old being kept for milk cows: Number January 1, 1920–1926*

State	1920	1921	1922	1923	1924	1925	1926
	Thousands	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*	*Thousands*
Maine	42	44	37	35	32	32	29
New Hampshire	24	25	22	20	18	16	14
Vermont	56	54	46	47	43	46	39
Massachusetts	27	25	21	25	24	20	18
Rhode Island	4	3	3	4	3	2	2
Connecticut	23	19	18	17	18	17	14
New York	253	202	193	206	191	188	151
New Jersey	18	16	14	15	15	13	12
Pennsylvania	165	147	130	137	124	129	106
Ohio	177	171	154	163	133	152	140
Indiana	129	114	177	108	88	111	98
Illinois	208	184	164	179	196	189	164
Michigan	170	152	149	148	150	150	153
Wisconsin	392	370	337	371	363	364	331
Minnesota	336	333	341	331	270	307	278
Iowa	245	249	252	237	236	273	245
Missouri	158	141	134	150	170	172	162
North Dakota	105	95	92	101	119	127	122
South Dakota	96	99	89	112	106	127	110
Nebraska	95	112	112	112	119	124	131
Kansas	129	150	142	144	160	155	139
Delaware	5	4	4	4	5	5	5
Maryland	27	26	25	28	32	29	29
Virginia	63	60	58	61	62	55	50
West Virginia	30	27	27	30	32	30	23
North Carolina	67	66	63	59	52	56	49
South Carolina	42	38	33	36	37	37	30
Georgia	100	93	89	92	97	84	73
Florida	19	21	19	21	19	16	17
Kentucky	76	66	62	68	75	65	61
Tennessee	85	77	64	64	81	88	74
Alabama	103	93	80	90	91	83	77
Mississippi	114	111	112	97	94	87	77
Arkansas	110	96	106	101	98	91	80
Louisiana	51	44	47	43	35	44	34
Oklahoma	128	127	110	112	115	127	101
Texas	188	163	151	203	220	194	194
Montana	30	33	30	30	35	36	35
Idaho	28	27	31	31	33	38	38
Wyoming	10	11	11	13	13	14	14
Colorado	44	38	44	41	42	48	47
New Mexico	12	15	18	15	10	11	13
Arizona	9	6	7	9	11	10	8
Utah	15	14	16	16	19	21	19
Nevada	3	3	4	4	5	6	6
Washington	53	53	51	51	50	59	57
Oregon	40	36	34	43	45	44	46
California	114	102	100	123	151	142	147
United States	4,418	4,155	4,023	4,147	4,137	4,234	3,861

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 453.—*Cattle: Numbers in countries having 150,000 or over, pre-war and years 1921–1926*

[Thousands—i. e. 000 omitted]

Countries	Month of estimate	Pre-war[1]	1921	1922	1923	1924	1925	1926
NORTH AMERICA								
Canada	June	6,551	10,206	9,720	9,246	9,461	9,307	.....
United States[2]	.....	58,676	67,184	67,264	66,156	64,507	62,150	59,829
Mexico	June	[3] *5,142*	.....	.....	1,750	2,188	.....	.....
CENTRAL AMERICA AND WEST INDIES								
Guatemala	July	557	297	319	246	233	.....	.....
Honduras (Republic of)	.....	411	[4] 466	.....	.....	.....	.....	.....
Salvador	.....	350	.....	.....	.....	.....	.....	.....
Nicaragua	.....	[5] *252*	1,200	.....	.....	.....	.....	.....
Costa Rica	.....	*333*	.....	477	426	404	.....	.....
Cuba	December	2,917	.....	4,771	4,877	5,085	4,653	.....
Dominican Republic	May	.....	647	.....	.....	.....	.....	.....
Porto Rico	.....	*316*	[6] *279*	.....	.....	.....	.....	.....
SOUTH AMERICA								
Colombia	.....	4,000	*9,428*	.....	.....	[7] 6,391	.....	.....
Venezuela	.....	2,004	2,600	2,778	.....	.....	.....	.....
Peru	Febuary–April	.....	[8] 1,000	1,302	1,293	.....	.....	.....
Bolivia	.....	734	.....	.....	.....	.....	.....	.....
Chile	.....	1,780	.....	1,966	.....	.....	.....	.....
Brazil[9]	September	30,705	[6] *34,271*	.....	.....	.....	.....	.....
Uruguay	.....	[5] *8,198*	[10] *7,802*	.....	.....	*8,432*	.....	.....
Paraguay	December	4,172	.....	.....	.....	[7] 4,000	[7] 4,300	[7] 5,000
Argentina	do	[11] *25,867*	27,9 3	28,138	*37,065*	.....	.....	.....
EUROPE								
England and Wales	June	5,843	5,517	5,723	5,823	5,894	6,163	.....
Scotland	do	1,203	1,143	1,147	1,194	1,164	1,197	.....
Ireland	do	4,847	5,197	5,157	4,963	5,004	4,657	.....
Norway[12]	do	[13] 1,134	1,095	.....	1,131	1,114	1,151	.....
Sweden	do	3,009	[6] 2,736	.....	.....	.....	.....	.....
Denmark	July	2,717	2,591	2,525	2,523	2,667	2,756	.....
Holland	May–June	2,097	2,063	.....	.....	.....	.....	.....
Belgium	December	1,925	1,487	1,515	1,517	1,603	1,628	.....
France	do	15,338	13,217	13,343	13,576	13,749	14,025	.....
Spain	do	2,587	.....	*3,718*	3,297	3,435	3,436	.....
Portugal	.....	[14] *703*	[6] *741*	.....	.....	.....	.....	.....
Italy[9]	March–April	6,590	[4 15] 6,624	.....	.....	.....	.....	.....
Switzerland	April	*1,443*	*1,425*	.....	.....	.....	.....	.....
Germany	December	18,474	16,807	16,791	16,316	[16] 16,691	17,326	17,183
Austria	December–April	2,356	2,320	.....	*2,162*	.....	.....	.....
Czechoslovakia	December	4,596	*4,377*	.....	.....	[7] 4,607	.....	.....
Hungary	April	2,150	.....	1,828	1,819	1,896	.....	.....
Yugoslavia[9]	January	5,155	5,011	4,036	4,085	3,870	.....	.....
Greece[9]	.....	665	689	.....	.....	.....	.....	.....
Bulgaria[9]	December	2,048	*2,295*	.....	.....	.....	1,560	.....
Rumania[9]	.....	5,648	5,721	5,932	5,734	5,583	.....	.....
Poland	.....	8,351	8,132	.....	.....	8,800	.....	.....
Lithuania	.....	918	849	1,021	1,285	1,252	.....	.....
Latvia	June	912	800	810	*911*	905	907	.....

[1] Average for 5-year period immediately preceding war if available, otherwise for any years within this period, except as otherwise stated. In countries having changed boundaries the figures are estimates for one year only of numbers within present boundaries.

[2] Revised estimates of Division of Crop and Livestock Estimates, 1921–1926. These figures are made on the basis of census figures of 1920 and 1925, of annual assessment data and other information. The estimates prepared in the Bureau of Animal Industry by adjustment of the census figures to a January 1 basis and including all animals in towns and villages as well as on farms and ranges are as follows: Average, 58,900; 1921, 67,200; 1922, 67,700; 1923, 68,900; 1924, 68,200; and 1925, 66,600.

[3] Year 1902.

[4] Year 1918.

[5] Year 1908.

[6] Year 1920.

[7] Unofficial.

[8] Year 1917.

[9] Buffaloes included.

[10] Year 1916.

[11] June, 1914.

[12] Numbers in rural communities only.

[13] Year 1917.

[14] Year 1906.

[15] Estimated for present boundaries. The estimate for former boundaries on Apr. 6, 1918, is 6,239,741.

[16] No census was made as of December, 1923, which estimate would have been considered as of January, 1924, in this table, as explained in the general note, so the figure for October, 1923, has been used.

TABLE 453.—*Cattle: Numbers in countries having 150,000 or over, pre-war and years 1921–1926*—Continued

[Thousands—i. e., 000 omitted]

Countries	Month of estimate	Pre-war	1921	1922	1923	1924	1925	1926
EUROPE—continued								
Esthonia		528	443	527	513	501		
Finland	September	1,605	1,792	1,844	1,865	1,864		
Russia	Summer	30,132	29,750	27,747	33,042	37,717	39,669	
AFRICA								
Morocco		[17] 676	1,517	1,558	1,683	1,840		
Algeria	September	1,112	851	837	794	[18] 873		
Tunis		195	488	487	400	383		
French West Africa (excluding Sudan).			1,834	2,142				
French Sudan			1,019	1,025	1,215			
Nigeria			2,824	2,910	2,747			
Egypt	September	1,316	1,242	1,201	1,291	1,416		
Anglo-Egyptian Sudan			874	845	852	814		
Eritrea (Italian)		517	[6] *458*	553				
Kenya Colony	March–June	754	2,559	2,814	3,190	3,211		
Uganda		556	682	920	1,227	1,372		
French Equatorial Africa			665	712	910	1,000		
Belgian Congo		500	500	500	510			
British Southwest Africa		206	*529*	586	550	567		
Bechuanaland		*324*	*495*					
Union of South Africa	April–May	*5,797*	*8,557*	9,201	*9,607*	*9,606*		
Basutoland		*437*	*581*	589	603	617		
Rhodesia:								
Northern	December	255		*231*		351		
Southern	do	509	1,517	1,751	1,801	1,921	2,009	
Swaziland		60	*211*	225	268	270		
Tanganyika Territory		1,489	*3,147*		3,800			
Madagascar	February	4,890	7,519	7,829	7,819	7,367		
ASIA								
Turkey, European and Asiatic.		[16] 6,438			3,551			
India: [9]								
British	December–April	128,451	145,103	145,000	146,220			
Native States	do	13,258	33,323	34,119	32,950			
Ceylon		1,484	1,599	1,355	1,500	1,383		
Russia		15,609	[20] 7,067	[20] 5,230	[20] 8,227	13,703	[20]10,247	
China		21,997						
Japan	December	1,385	1,376	1,440	1,459	1,469		
Chosen	do	966	1,490	1,524	1,608		1,605	
Formosa [9]	do	473	429	423	409			
French Indo-China [9]		[10] 4,616	3,099	3,680				
Siam [9]		4,501	5,229	6,137	6,270	7,865		
Philippine Islands		322	761	806	816	874		
Dutch East Indies:								
Java and Madura [9]		5,091	5,060	5,269	5,421			
Outer possessions [9]		1,640	1,874	1,948	1,942			
OCEANIA								
Australia	December	11,535	13,500	14,441	14,337	13,358		
New Zealand	January	*2,020*	3,129	3,323	3,481	3,563	3,504	

Division of Statistical and Historical Research. Census returns are in italics, other returns in roman. All estimates for countries reporting as of December have been considered as of January of the following year.

[6] Year 1920.
[9] Buffaloes included.
[10] Year 1916.
[17] Year 1915.
[18] Excludes southern territory where there were 15,580 cattle in 1923.
[19] In addition there were 832,163 buffaloes.
[20] Excludes Transcaucasia and Turkestan. The number in Turkestan and Azerbaijan (part of Transcaucasia) in 1920 amounted to 2,048,000.

TABLE 454.—*Cattle: Yearly losses per 1,000 from disease and exposure, 1909–1925*

Year ended Apr. 30	From disease	From exposure	Year ended Apr. 30	From disease	From exposure	Year ended Apr. 30	From disease	From exposure
1909	19.2	14.8	1915			1921	17.0	9.2
1910	21.0	17.6	1916	19.5	10.7	1922	17.8	13.1
1911	19.7	13.3	1917	19.4	14.6	1923	16.7	13.1
1912	21.6	21.5	1918	18.2	13.3	1924	17.7	12.6
1913	20.5	14.1	1919	17.4	15.9	1925	14.2	11.7
1914	19.8	10.9	1920	19.5	18.5			

Division of Crop and Livestock Estimates. As reported by crop reporters on May 1 for year ending April 30.

TABLE 455.—*Cattle and calves: Receipts and shipments at principal markets and at all markets, 1909–1925*

[Thousands—i. e., 000 omitted]

RECEIPTS

Year	Chicago	Denver	East St. Louis	Fort Worth	Kansas City	Omaha	South St. Joseph	South St. Paul	Sioux City	Total	All other markets reporting	Total all markets reporting
1909	3,340	426	1,241	1,197	2,660	1,125	592	497	426	11,504	(1)	(1)
1910	3,553	399	1,208	1,071	2,507	1,224	565	604	439	11,570	(1)	(1)
1911	3,453	298	1,072	884	2,370	1,174	513	539	437	10,790	(1)	(1)
1912	3,158	416	1,200	1,039	2,147	1,017	494	524	431	10,426	(1)	(1)
1913	2,888	499	1,100	1,185	2,319	962	450	532	394	10,329	(1)	(1)
1914	2,601	443	1,041	1,176	1,957	939	356	585	368	9,466	(1)	(1)
1915	2,685	424	992	944	1,963	1,218	441	856	534	10,057	4,496	14,553
1916	3,250	601	1,200	1,081	2,331	1,434	480	941	602	11,920	5,756	17,676
1917	3,820	653	1,405	1,960	2,902	1,720	670	1,197	707	15,034	8,032	23,066
1918	4,448	728	1,509	1,665	3,320	1,993	870	1,430	818	16,781	8,514	25,295
1919	4,253	824	1,473	1,267	3,085	1,975	750	1,491	814	15,932	8,691	24,623
1920	3,849	617	1,254	1,134	2,500	1,603	643	1,373	752	13,725	8,472	22,197
1921	3,540	482	1,077	984	2,469	1,435	558	985	620	12,150	7,637	19,787
1922	3,934	656	1,400	1,084	2,983	1,744	655	1,387	747	14,590	8,627	23,217
1923	3,918	620	1,399	1,258	3,208	1,793	709	1,349	759	15,013	8,198	23,211
1924	3,997	630	1,385	1,392	3,043	1,863	720	1,323	836	15,189	8,506	23,695
1925	3,871	587	1,444	1,370	2,958	1,709	734	1,636	897	15,206	8,861	24,067

SHIPMENTS

1909	1,297	(1)	374	(1)	(1)	374	185	322	232	2,784	(1)	(1)
1910	1,347	(1)	370	(1)	(1)	425	161	369	213	2,885	(1)	(1)
1911	1,245	(1)	309	(1)	(1)	446	157	318	249	2,724	(1)	(1)
1912	994	(1)	315	(1)	(1)	418	158	293	240	2,418	(1)	(1)
1913	1,001	(1)	344	(1)	(1)	432	157	322	228	2,484	(1)	(1)
1914	824	(1)	306	(1)	(1)	394	124	328	197	2,173	(1)	(1)
1915	392	359	269	506	1,032	536	175	523	289	4,081	1,771	5,852
1916	726	512	313	511	1,028	591	149	556	369	4,755	2,198	6,953
1917	867	521	317	838	1,202	723	211	723	410	5,812	3,661	9,473
1918	1,025	544	370	562	1,422	855	299	896	432	6,405	3,906	10,311
1919	1,221	642	454	475	1,467	840	220	935	459	6,713	4,044	10,757
1920	1,247	471	510	544	1,209	689	234	634	410	5,948	3,883	9,831
1921	1,163	360	611	412	1,244	635	188	391	346	5,350	3,250	8,600
1922	1,137	532	871	467	1,534	829	251	609	447	6,677	3,988	10,665
1923	1,105	490	855	463	1,599	794	265	496	417	6,484	3,576	10,060
1924	1,107	471	841	420	1,440	759	250	396	435	6,119	3,572	9,691
1925	1,002	412	894	383	1,289	630	206	482	411	5,709	3,729	9,438

Division of Statistical and Historical Research. Prior to 1915 receipts compiled from yearbooks of stockyard companies; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool. Prior to 1915 shipments compiled from yearbooks of stockyard companies, except East St. Louis (1909 to 1914, from Merchants Exchange Annual Report); subsequent figures from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Figures not available prior to 1915.

TABLE 456.—*Cattle and calves: Receipts at all public stockyards, 1915–1925*

[Thousands—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1915[1]	1,029	768	1,017	987	1,111	1,113	1,039	1,246	1,531	1,818	1,724	1,170	14,553
1916[1]	1,202	1,055	1,201	1,151	1,385	1,319	1,154	1,584	1,779	2,409	1,977	1,460	17,676
1917	1,696	1,302	1,330	1,539	1,961	1,759	1,729	1,814	2,357	3,054	2,626	1,899	23,066
1918	1,727	1,498	1,713	2,046	1,863	1,815	2,128	2,024	2,826	2,865	2,648	2,142	25,295
1919	2,119	1,453	1,517	1,767	1,836	1,588	2,016	2,039	2,396	3,008	2,702	2,182	24,623
1920	1,881	1,480	1,663	1,557	1,778	1,879	1,671	1,962	2,294	2,209	2,428	1,395	22,197
1921	1,644	1,190	1,566	1,494	1,542	1,580	1,343	1,867	1,906	2,310	1,928	1,417	19,787
1922	1,628	1,417	1,622	1,470	1,878	1,759	1,709	2,149	2,397	2,936	2,427	1,825	23,217
1923	1,877	1,427	1,502	1,670	1,900	1,629	1,903	2,214	2,295	2,802	2,182	1,810	23,211
1924	1,888	1,457	1,556	1,751	1,890	1,673	1,798	1,934	2,566	2,736	2,363	2,083	23,695
1925	1,869	1,530	1,860	1,826	1,737	1,746	1,970	2,245	2,157	2,789	2,282	2,056	24,067

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Complete information for 1915 and 1916, particularly on disposition of stock, is not obtainable from many of the markets.

TABLE 457.—*Cattle and calves: Receipts at Chicago, East St. Louis, Kansas City, and Omaha, combined, 1909–1925*

[Thousands—i.e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1909	628	491	593	489	558	558	610	810	879	982	914	753
1910	641	515	590	498	553	630	662	915	995	1,040	834	617
1911	700	516	555	498	612	620	680	764	766	1,044	757	555
1912	660	486	502	515	484	462	516	667	868	1,010	674	676
1913	606	486	481	523	452	525	568	688	923	824	606	588
Av. 1909–1913	647	499	544	505	532	559	607	769	886	980	757	638
1914	526	446	482	446	405	473	457	566	785	813	558	581
1915	518	377	523	465	461	474	462	611	730	834	798	605
1916	606	534	558	452	558	530	535	807	861	1,146	915	716
1917	807	567	533	600	708	701	773	808	1,029	1,309	1,148	864
1918	763	709	779	881	688	705	967	911	1,347	1,320	1,167	1,032
1919	998	682	646	706	668	641	881	926	1,131	1,362	1,169	976
1920	847	642	698	532	642	696	669	868	1,032	932	1,029	618
Av. 1914–1920	724	565	603	583	590	603	678	785	988	1,102	969	770
1921	744	520	679	608	625	675	542	863	866	1,019	795	585
1922	717	617	682	577	748	750	719	981	1,096	1,338	1,045	789
1923	833	641	652	720	793	692	856	1,082	1,116	1,263	892	780
1924	826	641	675	722	784	717	791	857	1,204	1,222	939	908
1925	768	623	767	692	676	715	870	980	974	1,172	922	822
Av. 1921–1925	778	608	691	664	725	710	756	953	1,051	1,203	919	777

Division of Statistical and Historical Research. Figures prior to 1915 compiled from yearbooks of stockyard companies; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 458.—*Cattle and calves: Receipts, local slaughter, and stocker and feeder shipments, public stockyards, 1916–1925*

[Thousands—i. e., 000 omitted]

RECEIPTS

Market	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Albany, N. Y	42	107	46	39	36	23	21	14	13	10
Amarillo, Tex	133	352	272	185	147	113	140	115	130	163
Atlanta, Ga		27	22	18	21	29	30	59	50	55
Augusta, Ga		14	14	14	13	12	14	12	9	9
Baltimore, Md	178	228	227	249	287	279	241	228	233	247
Boston, Mass	90	91	104	98	75	61	77	67	101	127
Buffalo, N. Y	477	531	668	749	677	609	637	589	550	599
Chattanooga, Tenn	24	25	13	12	13	15	19	17	15	15
Cheyenne, Wyo		40	47	47	23	9	9	22	15	10
Chicago, Ill	3,250	3,820	4,448	4,253	3,849	3,540	3,934	3,918	3,997	3,871
Cincinnati, Ohio	352	453	455	460	441	454	446	426	442	432
Cleveland, Ohio	181	296	302	305	281	248	281	278	285	293
Dallas, Tex	9	8	12	9	8	8	8	7	7	12
Dayton, Ohio	21	26	30	31	33	31	33	34	34	34
Denver, Colo	601	653	728	824	617	482	656	620	630	587
Detroit, Mich	200	263	252	227	234	201	253	268	283	303
East St. Louis, Ill	1,200	1,408	1,509	1,473	1,254	1,077	1,400	1,399	1,385	1,444
El Paso, Tex	130	190	212	203	152	170	149	103	142	177
Evansville, Ind	23	35	45	38	45	35	44	39	36	42
Fort Wayne, Ind								8	14	18
Fort Worth, Tex	1,081	1,960	1,665	1,267	1,134	984	1,084	1,258	1,392	1,370
Fostoria, Ohio	12	12	10	11	14	11	15	12	11	12
Indianapolis, Ind	405	501	504	515	597	483	509	528	560	547
Jacksonville, Fla	3	9	40	16	7	6	5	7	5	7
Jersey City, N. J	746	755	650	745	833	844	905	673	711	745
Kansas City, Mo	2,331	2,902	3,320	3,085	2,500	2,469	2,983	3,208	3,043	2,958
Knoxville, Tenn	17	20	19	21	21	18	24	22	25	27
Lafayette, Ind	10	14	14	17	19	18	13	13	14	16
Lancaster, Pa	144	258	304	239	287	205	234	229	223	233
Laredo, Tex								15	12	16
Los Angeles, Calif								183	252	247
Louisville, Ky	202	221	218	246	245	246	283	255	231	240
Marion, Ohio			2	13	32	7	16	9	6	5
Memphis, Tenn	2	5	4	6	19	8	13	22	19	24
Milwaukee, Wis	244	295	370	398	444	439	504	512	532	588
Montgomery, Ala		7	34	52	68	50	59	75	77	73
Moultrie, Ga						4	5	5	7	6
Muncie, Ind										15
Nashville, Tenn	39	118	88	83	99	96	109	96	100	116
Newark, N. J								41	46	41
New Orleans, La	154	166	174	191	213	188	193	207	212	205
New York, N. Y	322	276	385	402	316	301	258	216	218	222
North Salt Lake, Utah	12	42	54	67	49	57	88	74	99	100
Ogden, Utah		64	117	104	64	76	91	122	155	163
Oklahoma City, Okla	325	620	690	593	400	315	382	414	388	404
Omaha, Nebr	1,434	1,720	1,993	1,975	1,603	1,435	1,744	1,793	1,863	1,709
Pasco, Wash			3	6	8	3	6	2	5	7
Peoria, Ill	20	25	32	27	36	43	40	38	46	56
Philadelphia, Pa	180	192	194	201	226	227	264	179	192	188
Pittsburgh, Pa	169	560	523	616	733	745	867	821	909	887
Portland, Oreg	83	105	120	125	141	120	140	168	175	176
Pueblo, Colo	130	186	205	217	178	79	199	151	108	112
Richmond, Va	29	26	22	29	30	28	32	32	33	39
South St. Joseph, Mo	480	670	870	750	643	558	655	709	720	734
South St. Paul, Minn	941	1,197	1,430	1,491	1,373	985	1,387	1,349	1,323	1,636
San Antonio, Tex	208	193	176	250	233	151	198	163	183	167
Seattle, Wash	25	39	56	66	58	47	46	55	64	57
Sioux City, Iowa	602	707	818	814	752	620	747	759	836	897
Sioux Falls, S. Dak		7	7	8	14	17	33	30	14	24
Spokane, Wash	17	26	51	74	67	41	49	45	55	60
Springfield, Ohio								7	9	13
Toledo, Ohio	26	32	44	57	64	25	25	25	25	24
Washington, D. C	15	16	18	23	27	28	29	32	33	36
Wichita, Kans	220	371	394	311	242	285	407	417	389	417
Discontinued[2]	137	182	271	278	202	129	185	17	4	(1)
Total	17,676	23,066	25,295	24,623	22,197	19,787	23,218	23,211	23,695	24,067

[1] Not over 500.

[2] Includes only those markets which have been totally discontinued.

TABLE 458.—*Cattle and calves: Receipts, local slaughter, and stocker and feeder shipments, public stockyards, 1916–1925*—Continued.

[Thousands—i. e., 000 omitted]

LOCAL SLAUGHTER[3]

Market	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Albany, N. Y.		8	6	4	3	2	1	1	1	1
Amarillo, Tex.				1	1	1	(1)	(1)		(1)
Atlanta, Ga.		15	11	11	15	18	19	33	29	29
Augusta, Ga.		10	8	9	8	8	11	9	7	8
Baltimore, Md.	112	122	126	145	170	156	157	158	165	168
Buffalo, N. Y.	197	212	205	202	190	167	192	189	199	212
Chattanooga, Tenn.			9	10	10	11	13	13	11	13
Chicago, Ill.	2,524	2,953	3,422	3,032	2,603	2,377	2,797	2,813	2,890	2,869
Cincinnati, Ohio	233	300	303	305	283	302	252	230	242	246
Cleveland, Ohio	164	223	223	244	228	228	253	256	256	264
Dallas, Tex.	9	8	12	9	8	8	8	7	7	12
Dayton, Ohio	18	23	26	25	26	27	29	30	30	30
Denver, Colo.	89	131	185	174	153	122	124	131	159	175
Detroit, Mich.	165	174	192	189	202	168	206	239	248	262
East St. Louis, Ill.	888	1,087	1,140	1,019	744	466	530	544	544	550
El Paso, Tex.		10	19	24	21	24	20	26	30	31
Evansville, Ind.	13	15	15	16	24	21	23	22	21	17
Fort Wayne, Ind.								4	4	4
Fort Worth, Tex.	474	991	954	715	558	576	620	795	972	987
Fostoria, Ohio		2	3	2	3	1	1	1	1	1
Indianapolis, Ind.	208	270	268	245	257	230	238	247	269	246
Jacksonville, Fla.		6	39	16	6	3	3	4	4	5
Jersey City, N. J.	746	755	650	745	833	843	903	673	711	745
Kansas City, Mo.	1,301	1,677	1,915	1,617	1,264	1,200	1,407	1,559	1,552	1,631
Knoxville, Tenn.	13	10	9	9	11	10	13	12	13	15
Lafayette, Ind.	6	6	5	7	8	9	8	8	8	8
Lancaster, Pa.			28	45	55	37	48	47	45	53
Laredo, Tex.								2	3	3
Los Angeles, Calif.								173	242	235
Louisville, Ky.	70	76	74	87	87	81	89	98	93	103
Marion, Ohio			(1)	1	1	1	2	2	2	2
Memphis, Tenn.				1	(1)	5	8	11	11	17
Milwaukee, Wis.	214	263	321	334	390	402	458	471	494	547
Montgomery, Ala.				3	4	4	4	7	10	6
Moultrie, Ga.						1	2	2	4	4
Muncie, Ind.										5
Nashville, Tenn.	7	27	32	41	46	42	47	51	51	56
Newark, N. J.								37	43	37
New Orleans, La.	141	155	160	162	174	160	159	168	178	173
New York, N. Y.	322	276	385	400	315	300	257	215	217	222
North Salt Lake, Utah	1	11	23	19	14	25	14	16	36	40
Ogden, Utah		12	12	11	16	13	12	16	14	10
OklahomaCity,Okla.	221	415	528	368	228	203	219	279	290	306
Omaha, Nebr.	843	996	1,138	1,136	914	797	916	997	1,104	1,080
Pasco, Wash.			(1)	(1)	(1)				(1)	
Peoria, Ill.	14	14	26	18	18	21	20	17	18	17
Philadelphia, Pa.		183	186	196	221	225	261	172	189	185
Pittsburgh, Pa.	92	168	163	151	171	175	161	175	172	179
Portland, Oreg.	42	56	65	62	70	59	67	98	106	112
Pueblo, Colo.			(1)			1	(1)	1	1	1
Richmond, Va.	13	14	13	17	19	20	25	24	25	27
South St.Joseph,Mo.	331	459	569	531	410	370	403	444	469	529
South St.Paul,Minn.	381	487	616	530	710	564	783	851	928	1,152
San Antonio, Tex.		55	20	14	37	36	54	53	60	57
Seattle, Wash.	25	39	56	64	56	46	45	55	62	56
Sioux City, Iowa	233	296	385	363	342	273	301	341	402	485
Sioux Falls, S. Dak.		(1)	1	1	6	7	13	11	5	10
Spokane, Wash.	3	14	36	36	35	23	26	28	28	35
Springfield, Ohio								2	3	2
Toledo,Ohio	12	11	13	13	18	14	12	13	13	11
Washington, D. C.	15	12	15	20	25	27	28	31	32	37
Wichita, Kans.	86	122	145	133	84	83	93	104	125	139
Discontinued[2]	68	106	119	101	99	85	80	14	2	(1)
Total	10,294	13,275	14,874	13,633	12,194	11,078	12,435	13,030	13,850	14,462

[1] Not over 500.
[2] Includes only those markets which have been totally discontinued.
[3] Compiled from reports of stock sold and driven out for local slaughter, made by stockyards to the Division of Livestock, Meats, and Wool.

TABLE 458.—*Cattle and calves: Receipts, local slaughter, and stocker and feeder shipments, public stockyards, 1916–1925*—Continued

[Thousands—i. e., 000 omitted]

STOCKER AND FEEDER SHIPMENTS

Market	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Albany, N. Y.	----	1	1	1	1	(1)	(1)	(1)	(1)	(1)
Amarillo, Tex.	110	262	197	122	91	84	103	74	87	132
Atlanta, Ga.	----	----	2	4	1	3	2	6	2	1
Augusta, Ga.	----	1	3	3	2	3	2	2	2	2
Baltimore, Md.	7	8	11	5	5	3	3	3	5	7
Buffalo, N. Y.	26	25	31	39	14	8	7	4	12	13
Chattanooga, Tenn.	----	----	2	2	2	4	4	3	4	2
Chicago, Ill.	256	358	401	509	417	332	343	295	258	231
Cincinnati, Ohio	26	22	30	28	28	22	26	23	21	21
Cleveland, Ohio	----	3	4	6	3	6	5	4	5	2
Dayton, Ohio	2	(1)	1	(1)	(1)	----	----	----	----	----
Denver, Colo.	386	397	402	483	407	274	413	361	359	289
Detroit, Mich.	9	8	6	17	16	14	14	11	10	6
East St. Louis, Ill.	161	221	225	234	168	185	275	281	199	143
El Paso, Tex.	----	159	178	151	115	102	84	40	59	85
Evansville, Ind.	----	1	3	1	1	1	3	3	3	4
Fort Wayne, Ind.	----	----	----	----	----	----	----	(1)	(1)	(1)
Fort Worth, Tex.	312	437	393	327	278	172	225	169	158	191
Fostoria, Ohio	6	4	3	5	5	3	7	5	4	2
Indianapolis, Ind.	45	46	56	50	48	41	44	44	48	45
Jacksonville, Fla.	1	1	1	(1)	(1)	----	1	(1)	----	(1)
Kansas City, Mo.	893	948	1,053	1,036	778	788	1,151	1,162	998	908
Knoxville, Tenn.	1	6	8	8	4	3	6	4	2	4
Lafayette, Ind.	(1)	1	1	2	1	1	1	1	(1)	(1)
Lancaster, Pa.	----	----	93	95	87	1	----	53	63	82
Laredo, Tex.	----	----	----	----	----	----	----	10	6	10
Los Angeles, Calif.	----	----	----	----	----	----	----	9	9	11
Louisville, Ky.	----	----	24	36	31	37	42	32	22	24
Marion, Ohio	----	----	1	1	(1)	(1)	(1)	(1)	(1)	(1)
Memphis, Tenn.	(1)	----	----	(1)	2	1	2	7	5	4
Milwaukee, Wis.	5	9	11	16	15	12	13	16	14	11
Montgomery, Ala.	----	(1)	6	9	28	10	9	7	10	6
Moultrie, Ga.	----	----	----	----	----	(1)	(1)	(1)	(1)	1
Muncie, Ind.	----	----	----	----	----	----	----	----	----	1
Nashville, Tenn.	6	3	3	11	14	12	15	9	10	11
Newark, N. J.	----	----	----	----	----	----	----	3	3	4
New Orleans, La.	8	5	6	18	17	16	21	21	11	10
North Salt Lake, Utah	2	25	23	25	16	12	15	11	9	12
Ogden, Utah	----	5	27	48	28	25	23	45	59	64
Oklahoma City, Okla.	88	172	155	136	106	80	80	70	46	58
Omaha, Nebr.	533	561	526	656	451	443	621	586	467	383
Pasco, Wash.	----	----	(1)	----	(1)	----	----	----	----	(1)
Peoria, Ill.	2	2	2	(1)	1	4	7	4	7	6
Portland, Oreg.	12	18	18	21	26	9	12	10	10	10
Pueblo, Colo.	----	----	79	7	5	4	16	45	41	45
Richmond, Va.	1	1	1	2	2	2	2	3	2	1
South St. Joseph, Mo.	95	127	116	124	103	103	176	170	142	118
South St. Paul, Minn.	358	357	337	416	316	270	439	348	272	322
San Antonio, Tex.	59	43	53	138	96	26	83	66	63	53
Seattle, Wash.	----	(1)	(1)	(1)	----	(1)	(1)	(1)	----	(1)
Sioux City, Iowa	328	348	303	329	238	240	335	308	264	260
Sioux Falls, S. Dak.	----	6	4	1	1	4	11	14	7	12
Spokane, Wash.	----	9	12	28	23	7	12	8	13	12
Springfield, Ohio	----	----	----	----	----	----	----	----	----	2
Toledo, Ohio	1	2	5	4	5	4	4	4	4	3
Washington, D. C.	----	----	(1)	1	(1)	(1)	----	----	----	----
Wichita, Kans.	107	192	188	116	104	132	203	198	183	199
Discontinued [2]	1	9	8	15	2	1	4	1	(1)	----
Total	3,847	4,803	5,013	5,286	4,102	3,504	4,864	4,553	3,978	3,823

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats and Wool.

[1] Not over 500.

[2] Includes only those markets which have been totally discontinued.

TABLE 459.—*Cattle and calves: Slaughter in United States, by States, 1909, 1914, 1919, 1921, and 1923* [1]

CATTLE

State	1909				1914 [2]	1919 [3]			1921 [2]	1923
	In wholesale slaughtering and meat-packing establishments	Retail slaughter	On farms and ranges	Total slaughter	In wholesale slaughtering and meat-packing establishments	In wholesale slaughtering and meat-packing establishments	On farms and ranges [4]	Total wholesale and farm slaughter [4]	In wholesale slaughtering and meat-packing establishments	In wholesale slaughtering and meat-packing establishments
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Calif	341,617	276,666	36,319	654,602	315,762	395,524	46,737	442,261	442,750	549,155
Colo	64,308	53,478	26,818	144,604	62,735	145,694	29,972	175,666	109,102	120,753
Ill	2,181,199	195,588	38,466	2,415,253	1,864,982	2,887,414	71,732	2,959,146	1,898,692	2,573,721
Ind	252,697	138,729	27,122	418,548	200,180	271,004	42,394	313,398	243,066	285,516
Iowa	252,821	160,688	73,454	486,963	219,359	437,055	67,705	504,760	383,750	455,894
Kans	1,362,572	103,860	30,660	1,497,092	990,188	1,479,805	48,247	1,528,052	1,088,178	1,227,130
Mich	50,157	165,527	43,619	259,303	62,035	106,975	117,219	224,194	87,497	135,894
Minn	125,852	109,844	79,226	314,922	166,903	299,462	111,276	410,738	286,453	340,849
Mo	530,356	86,258	32,059	648,673	359,910	674,287	43,909	718,196	524,917	583,837
Nebr	651,258	78,350	42,083	771,691	491,632	1,006,654	41,350	1,048,004	722,609	943,916
N. J	53,234	35,492	3,175	91,901	37,903	110,066	5,924	115,990	111,468	107,098
N. Y	668,447	163,533	68,793	900,773	636,389	661,518	117,746	779,264	517,953	581,751
Ohio	265,191	275,401	54,040	594,632	269,719	410,680	78,074	488,754	363,630	364,317
Pa	252,897	247,740	88,505	589,142	236,949	257,608	148,864	406,472	304,741	310,929
Tex	527,469	277,064	64,031	868,564	554,479	550,550	61,543	612,093	304,475	426,342
Wash	117,522	56,497	25,087	199,106	85,774	132,213	71,700	203,913	108,819	132,973
Wis	73,049	144,160	51,040	268,249	70,900	123,316	101,973	225,289	133,948	148,571
All other States	344,214	1,519,047	624,143	2,487,404	523,243	868,686	698,216	1,566,902	631,527	889,850
Total	8,114,860	4,087,922	1,408,640	13,611,422	7,149,042	10,818,511	1,904,581	12,723,092	8,263,575	10,178,496

CALVES

Calif	81,344	96,520	50,538	228,402	31,834	86,980			115,460	175,419
Ill	513,639	162,913	81,079	757,631	439,616	839,604			732,526	739,505
Ind	60,578	84,792	21,731	167,101	61,500	65,557			59,440	71,511
Kans	209,357	24,518	11,536	245,411	130,102	386,971			272,794	428,829
Md	23,137	70,337	2,110	95,584	26,278	60,530			66,504	79,842
Mass	129,162	59,050	14,187	202,399	115,724	244,394			174,570	166,223
Mich	27,284	133,174	61,896	222,354	24,505	74,242			43,092	104,002
Minn	55,991	108,126	80,493	244,610	79,589	288,623			392,290	567,061
Mo	81,551	100,375	8,779	190,705	45,213	167,753			138,242	148,810
Nebr	58,158	28,090	5,458	91,706	23,914	131,896			66,714	78,344
N. J	95,604	77,927	14,025	187,556	68,492	101,975			143,966	154,674
N. Y	377,121	237,694	212,962	827,777	378,197	572,955			681,399	644,764
Ohio	150,223	240,145	31,180	421,548	141,358	249,487			244,104	253,600
Pa	152,851	332,704	68,936	554,491	115,446	164,415			225,266	282,131
Tex	234,172	99,390	22,445	356,007	145,391	353,417			348,946	389,590
Wis	129,207	289,694	93,167	512,068	101,936	293,248			358,125	441,785
All other States	125,349	734,199	351,078	1,210,626	89,909	313,628			251,412	373,922
Total	2,504,728	2,879,648	1,131,600	6,515,976	2,019,004	4,395,675			4,314,850	5,100,012

Division of Statistical and Historical Research. Compiled from reports of the Bureau of Census.

[1] In addition there were 377,957 beeves and 243,360 calves slaughtered on a custom basis in 1914, and 553,839 beeves and 387,692 calves for 1919. No corresponding data for 1909, 1921, or 1923.
[2] No data collected by the Bureau of Census for 1914, 1921, or 1923 on farm or retail slaughter.
[3] No data obtainable for retail slaughter in 1919.
[4] Including calves.

TABLE 460.—*Cattle and calves: Stocker and feeder shipments from public stockyards, 1916–1925*

[Thousands—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1916 [1]	221	197	250	262	289	264	171	330	464	682	461	256	3,847
1917	260	213	249	306	401	353	262	330	588	768	729	344	4,803
1918	222	214	319	385	491	393	274	418	604	704	623	366	5,013
1919	364	264	277	391	442	272	236	397	611	839	723	470	5,286
1920	349	240	241	244	323	272	218	314	488	580	553	280	4,102
1921	205	166	236	238	214	209	122	355	395	622	497	245	3,504
1922	233	243	282	235	359	259	223	469	630	864	710	357	4,864
1923	281	210	199	233	300	234	223	480	631	785	624	353	4,553
1924	243	170	174	239	275	201	169	306	580	763	549	309	3,978
1925	207	176	230	271	216	154	243	360	427	717	489	333	3,823

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Complete information for 1916 not obtainable from many markets.

TABLE 461.—*Cattle and calves: Receipts, local slaughter, and stocker and feeder shipments at certain public stockyards, 1925*

[Thousands—i. e., 000 omitted]

Stockyard	January	February	March	April	May	June	July	August	September	October	November	December	Total
Baltimore, Md.:													
Receipts	17	14	17	17	19	16	23	28	29	30	20	17	247
Local slaughter	12	11	14	14	15	13	17	14	15	17	13	13	168
Stocker and feeder shipments	(1)	(1)	(1)	(1)	1	(1)	(1)	1	1	2	1	1	7
Buffalo, N. Y.:													
Receipts	50	40	46	50	57	54	47	50	43	60	53	49	599
Local slaughter	15	13	16	21	19	18	18	18	18	21	18	17	212
Stocker and feeder shipments	1	(1)	(1)	1	1	1	1	2	1	2	2	1	13
Chicago, Ill.:													
Receipts	352	282	332	313	309	287	278	308	309	398	353	350	3,871
Local slaughter	248	201	256	244	244	232	220	238	219	274	252	241	2,869
Stocker and feeder shipments	17	12	13	12	7	6	9	19	28	53	29	26	241
Cincinnati, Ohio:													
Receipts	30	26	31	32	35	34	41	45	43	50	33	32	432
Local slaughter	19	17	19	19	21	22	23	24	20	25	18	19	246
Stocker and feeder shipments	1	1	1	1	1	1	1	4	3	4	2	1	21
Cleveland, Ohio:													
Receipts	23	19	22	24	25	27	31	29	26	25	19	23	293
Local slaughter	20	16	20	22	23	25	28	26	23	22	18	21	264
Stocker and feeder shipments	1	(1)	(1)	(1)	1	(1)	(1)	(1)	(1)	(1)	0	(1)	2
Denver, Colo.:													
Receipts	42	28	38	33	43	46	27	33	42	104	103	48	587
Local slaughter	12	11	14	13	12	15	14	14	15	20	19	16	175
Stocker and feeder shipments	18	7	10	5	20	30	12	12	18	62	54	33	289
Detroit, Mich.:													
Receipts	22	22	27	28	27	28	20	20	21	26	26	30	303
Local slaughter	18	19	23	24	24	25	23	19	20	22	21	24	262
Stocker and feeder shipments	0	(1)	(1)	(1)	(1)	0	1	1	1	2	1	(1)	6
East St. Louis, Ill.:													
Receipts	83	74	87	85	103	118	148	165	152	153	138	132	1,444
Local slaughter	27	30	36	34	44	50	53	62	52	57	54	51	550
Stocker and feeder shipments	7	6	7	6	4	6	15	18	21	23	17	13	143
Fort Worth, Tex.:													
Receipts	91	70	89	101	85	130	147	155	117	117	133	135	1,370
Local slaughter	71	52	58	53	56	105	116	120	91	89	86	90	987
Stocker and feeder shipments	11	9	15	30	15	10	6	16	13	20	25	21	189
Indianapolis, Ind.:													
Receipts	47	37	43	47	46	44	50	46	48	53	40	46	567
Local slaughter	23	17	21	22	21	20	20	19	20	23	18	22	246
Stocker and feeder shipments	2	2	3	3	2	3	5	6	4	6	6	3	45
Jersey City, N. J.:													
Receipts	75	61	60	81	62	55	48	66	57	70	46	64	745
Local slaughter	75	61	60	81	62	55	48	66	57	70	46	64	745
Kansas City, Mo.:													
Receipts	196	160	209	170	154	197	324	358	321	389	279	201	2,958
Local slaughter	117	98	113	102	99	129	179	175	165	179	145	130	1,631
Stocker and feeder shipments	49	43	61	51	32	35	88	107	117	172	95	58	908

[1] Not over 500.

TABLE 461.—*Cattle and calves: Receipts, local slaughter, and stocker and feeder shipments at certain public stockyards, 1925*—Continued

[Thousands—i. e., 000 omitted]

Stockyard	January	February	March	April	May	June	July	August	September	October	November	December	Total
Los Angeles, Calif.:													
Receipts	25	18	20	16	15	19	15	21	20	28	26	24	247
Local slaughter	23	17	19	16	15	19	15	19	21	26	23	22	235
Stocker and feeder shipments	2	1	1	(1)	(1)	(1)	(1)	(1)	1	2	2	2	11
Milwaukee, Wis.:													
Receipts	50	47	68	74	57	45	31	23	32	46	55	60	588
Local slaughter	48	45	65	72	54	42	29	21	29	40	47	55	547
Stocker and feeder shipments	1	0	1	1	1	1	1	1	1	1	1	1	11
Oklahoma City, Okla.:													
Receipts	30	29	38	36	23	32	42	37	31	39	34	33	404
Local slaughter	23	22	26	21	17	27	37	30	26	27	25	25	306
Stocker and feeder shipments	4	4	7	14	3	1	3	3	3	7	5	4	58
Omaha, Nebr.:													
Receipts	138	107	139	124	110	113	120	149	192	226	153	138	1,709
Local slaughter	91	69	91	81	81	83	84	76	104	131	92	97	1,080
Stocker and feeder shipments	23	20	20	17	8	6	18	42	65	90	43	31	383
Pittsburgh, Pa.:													
Receipts	84	62	58	65	71	61	73	81	74	90	83	85	887
Local slaughter	14	11	14	16	17	17	17	15	16	16	12	14	179
Portland, Oreg.:													
Receipts	15	14	17	12	12	16	12	18	18	14	15	13	176
Local slaughter	10	8	12	9	8	10	8	10	10	9	10	8	112
Stocker and feeder shipments	(1)	1	(1)	1	1	1	1	1	1	1	1	1	10
South St. Joseph, Mo.:													
Receipts	53	49	57	47	41	48	70	76	75	96	61	61	734
Local slaughter	38	35	43	35	32	36	54	55	53	57	45	46	529
Stocker and feeder shipments	7	4	6	5	3	4	9	12	16	33	11	8	118
South St. Paul, Minn.:													
Receipts	100	98	126	126	121	106	116	151	135	236	172	149	1,636
Local slaughter	86	81	100	105	100	89	86	82	85	124	103	111	1,152
Stocker and feeder shipments	9	11	15	16	15	12	25	42	38	65	43	31	322
Sioux City, Iowa:													
Receipts	75	61	74	61	59	48	53	85	89	116	85	91	897
Local slaughter	44	35	43	39	39	30	33	35	42	53	43	49	485
Stocker and feeder shipments	13	13	17	14	12	9	12	26	36	50	30	28	260
Wichita, Kans.:													
Receipts	29	35	48	44	28	16	27	39	28	45	44	34	417
Local slaughter	11	12	14	11	9	9	11	12	11	13	13	13	139
Stocker and feeder shipments	12	16	23	30	15	4	7	11	15	24	24	18	199

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool. Local slaughter data from stockyards.

[1] Not over 500.

TABLE 462.—*Dairy cattle: Inspected shipments from public stockyards, 1925*

Origin and destination	January	February	March	April	May	June	July	August	September	October	November	December	Total
MARKET ORIGIN	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Baltimore, Md.	36	50	122	320	374	115	150	236	361	187	200	190	2,341
Boston, Mass.	876	1,047	1,860	1,211	1,116	1,559	1,488	1,702	2,240	1,642	1,545	1,484	17,770
Buffalo, N. Y.	417	281	689	662	604	708	957	1,103	1,556	998	759	694	9,428
Cincinnati, Ohio	672	662	563	798	1,289	896	1,071	1,480	1,193	821	673	447	10,565
Detroit, Mich.	72	104	51	46	104	211	157	123	83	190	83	67	1,291
Fort Worth, Tex.	987	877	742	342	1,343	1,084	1,254	1,346	671	841	1,188	1,605	12,280
Indianapolis, Ind.	275	256	226	217	300	500	700	500	498	400	400	245	4,517
Kansas City, Kans.	234	319	438	650	814	533	672	709	1,708	1,559	703	560	8,899
Louisville, Ky.	123	70	68	155	191	250	305	387	250	404	237	86	2,526
Memphis, Tenn.	113	82	39	84	320	98	258	278	441	261	126	13	2,113
Milwaukee, Wis.	597	586	1,036	908	838	826	866	910	828	894	686	756	9,731
Montgomery, Ala.	284	107	70									19	480
National Stockyards, Ill.	496	334	525	706	971	2,108	3,767	4,435	4,690	3,427	1,522	900	23,881
New Orleans, La.	398	306	316	262	261	308	295	219	396	509	358	281	3,909
Omaha, Nebr.	75	99	99	89	29	47	97	119	110	117	81	117	1,079
Pittsburgh, Pa.	235	181	348	472	529	826	442	512	918	472	318	290	5,543
South St. Paul, Minn.	1,121	1,274	2,716	2,782	3,600	2,541	4,938	4,706	4,480	5,603	2,947	1,877	38,585
All other inspected	640	637	990	778	735	592	700	1,156	1,307	880	892	823	10,130
Total	7,651	7,272	10,898	10,482	13,418	13,202	18,117	19,921	21,730	19,205	12,718	10,454	165,068
STATE DESTINATION													
Illinois	1,075	663	1,125	1,265	2,242	2,084	3,801	3,926	4,975	2,734	1,610	1,090	26,590
Indiana	326	264	254	318	359	921	1,935	2,630	1,682	1,239	876	379	11,183
Iowa	304	568	910	488	1,091	810	1,265	1,540	1,736	2,815	861	719	13,107
Kansas	735	443	552	458	548	466	600	673	804	695	331	266	6,571
Kentucky	161	166	214	193	307	321	339	279	311	501	296	173	3,261
Louisiana	373	306	383	262	289	308	295	219	396	642	358	281	4,112
Maryland	74	50	169	480	548	150	173	480	480	333	220	190	3,347
Massachusetts	773	945	1,737	1,109	971	1,446	1,311	1,569	1,964	1,440	1,317	1,310	15,892
Michigan	72	104	161	172	148	188	157	142	183	265	61	67	1,720
Minnesota	157	234	267	611	628	609	1,124	587	265	1,786	1,117	709	8,094
Missouri	206	333	229	496	1,074	1,173	1,002	918	764	720	336	446	7,697
Nebraska	68	81	141	132	72	47	277	171	259	279	65	137	1,729
New Jersey	512	482	758	190	163	151	290	401	420	390	160	208	4,125
New York	277	227	478	464	569	523	695	970	1,360	700	603	464	7,330
North Dakota	1				30	3		32	30		10		106
Ohio	641	524	452	700	1,104	714	906	1,164	1,095	553	680	330	8,863
Oklahoma	391	528	377	104	143	68	421	462	31	81	685	620	3,911
Oregon		7	5	9		19		17	24	510			591
Pennsylvania	311	260	275	389	543	1,086	789	1,081	1,743	872	745	464	8,558
Rhode Island	97	102	123	99	87	154	135	175	256	198	227	193	1,846

South Dakota	----------	41	29	22	55	39	----------	----------	27	82	80	----------	375
Tennessee	29	59	39	26	27	8	28	44	21	19	30	13	343
Texas	----------	87	----------	74	284	251	298	281	473	206	592	1,050	3,596
Virginia	40	15	222	413	339	150	178	76	247	82	98	17	1,877
Washington	8	6	13	18	6	4	8	12	26	10	28	22	161
Wisconsin	652	530	1,747	1,676	1,675	1,197	1,782	1,804	1,729	1,835	1,069	1,062	16,758
All other	368	247	238	314	116	297	308	268	421	218	263	244	3,302
Total	7,651	7,272	10,898	10,482	13,418	[1] 13,202	18,117	19,921	[2] 21,730	19,205	12,718	10,454	[3] 165,068

Division of Statistical and Historical Research. Compiled from Bureau of Animal Industry inspection records.

[1] Including 15 head shipped to Porto Rico.
[2] Includes 15 shipped to Porto Rico in June and 8 to Spain in September.
[3] Includes 8 head shipped to Spain.

TABLE 463.—*Feeding cattle: Inspected shipments from public stockyards, 1925*

Origin and destination	January	February	March	April	May	June	July	August	September	October	November	December	Total
MARKET ORIGIN	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Chicago, Ill.	16,564	12,225	12,650	15,699	7,242	6,164	8,723	8,404	28,561	52,859	35,813	25,049	229,953
Denver, Colo.	15,387	5,939	9,266	10,834	27,671	29,038	11,144	11,353	17,796	59,834	49,327	33,155	280,744
Fort Worth, Tex.	11,051	8,230	14,240	30,036	17,102	8,907	11,143	16,218	13,953	18,686	24,809	21,560	195,935
Indianapolis, Ind.	4,821	3,665	5,388	6,068	4,187	4,503	5,355	4,967	3,911	3,988	5,320	3,267	55,440
Kansas City, Kans.	45,626	38,501	55,415	45,510	26,362	28,716	74,991	97,252	105,673	161,620	90,661	54,541	824,868
Louisville, Ky.	767	1,037	1,247	1,778	2,255	889	2,459	5,591	3,402	4,580	2,166	967	27,138
National S. Y., Ill.	5,947	5,615	6,838	5,391	4,121	4,067	10,955	14,567	16,431	10,969	15,430	12,624	112,955
Oklahoma, Okla.	5,940	5,554	8,028	15,195	3,215	1,482	3,872	3,741	4,338	10,899	8,136	8,093	78,493
Omaha, Nebr.	22,474	20,069	21,684	16,461	7,577	6,421	19,399	42,445	65,300	92,145	43,698	32,436	390,109
Sioux City, Iowa	13,553	12,994	16,164	13,719	10,211	7,535	10,340	25,816	32,690	49,270	29,690	24,896	246,878
So. St. Joseph, Mo.	3,735	2,405	2,913	2,916	1,542	2,078	5,814	6,975	11,054	19,748	6,403	5,347	70,930
So. St. Paul, Minn.	6,908	8,081	10,272	9,330	7,725	5,811	13,036	27,592	25,989	41,765	28,455	22,635	207,599
Wichita, Kans.	12,428	17,009	23,256	29,903	14,553	3,676	6,839	10,651	15,489	23,834	23,717	18,179	199,534
All other inspected	10,462	8,132	8,338	15,164	6,805	7,863	10,872	19,580	18,265	29,099	26,146	16,742	177,468
Total	175,663	149,456	195,699	218,004	140,568	117,150	194,942	295,152	362,852	579,296	389,771	279,491	3,098,044
STATE DESTINATION													
Colorado	5,354	3,998	3,871	5,107	6,946	9,337	5,560	4,597	6,792	25,939	30,539	22,790	130,830
Illinois	17,132	17,500	22,621	20,984	11,187	12,484	34,670	53,400	63,932	89,158	52,362	41,919	437,349
Indiana	8,526	6,469	11,688	11,862	6,353	5,371	11,094	17,977	15,366	27,479	16,946	11,008	150,139
Iowa	31,509	28,388	30,183	21,197	12,308	12,137	29,675	67,159	76,303	94,745	47,563	36,176	487,334
Kansas	35,852	28,450	39,243	49,803	24,838	11,912	23,505	27,943	43,884	80,089	60,870	41,324	467,713
Kentucky	2,063	1,812	2,325	2,586	2,824	1,336	4,132	8,057	4,129	6,619	3,331	1,575	40,789
Michigan	1,796	1,806	3,396	3,368	3,870	1,771	2,345	2,893	5,922	8,908	9,550	3,053	48,678
Minnesota	1,366	894	1,629	1,380	748	1,931	2,508	3,310	5,627	8,006	6,286	2,267	35,952
Missouri	15,260	14,041	17,938	16,395	9,173	8,833	23,969	25,263	36,797	58,144	29,285	21,738	276,836
Nebraska	22,714	15,435	23,243	21,305	27,373	21,284	24,337	34,620	55,730	88,106	51,977	40,346	426,470
Ohio	5,125	5,535	6,522	5,037	5,720	3,335	5,180	10,535	8,942	20,519	12,300	8,253	97,003
Oklahoma	10,515	9,910	17,199	38,458	10,853	4,021	7,407	13,004	9,810	14,979	15,411	16,283	167,850
Pennsylvania	778	545	453	759	1,386	1,520	2,311	3,215	4,180	5,205	7,077	3,665	31,094
South Dakota	1,881	2,445	2,675	3,932	3,984	2,545	4,320	3,654	3,412	4,686	2,660	2,121	38,315
Texas	8,609	5,556	4,369	6,185	4,814	5,310	6,069	8,522	10,616	17,197	24,488	14,598	116,333
Wisconsin	1,339	1,463	2,309	2,415	1,626	1,075	1,549	2,157	2,604	4,950	3,050	1,619	26,156
All other	5,853	5,209	6,035	7,231	6,565	12,948	6,311	8,846	8,806	24,567	16,076	10,756	119,203
Total	175,663	149,456	195,699	218,004	140,568	117,150	194,942	295,152	362,852	579,296	389,771	279,491	3,098,044

Division of Statistical and Historical Research. Compiled from Bureau of Animal Industry inspection records.

TABLE 464.—*Farm value of cattle other than milk cows, by age groups, United States, January 1, 1910–1926*

Jan. 1	Under 1 year old	1 and under 2 years	2 years and over	Jan. 1	Under 1 year old	1 and under 2 years	2 years and over
	Dollars	*Dollars*	*Dollars*		*Dollars*	*Dollars*	*Dollars*
1910	10.92	17.89	25.96	1919	24.97	41.74	60.41
1911	11.72	19.37	27.90	1920	24.48	41.00	59.08
1912	12.14	20.09	29.12	1921	17.44	29.05	43.50
1913	14.90	25.11	36.38	1922	13.41	22.29	32.31
1914	17.84	29.77	42.77	1923	14.69	24.13	34.14
1915	19.06	31.21	45.92	1924	14.38	24.10	33.34
1916	19.08	31.48	45.81	1925	14.17	23.50	32.57
1917	20.71	33.93	48.63	1926	16.83	27.24	36.48
1918	23.44	38.63	55.62				

Division of Crop and Livestock Estimates.

TABLE 465.—*Milk cows: Estimated price*[1] *per head received by producers, 15th of month, United States, 1910–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	41.18	40.35	41.75	42.22	42.38	43.46	42.86	42.77	42.68	43.20	43.34	43.41	42.47
1911	44.70	44.48	45.42	44.81	44.54	43.86	42.44	42.26	42.22	42.69	42.70	42.72	43.57
1912	42.89	43.40	44.09	45.14	45.63	45.84	45.41	46.11	46.79	47.30	47.38	48.62	45.72
1913	49.51	51.42	54.02	55.34	54.80	55.20	54.80	54.78	55.78	56.47	57.71	57.19	54.75
Average 1910-1913	44.57	44.91	46.32	46.88	46.84	47.09	46.38	46.48	46.87	47.42	47.78	47.98	47.99
1914	57.99	59.09	59.23	59.60	59.85	59.82	59.67	60.72	59.58	59.53	58.77	58.23	59.34
1915	58.47	57.99	58.00	57.78	58.29	58.59	60.31	58.34	58.38	58.76	57.35	56.79	58.25
1916	57.79	57.99	59.51	60.68	60.98	61.63	62.04	61.32	61.41	62.19	62.67	63.18	60.95
1917	63.92	65.93	68.46	72.09	72.78	72.87	72.81	72.53	73.93	75.79	75.00	76.16	71.86
1918	76.54	78.36	80.71	82.45	84.11	84.74	84.97	84.06	85.21	85.41	84.51	85.78	83.07
1919	86.10	86.15	88.15	90.91	93.43	93.84	94.51	94.72	93.42	93.43	93.27	95.54	91.96
1920	94.42	95.27	94.94	95.36	94.56	94.56	91.23	90.50	89.40	85.90	77.56	70.42	89.51
Average 1914-1920	70.75	71.54	72.71	74.12	74.86	75.15	75.08	74.60	74.48	74.43	72.73	72.30	73.56
1921	66.82	63.44	65.37	64.35	62.63	59.89	56.55	55.85	54.33	53.39	53.28	53.30	59.10
1922	52.83	53.54	54.87	54.46	54.76	54.87	54.20	52.67	52.76	52.86	51.62	53.21	53.56
1923	54.01	54.15	55.29	56.14	55.91	56.34	56.22	55.45	56.13	55.51	55.39	54.66	55.43
1924	55.57	55.49	55.88	55.92	56.37	56.45	55.46	55.74	55.54	54.30	55.05	54.00	55.48
1925	54.81	54.79	56.19	56.85	57.88	57.79	57.95	58.26	58.68	60.17	60.69	60.38	57.87

Division of Crop and Livestock Estimates.

[1] As reported by country dealers.

TABLE 466.—*Cattle, beef: Estimated price received by producers per 100 pounds by States, 1925*

State	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	7.30	7.40	6.80	8.10	7.40	6.20	6.50	7.50	6.80	7.90	7.00	8.00	7.24
New Hampshire	6.90	7.30	7.00	8.10	7.10	6.80	7.30	------	7.00	6.00	7.00	6.70	7.02
Vermont	4.20	4.80	5.30	5.00	------	5.50	5.00	4.60	4.80	5.00	4.80	5.20	4.93
Massachusetts	5.50	5.30	5.30	5.80	6.00	6.00	6.70	5.00	5.00	8.00	6.00	4.90	5.79
Rhode Island	5.30	5.60	5.50	5.50	5.50	5.50	6.00	5.00	6.00	5.00	6.50	5.00	5.53
Connecticut	5.50	6.50	4.70	4.60	------	5.80	6.50	------	6.50	7.30	5.80	6.20	5.94
New York	5.40	5.70	5.50	6.00	6.30	5.90	6.40	6.20	5.80	5.90	5.80	5.90	5.90
New Jersey	------	6.00	4.20	5.80	------	8.10	7.20	6.60	7.20	6.50	7.50	5.00	6.41
Pennsylvania	7.30	7.30	7.50	8.20	8.10	8.10	8.20	8.30	7.90	7.80	7.30	7.70	7.81
Ohio	6.70	6.90	7.60	8.20	7.50	7.90	7.50	7.70	7.30	7.20	7.10	7.30	7.41
Indiana	6.70	6.60	6.90	7.30	7.40	7.20	7.50	7.60	7.40	7.20	7.30	7.20	7.19
Illinois	6.90	6.90	7.30	7.20	7.80	7.70	7.70	8.70	7.80	7.60	7.90	7.50	7.58
Michigan	5.70	5.90	6.40	6.60	6.50	6.50	6.60	6.20	6.50	6.00	6.30	6.20	6.28
Wisconsin	4.70	4.50	4.90	5.30	5.30	5.60	5.70	5.50	5.00	5.20	5.20	5.30	5.18
Minnesota	5.20	5.30	6.00	6.20	6.70	6.40	6.40	6.30	6.10	6.40	5.90	5.80	6.06
Iowa	7.40	7.30	8.00	8.90	8.20	8.50	9.30	9.60	9.30	9.30	8.30	8.20	8.52
Missouri	6.70	6.80	6.90	7.30	7.30	7.00	7.20	7.70	7.30	7.60	7.40	7.10	7.19
North Dakota	4.40	4.50	5.20	5.20	5.50	5.40	5.30	5.30	5.10	5.20	4.80	5.20	5.09
South Dakota	5.80	6.20	6.80	7.00	6.90	6.90	7.60	7.90	8.80	6.80	6.50	6.70	6.82
Nebraska	7.10	7.50	8.10	8.30	7.80	8.50	8.90	9.00	8.20	8.10	7.70	7.90	8.09
Kansas	6.50	6.40	7.40	7.80	7.60	7.20	7.60	7.60	6.90	7.10	7.00	7.20	7.19
Delaware	7.30	7.60	7.50	7.30	8.00	8.00	6.90	6.10	7.00	7.10	8.00	7.60	7.37
Maryland	7.10	7.00	8.50	7.50	8.10	7.60	8.30	7.60	7.80	7.00	8.00	7.40	7.66
Virginia	6.10	6.00	6.10	5.90	6.20	6.30	6.10	6.50	6.00	6.10	5.90	6.00	6.10
West Virginia	5.50	6.50	6.20	6.60	7.00	6.30	6.20	6.60	6.20	6.40	6.40	6.30	6.35
North Carolina	5.60	5.20	5.30	5.70	5.40	5.90	5.50	6.20	5.80	5.70	5.50	5.80	5.63
South Carolina	3.90	4.30	4.20	4.60	4.90	4.40	4.60	4.20	4.20	4.40	4.10	4.30	4.34
Georgia	3.50	3.80	4.10	4.30	4.00	4.20	4.10	3.90	3.90	3.90	4.60	4.30	4.05
Florida	3.50	3.70	4.40	4.70	4.20	3.70	4.10	3.10	3.60	4.10	4.60	4.20	3.99
Kentucky	5.40	5.70	5.60	6.10	6.30	5.60	5.90	6.20	6.20	5.70	5.70	6.20	5.88
Tennessee	4.20	4.70	5.20	5.10	4.80	5.10	4.70	4.80	4.70	4.90	4.70	4.80	4.81
Alabama	3.10	3.10	3.50	3.80	3.60	3.60	3.70	3.40	3.60	3.60	3.60	3.60	3.52
Mississippi	3.00	3.50	3.20	3.10	3.60	3.10	2.90	3.10	3.20	3.10	3.50	3.30	3.22
Arkansas	3.30	3.80	3.50	3.90	3.30	3.20	3.60	3.45	3.80	3.90	3.50	3.80	3.59
Louisiana	4.70	4.20	5.30	5.50	4.80	5.50	4.70	4.20	4.50	4.60	5.60	4.50	4.79
Oklahoma	4.30	4.80	5.60	5.40	5.20	4.90	4.60	4.60	4.70	4.90	5.10	5.00	4.92
Texas	4.10	4.00	4.50	4.70	5.00	5.10	5.20	4.50	4.70	4.70	4.40	4.90	4.65
Montana	6.20	5.80	5.90	6.40	6.60	6.30	5.90	6.20	6.00	6.30	6.00	5.60	6.10
Idaho	5.00	5.20	5.70	5.60	6.00	6.00	5.40	5.60	5.40	5.30	5.30	5.30	5.48
Wyoming	5.70	5.00	6.00	6.60	6.90	7.00	6.00	6.70	7.00	6.00	6.80	6.70	6.37
Colorado	5.60	5.60	6.80	7.80	6.90	7.10	6.80	7.10	6.30	6.90	6.40	6.20	6.62
New Mexico	5.10	4.70	5.00	6.30	5.80	5.20	------	6.30	4.70	4.60	4.40	4.60	5.15
Arizona	4.90	5.80	5.50	6.80	6.50	6.20	5.60	5.70	5.30	5.50	5.70	5.10	5.72
Utah	5.40	5.30	5.70	5.30	6.20	6.00	5.70	5.20	5.50	5.60	5.70	5.90	5.65
Nevada	6.00	5.90	7.70	6.60	7.00	6.40	6.20	7.20	6.30	7.00	6.60	6.70	6.63
Washington	5.80	5.60	6.50	6.60	6.50	6.30	6.00	6.60	6.30	5.90	5.60	5.80	6.12
Oregon	6.70	6.00	5.80	6.50	7.30	6.60	5.90	6.80	6.00	6.20	6.40	6.20	6.37
California	6.30	6.80	6.70	7.20	7.10	7.50	6.90	6.50	6.70	6.50	6.60	6.80	6.80
United States	5.63	5.69	6.18	6.55	6.48	6.46	6.55	6.58	6.27	6.31	6.14	6.18	6.25

Division of Crop and Livestock Estimates.

TABLE 467.—*Calves, veal: Estimated price per 100 pounds, received by producers, by States, 1925*

State	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	10.50	10.90	11.20	11.50	10.50	9.20	10.50	9.80	9.90	11.60	10.50	11.00	10.59
New Hampshire	11.30	11.00	9.50	10.30	11.30	10.60	10.50	------	10.60	11.00	11.30	10.90	10.75
Vermont	10.30	10.20	9.20	10.10	10.00	9.10	9.30	9.50	10.00	10.50	11.50	10.30	10.00
Massachusetts	11.50	12.00	11.60	11.80	11.20	11.00	11.60	11.60	11.20	12.50	11.60	11.40	11.53
Rhode Island	12.00	12.20	11.70	12.60	12.60	11.90	12.80	13.00	13.00	12.40	11.60	13.00	12.40
Connecticut	11.50	12.25	12.80	12.30	12.70	12.00	13.00	11.80	13.00	12.50	12.60	12.70	12.43
New York	12.00	11.50	11.50	10.90	9.70	10.10	10.60	11.00	11.70	12.30	12.00	12.20	11.29
New Jersey	12.70	12.20	12.60	13.10	13.80	12.40	12.50	13.30	13.30	13.40	13.70	13.50	13.04
Pennsylvania	11.00	11.30	11.20	11.50	10.40	10.50	10.60	11.40	11.40	11.60	11.60	12.10	11.22
Ohio	11.10	11.50	11.40	10.60	9.50	9.20	10.00	10.50	11.20	11.40	11.10	11.40	10.74
Indiana	10.40	10.90	11.20	10.60	9.00	8.40	9.10	9.70	10.30	10.60	10.30	10.90	10.07
Illinois	9.50	10.70	10.70	9.80	9.20	8.80	9.30	10.30	10.10	10.40	10.00	10.30	9.92
Michigan	10.00	11.20	11.90	10.90	10.30	9.70	10.80	10.50	11.70	12.60	11.20	11.70	10.99
Wisconsin	8.50	9.00	9.80	8.30	7.70	8.10	9.20	9.50	9.86	10.80	10.00	9.40	9.18
Minnesota	7.50	8.00	9.20	8.60	8.10	7.80	8.40	8.40	8.90	9.60	9.20	8.80	8.54
Iowa	8.90	9.30	9.50	8.90	8.40	8.20	9.70	9.00	9.70	10.20	9.50	9.10	9.20
Missouri	8.40	9.20	8.60	8.50	7.80	7.70	7.70	8.20	8.60	9.90	9.20	9.10	8.58
North Dakota	7.10	6.80	7.60	7.40	7.00	7.20	7.50	8.00	7.90	8.00	7.90	7.40	7.48
South Dakota	7.50	8.60	8.80	8.40	8.30	7.70	8.30	8.10	8.20	8.10	8.00	8.30	8.19
Nebraska	8.40	8.50	9.00	8.30	8.30	9.00	8.60	8.40	8.30	8.60	8.80	8.40	8.55
Kansas	7.20	7.60	8.80	7.90	7.50	7.60	7.70	8.10	8.40	8.90	8.60	8.30	8.05
Delaware	12.00	13.60	12.80	13.00	12.10	10.70	12.30	12.70	12.60	12.50	13.60	13.50	12.52
Maryland	12.00	12.40	12.60	11.60	10.00	9.40	10.00	10.90	11.10	12.20	12.50	12.60	11.39
Virginia	9.40	10.00	9.40	9.50	9.30	8.70	8.30	8.30	8.60	9.50	9.30	9.40	9.14
West Virginia	8.00	8.70	9.30	8.70	8.50	8.30	8.70	8.50	8.90	9.50	9.10	9.50	8.82
North Carolina	7.90	7.20	8.40	7.30	7.40	7.50	7.20	9.00	7.50	9.00	8.10	8.60	7.92
South Carolina	5.50	6.30	6.00	5.20	5.90	6.50	6.10	6.70	6.10	5.30	6.10	5.70	5.95
Georgia	5.40	5.40	5.30	6.40	5.40	6.00	5.80	5.40	6.20	5.40	6.50	5.50	5.72
Florida	------	------	6.30	7.00	8.00	6.50	------	4.50	6.00	5.50	4.70	5.70	6.02
Kentucky	8.30	8.80	9.40	8.80	7.90	7.00	7.80	8.10	8.80	9.40	8.60	9.70	8.55
Tennessee	6.70	6.50	6.30	6.30	6.10	6.70	6.20	6.80	6.70	6.80	6.40	6.80	6.52
Alabama	4.50	4.90	4.70	5.60	5.40	5.10	5.60	4.70	4.80	5.00	5.40	5.10	5.07
Mississippi	4.80	5.00	4.80	5.10	5.80	4.10	4.90	5.20	5.30	5.50	5.30	5.20	5.08
Arkansas	4.80	6.00	5.90	6.10	5.30	5.30	6.30	5.50	6.30	5.90	5.30	5.60	5.69
Louisiana	5.20	6.00	6.00	7.20	6.30	6.50	5.90	4.30	5.30	7.00	7.00	5.90	6.05
Oklahoma	5.50	6.70	7.50	7.30	6.50	6.80	6.80	6.40	6.50	7.00	6.30	7.00	6.69
Texas	5.40	5.30	6.30	6.40	7.30	6.20	6.30	6.00	6.10	6.50	5.90	6.50	6.18
Montana	8.60	8.30	8.10	8.70	8.70	8.30	7.90	8.30	8.80	8.30	8.10	8.20	8.36
Idaho	6.50	7.50	8.00	7.40	7.30	7.00	8.60	8.00	7.10	7.50	6.80	7.20	7.41
Wyoming	8.20	7.00	9.40	8.00	10.00	8.50	10.00	10.50	10.20	8.70	9.00	8.60	9.01
Colorado	7.90	7.90	8.80	8.70	9.60	8.60	8.20	8.50	7.90	8.60	8.60	7.80	8.38
New Mexico	------	6.30	------	8.60	8.10	6.70	9.00	9.30	7.00	6.70	5.30	7.00	7.40
Arizona	6.70	7.50	6.60	8.00	7.90	8.60	8.00	7.30	6.60	6.90	7.00	7.10	7.35
Utah	9.30	8.50	8.60	8.80	9.20	8.90	9.70	8.20	8.70	8.40	8.20	8.30	8.73
Nevada	------	9.00	9.30	8.50	------	8.60	9.30	9.00	10.10	10.00	9.60	8.50	9.19
Washington	8.20	8.00	8.30	9.10	8.40	9.10	8.50	9.10	9.10	9.50	8.20	8.60	8.68
Oregon	8.00	9.00	9.20	9.20	10.00	9.00	8.70	10.00	9.30	9.50	9.40	10.30	9.30
California	8.30	8.60	9.20	9.10	9.20	9.50	9.40	9.50	9.00	9.20	8.80	8.90	9.06
United States	8.50	8.87	9.21	8.80	8.35	8.18	8.65	8.80	9.07	9.52	9.16	9.17	8.86

Division of Crop and Livestock Estimates.

TABLE 468.—*Cattle, beef: Estimated price per 100 pounds, received by producers in the United States, 1910–1925*

Year beginning August	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	4.64	4.65	4.64	4.48	4.45	4.58	4.57	4.66	4.67	4.59	4.43	4.28	4.55
1911	4.39	4.43	4.32	4.36	4.37	4.46	4.61	4.75	5.15	5.36	5.23	5.17	4.69
1912	5.37	5.35	5.36	5.22	5.33	5.40	5.55	5.88	6.08	6.01	6.02	5.98	5.60
1913	5.91	5.92	6.05	5.99	5.96	6.04	6.16	6.28	6.29	6.33	6.32	6.38	6.12
Av. 1910–1913	5.08	5.09	5.09	5.01	5.03	5.12	5.22	5.39	5.55	5.57	5.50	5.45	5.24
1914	6.47	6.38	6.23	6.02	6.01	5.99	5.93	5.92	5.96	6.13	6.20	6.07	6.12
1915	6.18	6.06	6.04	5.85	5.75	5.85	5.99	6.37	6.66	6.73	6.91	6.78	6.24
1916	6.51	6.55	6.37	6.44	6.56	6.86	7.36	7.91	8.57	8.70	8.65	8.30	7.31
1917	8.17	8.40	8.35	8.21	8.24	8.33	8.55	8.85	9.73	10.38	10.40	10.07	8.92
1918	9.71	9.63	9.33	9.14	9.28	9.65	10.02	10.34	10.81	10.84	10.20	9.96	9.85
1919	9.82	9.02	8.65	8.65	8.63	8.99	8.98	9.08	9.20	8.97	9.32	8.93	9.00
1920	8.56	8.29	7.77	7.15	6.36	6.32	6.02	6.36	6.08	5.98	5.65	5.40	6.76
Av. 1914–1920	7.92	7.76	7.53	7.35	7.26	7.43	7.55	7.83	8.14	8.25	8.19	7.93	7.74
1921	5.39	4.98	4.81	4.69	4.62	4.75	5.07	5.46	5.53	5.70	5.84	5.76	5.18
1922	5.51	5.44	5.48	5.29	5.28	5.51	5.55	5.62	5.78	5.77	5.82	5.72	5.55
1923	5.60	5.70	5.48	5.23	5.26	5.38	5.47	5.63	5.82	5.94	5.79	5.65	5.57
1924	5.67	5.53	5.52	5.43	5.35	5.63	5.69	6.18	6.55	6.48	6.46	6.55	5.88
1925	6.58	6.29	6.31	6.14	6.18								

Division of Crop and Livestock Estimates.

TABLE 469.—*Calves, veal: Estimated price per 100 pounds, received by producers in the United States, 1910–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	6.41	6.28	6.59	6.54	6.30	6.57	6.37	6.29	6.43	6.41	6.59	6.38	6.42
1911	6.50	6.38	6.48	5.96	5.68	5.72	5.74	5.93	6.11	6.15	6.10	5.98	6.04
1912	6.06	6.07	6.11	6.22	6.23	6.33	6.33	6.62	6.83	6.90	6.77	6.88	6.45
1913	7.06	7.23	7.49	7.38	7.17	7.53	7.46	7.53	7.73	7.72	7.70	7.74	7.48
Av. 1910–1913	6.51	6.49	6.67	6.52	6.34	6.54	6.48	6.59	6.78	6.80	6.74	6.74	6.60
1914	7.89	7.90	7.92	7.68	7.59	7.69	7.80	8.08	8.06	7.97	7.78	7.61	7.83
1915	7.66	7.62	7.50	7.31	7.35	7.53	7.87	7.75	7.80	7.91	7.69	7.61	7.63
1916	7.67	7.87	8.11	8.00	8.08	8.39	8.54	8.59	8.77	8.59	8.60	8.79	8.35
1917	9.15	9.88	9.94	10.49	10.48	10.60	10.77	10.56	11.08	11.10	10.66	10.98	10.51
1918	11.16	11.17	11.33	11.71	11.62	11.88	12.33	12.22	12.57	12.35	11.94	12.31	11.91
1919	12.39	12.18	12.65	12.78	12.11	12.40	13.38	13.43	13.39	12.87	12.65	12.67	12.76
1920	12.89	13.12	12.98	12.72	11.69	11.68	11.44	11.64	11.88	11.64	10.77	9.27	11.80
Av. 1914–1920	9.83	9.96	10.06	10.10	9.85	10.02	10.30	10.32	10.51	10.35	10.01	9.89	10.11
1921	9.34	9.08	9.05	7.73	7.55	7.43	7.37	7.31	7.67	7.61	7.20	7.14	7.81
1922	7.23	7.84	7.85	7.26	7.28	7.67	7.49	7.67	8.10	8.17	7.92	7.78	7.68
1923	8.05	8.37	8.20	7.78	7.69	7.66	8.00	8.00	8.34	8.37	7.85	7.75	7.99
1924	8.36	8.51	8.43	8.33	8.14	7.91	7.88	7.94	8.09	8.22	7.89	7.84	8.12
1925	8.50	8.87	9.21	8.80	8.35	8.18	8.65	8.80	9.07	9.52	9.16	9.17	8.85

Division of Crop and Livestock Estimates.

TABLE 470.—*Cattle and calves: Monthly average price per 100 pounds, Chicago, 1909-1925*

GOOD BEEF STEERS[1]

Year	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Average[2]
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	6.00	5.85	6.10	6.10	6.45	6.45	6.45	6.70	6.75	6.60	6.45	6.20	6.34
1910	6.20	6.35	7.35	7.55	7.50	7.50	7.10	6.85	6.80	6.60	6.20	6.00	6.83
1911	6.15	6.15	6.20	6.10	5.95	6.05	6.30	6.95	6.80	6.75	6.70	6.65	6.40
1912	6.85	6.60	7.20	7.65	7.95	8.00	7.90	8.50	9.15	7.90	8.10	7.85	7.80
1913	7.80	8.25	8.30	8.15	8.00	8.15	8.25	8.30	8.50	8.40	8.25	8.20	8.21
Av. 1909-1913	6.60	6.64	7.03	7.11	7.17	7.23	7.20	7.46	7.60	7.25	7.14	6.98	7.12
1914	8.45	8.30	8.35	8.50	8.40	8.60	8.80	9.10	9.35	9.05	8.60	8.35	8.65
1915	8.05	7.50	7.65	7.70	8.35	8.80	9.20	9.05	8.95	8.80	8.70	8.35	8.43
1916	8.35	8.35	8.75	9.10	9.50	9.85	9.25	9.45	9.40	9.75	10.15	10.00	9.33
1917	10.15	10.50	11.25	11.75	11.90	12.15	12.35	12.70	13.10	11.70	11.10	11.40	11.67
1918	12.10	12.00	12.60	14.70	15.40	15.85	16.05	15.75	16.00	14.80	15.05	14.90	14.60
1919	15.80	15.95	16.05	15.85	15.00	13.55	15.60	16.45	15.50	16.15	15.10	14.35	15.45
1920	13.95	13.05	13.10	12.30	12.25	14.95	14.68	14.30	14.95	14.61	11.65	10.08	13.32
Av. 1914-1920	10.98	10.81	11.11	11.41	11.54	11.96	12.28	12.40	12.46	12.12	11.48	11.06	11.64
1921	8.94	8.57	9.41	8.22	8.33	7.94	8.09	8.32	7.67	7.59	7.52	7.31	8.16
1922	7.37	7.60	8.01	7.94	8.20	8.83	9.48	9.62	9.98	10.53	9.42	8.89	8.82
1923	9.17	8.86	8.83	9.01	9.41	9.94	10.05	10.48	10.12	9.90	9.36	8.92	9.50
1924	9.14	9.33	9.59	9.83	9.83	9.53	9.91	9.54	9.47	9.57	9.18	8.98	9.49
1925	9.28	9.54	10.06	10.12	10.03	10.28	11.29	11.26	10.73	10.28	9.74	9.71	10.19
Av. 1921-1925	8.78	8.78	9.18	9.02	9.16	9.30	9.76	9.84	9.59	9.57	9.04	8.76	9.23

CALVES

1909	7.60	6.85	7.00	6.30	6.35	6.50	7.00	7.50	7.60	8.10	7.40	8.25	7.20
1910	8.60	8.65	9.00	7.85	7.35	7.85	7.60	7.75	8.50	8.65	8.75	8.50	8.25
1911	8.75	8.40	7.40	6.60	7.25	7.60	7.40	8.00	8.75	8.60	8.35	7.85	7.91
1912	8.75	7.50	8.00	7.40	7.75	8.00	8.75	9.75	11.25	10.00	9.85	10.25	8.94
1913	9.75	9.85	10.50	8.50	9.25	9.75	10.40	11.50	11.25	10.50	10.35	10.75	10.20
Av. 1909-1913	8.69	8.25	8.38	7.33	7.59	7.94	8.23	8.90	9.47	9.17	8.94	9.12	8.50
1914	11.00	10.75	9.00	8.85	9.50	9.40	10.60	11.00	11.40	10.65	10.35	8.65	10.10
1915	9.85	10.35	10.00	8.40	9.15	9.60	10.25	11.50	11.25	10.85	10.15	9.65	10.08
1916	10.15	10.65	9.65	8.75	10.40	11.25	11.40	12.00	12.40	11.50	11.85	11.75	10.98
1917	13.40	12.65	13.40	12.50	13.25	13.40	13.00	15.15	15.00	14.85	13.50	15.25	13.78
1918	15.35	14.15	15.25	14.50	13.50	16.02	16.67	17.28	18.63	16.83	16.86	16.01	15.92
1919	15.62	15.75	15.01	14.31	14.66	16.37	17.88	19.62	20.52	18.05	17.60	16.56	16.83
1920	17.74	16.73	16.73	14.22	12.12	13.68	13.98	15.08	16.39	14.18	13.74	10.39	14.58
Av. 1914-1920	13.30	13.00	12.72	11.65	11.80	12.82	13.40	14.52	15.08	13.84	13.44	12.61	13.18
1921	11.49	11.02	10.33	8.12	8.66	8.72	9.73	9.39	10.71	8.68	7.70	7.81	9.36
1922	8.36	9.16	8.26	6.97	8.46	8.89	8.90	10.88	11.92	9.65	8.91	9.42	9.15
1923	10.08	10.63	9.32	8.68	9.51	9.31	9.60	10.01	9.98	9.39	7.82	8.69	9.42
1924	10.16	9.82	9.24	8.57	8.64	8.00	8.57	9.62	9.72	9.24	8.28	9.04	9.08
1925	9.82	10.92	10.35	8.76	8.79	8.87	10.91	11.94	12.18	11.19	10.60	11.30	10.47
Av. 1921-1925	9.98	10.31	9.50	8.22	8.81	8.76	9.54	10.37	10.90	9.63	8.66	9.25	9.50

Division of Statistical and Historical Research.

Figures prior to July, 1920, for good beef steers, and prior to June, 1918, for calves, compiled from Chicago Drovers Journal Yearbook; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Bulk of sales, 1,100 pounds up. July 1, 1925 classification changed to 1,100-1,500 pounds.

[2] Simple average of monthly average prices.

TABLE 471.—*Cattle, choice steers for chilled beef: Average price per 100 pounds by months, Buenos Aires, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1909	$3.00	$3.03	$3.07	$3.00	$3.07	$3.20	$3.41	$3.64	$3.95	$4.38	$4.21	$3.81	$3.48
1910	3.34	3.30	3.61	3.61	3.54	3.64	3.71	3.98	4.28	4.62	4.32	3.47	3.78
1911	3.57	3.61	3.84	3.81	3.84	3.95	4.15	4.18	4.21	4.18	4.01	3.47	3.90
1912	3.58	3.78	3.62	3.73	3.72	3.71	3.71	4.05	4.15	4.15	4.15	4.08	3.87
1913	4.22	4.19	4.44	4.93	5.26	5.02	5.10	5.12	5.12	5.22	5.35	5.18	4.93
Av. 1909–1913	3.54	3.58	3.72	3.82	3.89	3.90	4.02	4.19	4.34	4.51	4.41	4.00	3.99
1914	4.96	5.27	5.47	5.69	5.47	5.67	5.73	6.01	6.21	6.29	5.86	5.80	5.70
1915	5.72	5.61	5.56	5.65	5.44	5.54	5.97	6.71	7.45	7.52	7.11	6.59	6.24
1916	6.93	7.15	6.91	6.93	6.84	6.31	6.42	6.54	6.84	7.16	6.95	6.74	6.81
1917	6.69	6.56	6.49	6.31	6.46	6.34	6.37	6.40	6.16	6.54	6.03	5.55	6.32
1918	5.39	5.83	5.88	6.06	6.04	5.98	6.21	7.49	8.41	8.49	8.03	8.06	6.82
1919	7.96	7.75	7.74	7.85	8.03	7.21	8.60	8.92	9.63	9.20	8.25	7.72	8.24
1920	7.96	7.97	8.20	8.06	7.88	7.56	7.47	7.42	7.15	7.27	6.28	5.98	7.43
Av. 1914–1920	6.52	6.59	6.61	6.65	6.59	6.37	6.68	7.07	7.41	7.50	6.93	6.63	6.80
1921	5.93	5.95	5.71	5.41	4.40	4.10	3.69	4.12	4.74	4.96	4.90	4.39	4.86
1922	4.68	4.53	3.97	3.30	3.31	3.90	4.41	4.50	4.24	3.84	3.30	3.25	3.94
1923	3.08	3.25	3.82	4.06	3.83	3.56	3.62	3.36	3.82	4.10	3.48	3.23	3.60
1924	3.19	3.40	3.61	3.50	3.56	3.76	4.51	4.93	5.15	5.95	5.62	5.42	4.38
1925	5.54	5.54	6.20	6.20	6.51	6.48	6.54	6.72	6.91	6.25	5.66	5.32	6.16
Av. 1921–1925	4.48	4.53	4.66	4.49	4.32	4.36	4.55	4.73	4.97	5.02	4.59	4.32	4.59

Division of Statistical and Historical Research. Calculated from quotations in the Review of the River Plate. Prices prior to May, 1924, originally quoted on basis of price per head supplemented from 1916 by price per pound of dressed carcass weight. Calculations assume average dressed weight of 730 pounds or live weight of 1,259 pounds. Live-weight quotations per pound from May, 1924. Converted from Argentine currency at average monthly rate of exchange.

TABLE 472.—*Cattle and calves: Trend of average farm prices and average market prices at Chicago, 1910–1925*

Year	Farm price		Average market price at Chicago		Price relatives, 1913=100			
					Farm price		Market price	
	Beef cattle, weighted average	Veal calves, simple average	Beef cattle, simple average	Veal calves, simple average	Beef cattle	Veal calves	Beef cattle	Veal calves
	Dollars	*Dollars*	*Dollars*	*Dollars*				
1910	4.76	6.41	6.83	8.25	80.5	85.7	83.2	81.0
1911	4.45	6.06	6.40	7.91	75.3	81.0	78.0	77.6
1912	5.15	6.45	7.80	8.94	87.1	86.2	95.0	87.7
1913	5.91	7.48	8.21	10.19	100.0	100.0	100.0	100.0
1914	6.24	7.83	8.65	10.10	105.6	104.7	105.4	99.1
1915	6.00	7.63	8.43	10.08	101.5	102.0	102.7	98.9
1916	6.47	8.33	9.33	10.98	109.5	111.4	113.6	107.8
1917	8.16	10.47	11.67	13.78	138.1	140.0	142.1	135.2
1918	9.44	11.88	14.60	16.92	159.7	158.8	177.8	156.2
1919	9.56	12.74	15.45	16.85	161.8	170.3	188.2	165.4
1920	8.32	11.81	13.32	14.58	140.8	157.9	162.2	143.1
1921	5.46	7.87	8.16	9.36	92.4	105.2	99.4	91.9
1922	5.48	7.69	8.82	9.15	92.7	102.8	107.4	89.8
1923	5.57	7.99	9.50	9.42	94.2	106.8	115.7	92.4
1924	5.59	8.13	9.49	9.08	94.6	108.7	115.6	89.1
1925	6.26	8.86	10.19	10.47	105.9	118.4	124.1	102.7

Division of Statistical and Historical Research. Farm prices from Division of Crop and Livestock Estimates; market prices compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 473.—*Cattle and calves: Average price per 100 pounds at six markets, by months, 1925*

CHICAGO

Classification	January	February	March	April	May	June	Average, January to June
Slaughter cattle:							
Beef steers (1,100 lbs. up)—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Choice and prime	11.94	11.53	11.60	11.36	11.16	11.46	11.51
Good	11.09	10.55	10.76	10.51	10.45	10.81	10.70
Medium	9.20	8.65	9.54	9.49	9.48	9.69	9.34
Common	6.72	6.69	7.79	7.95	8.02	7.90	7.51
Beef steers (1,100 lbs. down)—							
Choice and prime	13.29	12.29	12.03	11.70	11.56	11.75	12.10
Good	11.84	10.86	11.05	10.76	10.74	11.01	11.04
Medium	9.23	8.63	9.49	9.45	9.42	9.53	9.29
Common	6.66	6.48	7.53	7.75	7.87	7.52	7.30
Canner and cutter	4.74	4.61	5.59	5.95	6.30	5.92	5.52
Light yearling steers and heifers (800 lbs. down), good and prime	11.38	10.72	10.86	10.68	10.68	10.96	10.88
Heifers, 850 lbs. up (good and choice)	9.07	9.16	9.74	9.79	9.90	10.06	9.62
All weights (common and medium)	5.86	6.49	7.06	7.13	7.42	7.46	6.90
Cows—							
Good and choice	6.29	6.37	6.86	7.37	7.64	7.66	7.03
Common and medium	4.41	4.66	5.01	5.31	5.55	5.26	5.03
Canner and cutter	3.03	3.32	3.58	3.62	3.80	3.39	3.46
Bulls—							
Good and choice [1]	5.40	5.38	5.59	6.17	6.48	6.40	5.90
Canner to medium (canner and bologna)	4.09	4.22	4.26	4.58	5.02	4.66	4.47
Slaughter calves:							
Medium to choice—							
190 lbs. down	10.72	11.94	11.24	9.49	9.42	9.56	10.40
190–260 lbs.	8.91	9.90	9.46	8.02	8.16	8.18	8.77
260 lbs. up	6.32	6.74	6.80	6.06	6.22	6.60	6.46
Cull and common—							
190 lbs. down	7.20	7.99	7.60	6.29	6.37	6.85	7.05
190 lbs. up	5.53	5.66	5.46	5.12	5.24	5.08	5.35
Feeder and stocker cattle and calves:							
Steers—							
Common to choice (750 lbs. up)	6.46	6.88	7.57	7.57	7.55	6.92	7.16
Common to choice (750 lbs. down)	6.20	6.55	7.25	7.05	7.14	6.73	6.82
Inferior (all weights)	4.32	4.75	5.64	5.38	5.34	4.99	5.07
Cows and heifers (common to choice)	3.84	4.42	4.90	4.90	5.06	4.76	4.65

Classification	July	August	September	October	November	December	Average, July to December
Slaughter cattle:							
Beef steers—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1,500 lbs. up, good and choice	13.05	14.40	14.81	14.60	12.86	12.02	13.62
1,100–1,500 lbs.—							
Choice	13.65	14.94	15.42	15.38	13.64	12.44	14.24
Good	12.03	12.32	12.64	12.67	11.34	10.66	11.94
Medium	9.78	9.26	9.36	9.32	9.00	9.24	9.33
Common	7.57	6.86	6.83	7.00	7.01	7.65	7.15
1,100 lbs. down—							
Choice	13.53	14.62	14.78	14.51	13.28	11.98	13.78
Good	11.88	11.88	12.01	11.76	11.02	10.37	11.49
Medium	9.57	8.72	8.81	8.87	8.73	8.89	8.93
Common	7.07	6.28	6.39	6.60	6.78	7.33	6.74
Canner and cutter	5.14	4.70	4.71	4.94	4.90	5.33	4.95
Light yearling steers and heifers (850 lbs. down), good and choice	12.00	12.23	12.11	11.74	11.03	10.42	11.59
Heifers—							
(850 lbs. up), good and choice	10.57	10.33	10.03	9.60	9.15	9.08	9.78
All weights, common and medium	7.55	6.79	6.53	6.14	6.07	6.69	6.63
Cows—							
Good and choice	7.80	7.78	7.54	7.14	7.15	7.44	7.48
Common and medium	4.87	4.86	4.78	4.64	4.84	5.27	4.88
Canner and cutter	3.31	3.32	3.35	3.42	3.65	3.91	3.49

[1] Beef yearlings excluded.

TABLE 473.—*Cattle and calves: Average price per 100 pounds at six markets, by months, 1925*—Continued

CHICAGO—Continued

Classification	July	August	September	October	November	December	Average, July to December
Slaughter cattle—Continued.							
Bulls—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Beef, 1,500 lbs. up, good and choice	5.86	5.80	5.81	5.84	5.82	6.02	5.86
Beef, 1,500 lbs. down (yearlings excluded), good and choice	6.41	6.12	6.16	6 12	6.15	6.39	6.22
Canner to medium, canner and bologna	4.56	4.12	4.11	4.33	4.49	4.79	4.40
Slaughter calves (milk-fed excluded):							
Medium to choice	7.00	6.29	6.31	6.62	6.48	6.61	6.55
Cull and common	4.36	4.20	4.25	4.25	4.40	4.88	4.39
Vealers—							
Medium to choice	10.91	11.94	12.18	11.19	10.60	11.30	11.35
Cull and common	7.55	7.72	7.75	7.12	7.02	7.82	7.50
Feeder and stocker cattle and calves:							
Steers, 800 lbs. up—							
Good and choice	7.76	8.20	8.02	8.02	8.18	8.20	8.06
Common and medium	6.52	6.70	6.33	6.45	6.63	6.82	6.58
Steers, 800 lbs. down—							
Good and choice	7.50	7.78	7.62	7.78	7.94	7.96	7.76
Common and medium	6.12	6.18	5.91	6.03	6.32	6.55	6.18
Heifers, common to choice	5.15	5.16	4.97	5.21	5.32	5.38	5.20
Cows, common to choice	3.82	3.96	3.86	4.00	4.06	4.12	3.97

EAST ST LOUIS

Classification	January	February	March	April	May	June	Average, January to June
Slaughter cattle:							
Beef steers (1,100 lbs. up)—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Choice and prime	12.00	11.40	11.42	11.13	10.98	11.36	11.38
Good	10.64	10.40	10.76	10.42	10.13	10.61	10.49
Medium	8.22	8.28	9.38	9.40	9.37	9.67	9.05
Common	6.02	6.38	7.68	7.84	7.70	7.58	7.20
Beef steers (1,100 lbs. down)—							
Choice and prime	12.98	12.26	11.93	11.57	11.23	11.60	11.93
Good	11.35	10.81	10.93	10.73	10.46	10.89	10.86
Medium	8.69	8.44	9.38	9.38	9.37	9.56	9.14
Common	5.84	6.13	7.44	7.65	7.56	7.36	7.00
Canner and cutter	3.92	4.35	5.35	5.70	5.53	5.29	5.02
Light yearling steers and heifers (800 lbs. down), good and prime	10.64	10.54	10.81	10.66	10.56	10.67	10.65
Heifers—							
850 lbs. up (good and choice)	7.62	7.84	8.71	9.34	9.38	9.16	8.68
All weights (common and medium)	4.89	5.05	6.22	6.92	7.04	6.48	6.10
Cows—							
Good and choice	6.04	6.45	7.22	7.53	7.46	7.02	6.95
Common and medium	4.60	4.91	5.60	5.88	5.80	5.24	5.34
Canner and cutter	2.95	3.15	3.56	3.60	3.67	3.26	3.36
Bulls—							
Good and choice [1]	5.39	5.55	5.71	5.95	6.25	6.14	5.83
Canner to medium (canner and bologna)	3.71	3.92	4.00	4.15	4.35	4.13	4.04
Slaughter calves:							
Medium to choice—							
190 lbs. down	9.78	9.04	9.93	8.96	8.50	8.23	9.22
190–260 lbs.	9.22	9.50	9.27	8.11	7.57	7.33	8.50
260 lbs. up	5.65	5.75	6.35	6.66	6.70	6.61	6.29
Cull and common—							
190 lbs. down	5.31	5.50	5.80	5.57	5.25	4.88	5.38
190 lbs. up	3.31	3.50	4.10	4.32	4.14	3.93	3.88
Feeder and stocker cattle and calves:							
Steers—							
Common to choice (750 lbs. up)	5.81	6.47	6.76	6.87	6.72	6.38	6.50
Common to choice (750 lbs. down)	5.49	6.17	6.51	6.68	6.60	6.25	6.28
Inferior (all weights)	3.77	4.28	4.68	4.62	4.48	4.24	4.34
Cows and heifers (common to choice)	3.78	4.24	4.74	5.00	4.84	4.26	4.48

[1] Beef yearlings excluded.

TABLE 473.—*Cattle and calves: Average price per 100 pounds at six markets, by months, 1925*—Continued

EAST ST. LOUIS—Continued

Classification	July	August	September	October	November	December	Average, July to December
Slaughter cattle:							
Beef steers—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1,500 lbs. up, good and choice	12.75	13.66	13.92	13.82	12.73	11.77	13.11
1,100–1,500 lbs.—							
Choice	13.17	14.25	14.61	14.53	13.48	12.32	13.73
Good	12.01	12.31	12.50	12.32	11.42	10.61	11.86
Medium	9.66	9.24	9.13	8.99	8.60	8.73	9.06
Common	6.88	6.36	5.83	5.94	6.19	6.90	6.35
1,100 lbs. down—							
Choice	13.07	14.07	14.35	14.28	13.40	12.32	13.58
Good	11.91	12.09	12.22	12.08	11.27	10.57	11.69
Medium	9.52	9.03	8.87	8.74	8.40	8.57	8.86
Common	6.64	6.11	5.59	5.68	5.93	6.65	6.10
Canner and cutter	4.76	4.51	3.96	4.11	4.52	5.15	4.50
Light yearling steers and heifers (850 lbs. down), good and choice	11.55	12.01	11.70	11.21	10.71	10.35	11.26
Heifers—							
850 lbs. up, good and choice	8.98	8.74	8.51	8.13	8.04	8.30	8.45
All weights, common and medium	5.99	5.66	5.55	5.38	5.26	5.45	5.55
Cows—							
Good and choice	6.90	6.99	6.75	6.66	6.62	6.88	6.80
Common and medium	4.89	4.74	4.75	4.72	4.82	5.17	4.85
Canner and cutter	3.13	3.14	3.21	3.26	3.59	3.92	3.38
Bulls—							
Beef, 1,500 lbs. up, good and choice	5.58	5.44	5.46	5.75	5.81	6.13	5.70
Beef, 1,500 lbs. down (yearlings excluded), good and choice	6.03	5.86	5.80	6.00	6.03	6.26	6.00
Canner to medium, canner and bologna	4.19	3.95	3.95	4.08	4.15	4.61	4.16
Slaughter calves (milk fed excluded):							
Medium to choice	7.25	6.98	6.72	7.00	6.70	6.50	6.86
Cull and common	4.56	4.52	4.47	4.75	4.52	4.50	4.55
Vealers—							
Medium to choice	9.13	10.07	11.20	11.11	10.56	11.11	10.53
Cull and common	5.29	5.46	6.15	6.92	6.30	7.12	6.21
Feeder and stocker cattle and calves:							
Steers, 800 lbs. up—							
Good and choice	7.46	7.62	7.33	7.56	7.62	8.03	7.60
Common and medium	5.62	5.50	5.29	5.46	5.62	6.30	5.63
Steers, 800 lbs. down—							
Good and choice	7.21	7.49	7.14	7.31	7.38	7.78	7.38
Common and medium	5.62	5.45	5.10	5.21	5.38	6.05	5.47
Heifers, common to choice	4.50	4.65	4.89	5.11	5.12	5.21	4.91
Cows, common to choice	3.48	3.40	3.46	3.72	3.83	4.13	3.67

FORT WORTH

Classification	January	February	March	April	May	June	Average, January to June
Slaughter cattle:							
Beef steers (1,100 lbs. up)—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Medium	6.77	6.91	7.14	7.54	7.55	7.33	7.21
Common	4.79	5.17	5.68	6.16	6.12	5.85	5.63
Beef steers (1,100 lbs. down)—							
Good	8.06	8.21	8.30	8.57	8.55	8.39	8.35
Medium	6.42	6.77	7.01	7.38	7.43	7.18	7.03
Common	4.42	4.92	5.39	5.86	5.88	5.58	5.34
Canner and cutter	3.01	3.23	3.71	4.21	4.25	4.09	3.75
Light yearling steers and heifers (800 lbs. down) good and prime	9.16	9.06	8.69	9.14	9.44	8.78	9.04
Heifers—							
850 lbs. up (good and choice)	6.88	7.00	7.30	7.67	7.56	7.53	7.32
All weights (common and medium)	4.12	4.27	4.86	5.28	5.12	5.03	4.78
Cows—							
Good and choice	4.51	4.67	5.57	5.98	6.04	5.65	5.40
Common and medium	3.13	3.27	4.00	4.04	4.13	4.06	3.77
Canner and cutter	2.16	2.27	2.51	2.41	2.45	2.64	2.41

TABLE 473.—*Cattle and calves: Average price per 100 pounds at six markets, by months, 1925*—Continued

FORT WORTH—Continued

Classification	January	February	March	April	May	June	Average, January to June
Slaughter cattle—Continued.							
Bulls—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Good and choice [1]	4.10	4.12	4.30	4.38	4.38	4.02	4.22
Canner to medium (canner and bologna)	3.02	3.00	3.20	3.25	3.25	2.96	3.11
Slaughter calves:							
Medium to choice—							
190 lbs. down	7.34	7.77	8.33	8.45	8.14	7.60	7.94
190–260 lbs.	6.72	6.90	7.14	7.16	6.73	6.60	6.88
260 lbs. up	5.78	5.88	6.10	6.26	6.20	6.12	6.06
Cull and common—							
190 lbs. down	4.54	4.99	5.49	5.37	5.31	5.00	5.12
190 lbs. up	3.47	3.67	3.93	3.98	4.01	4.01	3.84
Feeder and stocker cattle and calves:							
Steers—							
Common to choice (750 lbs. up)	5.28	5.72	6.14	6.09	6.20	6.12	5.92
Common to choice (750 lbs. down)	5.01	5.44	5.88	5.86	6.01	5.88	5.68
Inferior (all weights)	2.88	3.08	3.72	3.88	3.88	3.88	3.55
Cows and heifers (common to choice)	3.30	3.48	3.81	3.88			
Calves (common to choice)	5.01	5.32	5.31	5.25			

Classification	July	August	September	October	November	December	Average, July to December
Slaughter cattle:							
Beef steers—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1,500 lbs. up, good and prime							
1,100–1,500 lbs.—							
Choice							
Good							
Medium	7.50	7.45	7.38	7.38	7.38	7.39	7.41
Common	5.35	5.20	5.12	5.12	5.12	5.23	5.19
1,100 lbs. down—							
Choice							
Good	8.75	8.75	8.75	8.75	8.75	8.66	8.74
Medium	7.26	7.20	7.12	7.12	7.12	7.13	7.16
Common	5.10	4.95	4.88	4.88	4.88	4.99	4.95
Canner and cutter	3.44	3.25	3.25	3.25	3.25	3.46	3.32
Light yearling steers and heifers (850 lbs. down), good and choice	8.94						
Heifers—							
850 lbs. up, good and choice	7.55	7.61	7.65	7.60	7.40	7.44	7.54
All weights, common and medium	4.93	4.80	4.90	4.88	4.64	4.86	4.84
Cows—							
Good and choice	5.36	5.12	5.22	5.22	5.03	5.18	5.19
Common and medium	3.76	3.46	3.70	3.65	3.58	3.83	3.66
Canner and cutter	2.31	2.27	2.42	2.61	2.62	2.95	2.53
Bulls—							
Beef, 1,500 lbs. up, good and choice							
Beef, 1,500 lbs. down (yearlings excluded), good and choice	3.88	3.88	3.88	3.97	4.00	4.15	3.96
Canner to medium, canner, and bologna	2.88	2.88	2.88	2.97	3.00	3.29	2.98
Slaughter calves (milk fed excluded):							
Medium to choice	6.36	6.68	6.74	6.82	5.91	6.85	6.56
Cull and common	3.93	4.15	4.30	4.43	3.97	4.62	4.23
Vealers—							
Medium to choice	7.47	7.74	8.27	8.19	7.52	7.61	7.80
Cull and common	4.81	4.96	5.28	5.29	4.84	4.97	5.02
Feeder and stocker cattle and calves:							
Steers, 800 lbs. up—							
Good and choice						7.40	
Common and medium	5.04	5.00	5.07	5.21	5.49	5.74	5.26
Steers, 800 lbs. down—							
Good and choice				6.88	6.88	7.12	
Common and medium	4.68	4.62	4.84	5.00	5.00	5.34	4.91
Heifers, common to choice							
Cows, common to choice	3.03	3.00	2.88	2.88	3.05	3.37	3.04
Calves (steers), common to choice							

[1] Beef yearlings excluded.

TABLE 473.—*Cattle and calves: Average price per 100 pounds at six markets, by months, 1925*—Continued

KANSAS CITY

Classification	January	February	March	April	May	June	Average, January to June
Slaughter cattle:							
Beef steers (1,100 lbs. up)—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Choice and prime	11. 50	11. 20	11. 29	10. 92	10. 67	10. 93	11. 08
Good	10. 24	10. 02	10. 26	9. 97	9. 75	10. 05	10. 05
Medium	8. 37	8. 32	8. 76	9. 01	8. 86	8. 94	8. 71
Common	5. 85	6. 26	6. 91	7. 30	7. 36	6. 98	6. 78
Beef steers (1,100 lbs. down)—							
Choice and prime	12. 46	12. 06	11. 84	11. 26	11. 07	11. 27	11. 66
Good	10. 84	10. 48	10. 50	10. 29	10. 08	10. 29	10. 41
Medium	8. 47	8. 36	8. 82	9. 06	8. 99	9. 04	8. 79
Common	5. 78	6. 22	6. 80	7. 22	7. 12	6. 76	6. 65
Canner and cutter	4. 04	4. 47	4. 90	5. 34	5. 12	4. 57	4. 74
Light yearling steers and heifers (800 lbs. down), good and prime	10. 76	10. 61	10. 60	10. 42	10. 32	10. 69	10. 57
Heifers—							
850 lbs. up (good and choice)	8. 47	8. 63	9. 05	9. 33	9. 24	9. 33	9. 01
All weights (common and medium)	5. 12	5. 44	6. 09	6. 61	6. 62	6. 53	6. 07
Cows—							
Good and choice	5. 85	6. 08	6. 38	7. 36	7. 24	6. 80	6. 62
Common and medium	4. 25	4. 55	4. 70	5. 33	5. 31	4. 81	4. 82
Canner and cutter	2. 84	3. 16	3. 26	3. 43	3. 52	3. 32	3. 26
Bulls—							
Good and choice [1]	4. 91	5. 08	5. 38	5. 67	6. 16	5. 64	5. 47
Canner to medium (canner and bologna)	3. 55	3. 70	3. 85	3. 99	4. 51	4. 07	3. 94
Slaughter calves:							
Medium to choice—							
190 lbs. down	8. 84	9. 34	8. 99	8. 01	8. 00	8. 03	8. 54
190–260 lbs.	7. 83	8. 06	7. 92	7. 17	6. 90	6. 89	7. 46
260 lbs. up	5. 47	5. 80	6. 11	6. 17	6. 44	6. 33	6. 05
Culi and common—							
190 lbs. down	5. 55	6. 11	5. 90	5. 26	5. 35	5. 28	5. 58
190 lbs. up	3. 56	4. 06	4. 48	4. 31	4. 29	4. 20	4. 15
Feeder and stocker cattle and calves:							
Steers—							
Common to choice (750 lbs. up)	6. 26	6. 51	6. 94	7. 08	7. 06	6. 54	6. 73
Common to choice (750 lbs. down)	6. 04	6. 38	6. 86	7. 02	7. 00	6. 46	6. 63
Inferior (all weights)	3. 59	4. 19	4. 68	4. 84	4. 70	4. 22	4. 37
Cows and heifers(common to choice)	4. 18	4. 53	4. 74	5. 29	5. 31	4. 90	4. 82
Calves (common to choice)	5. 58	5. 84	6. 07	6. 15	6. 22	5. 93	5. 96

Classification	July	August	September	October	November	December	Average, July to December
Slaughter cattle:							
Beef steers—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1,500 lbs. up, good and choice	12. 29	13. 08	13. 49	13. 85	12. 78	11. 46	12. 81
1,100–1,500 lbs.—							
Choice	12. 88	14. 00	14. 19	14. 36	13. 37	11. 89	13. 45
Good	11. 33	11. 42	11. 38	11. 51	10. 80	10. 13	11. 10
Medium	9. 22	8. 57	8. 29	8. 34	8. 05	8. 38	8. 48
Common	6. 56	6. 04	5. 73	5. 92	5. 88	6. 48	6. 10
1,100 lbs. down—							
Choice	12. 81	13. 91	14. 09	14. 11	13. 13	11. 73	13. 30
Good	11. 26	11. 39	11. 26	11. 22	10. 61	9. 95	10. 95
Medium	9. 03	8. 37	8. 08	8. 14	8. 02	8. 25	8. 32
Common	6. 30	5. 73	5. 59	5. 73	5. 74	6. 26	5. 90
Canner and cutter	4. 06	3. 78	3. 70	3. 94	4. 04	4. 48	4. 00
Light yearling steers and heifers (850 lbs. down), good and choice	11. 55	11. 43	11. 15	11. 26	10. 83	10. 17	11. 07
Heifers—							
(850 lbs. up), good and choice	9. 71	9. 52	9. 15	9. 15	8. 86	8. 61	9. 17
All weights, common and medium	6. 48	6. 16	5. 50	5. 45	5. 35	5. 79	5. 79
Cows—							
Good and choice	6. 77	6. 90	6. 56	6. 54	6. 60	6. 91	6. 71
Common and medium	4. 42	4. 34	4. 38	4. 44	4. 55	4. 98	4. 52
Canner and cutter	3. 04	3. 12	3. 18	3. 28	3. 45	3. 73	3. 30

[1] Beef yearlings excluded.

TABLE 473.—*Cattle and calves: Average price per 100 pounds at six markets, by months, 1925*—Continued

KANSAS CITY—Continued

Classification	July	August	September	October	November	December	Average, July to December
Slaughter cattle—Continued.							
Bulls—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Beef, 1,500 lbs. up, good and choice	5.01	4.90	4.91	5.12	4.96	5.41	5.05
Beef, 1,500 lbs down (yearlings excluded), good and choice	5.53	5.38	5.27	5.38	5.23	5.94	5.46
Canner to medium, canner and bologna	3.77	3.67	3.67	3.88	3.92	4.28	3.86
Slaughter calves (milk fed excluded):							
Medium to choice	6.31	5.70	6.14	5.55	5.48	6.50	5.95
Cull and common	3.73	3.44	3.69	3.54	3.50	4.25	3.69
Vealers—							
Medium to choice	8.46	9.34	10.27	9.22	8.64	8.81	9.12
Cull and common	5.72	5.68	6.23	5.39	5.17	5.76	5.66
Feeder and stocker cattle and calves:							
Steers, 800 lbs. up—							
Good and choice	7.37	7.54	7.58	7.88	7.86	8.36	7.76
Common and medium	5.31	5.39	5.62	5.94	6.02	6.75	5.84
Steers, 800 lbs. down—							
Good and choice	7.17	7.16	7.11	7.51	7.56	8.16	7.44
Common and medium	5.08	5.01	5.11	5.32	5.44	6.18	5.36
Heifers, common to choice	5.32	5.49	5.61	5.75	5.78	5.96	5.65
Cows, common to choice	3.63	3.62	3.67	3.75	3.80	4.11	3.76
Calves (steers), common to choice	5.76	5.93	6.30	6.55	6.59	6.90	6.34

OMAHA

Classification	January	February	March	April	May	June	Average, January to June
Slaughter cattle:							
Beef steers (1,100 lbs. up)—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Choice and prime	11.52	11.11	11.10	10.81	10.60	10.93	11.01
Good	10.30	9.93	10.16	9.98	9.66	10.03	10.01
Medium	8.35	8.29	8.80	8.98	8.85	8.94	8.70
Common	5.74	6.17	6.91	7.24	7.36	7.15	6.76
Beef steers (1,100 lbs. down)—							
Choice and prime	12.57	11.93	11.75	11.12	10.88	11.18	11.57
Good	11.01	10.41	10.62	10.28	10.04	10.28	10.44
Medium	8.41	8.29	8.91	9.04	9.02	9.03	8.78
Common	5.64	6.03	6.81	7.16	7.21	7.00	6.64
Canner and cutter	3.92	4.25	4.94	5.39	5.34	4.96	4.80
Light yearling steers and heifers (800 lbs. down) good and prime	10.76	10.44	10.45	10.31	10.08	10.50	10.42
Heifers—							
850 lbs. up (good and choice)	8.74	8.56	9.06	9.46	9.34	9.44	9.10
All weights (common and medium)	5.28	5.44	6.10	6.63	6.71	6.70	6.14
Cows—							
Good and choice	5.92	6.00	6.72	7.38	7.30	7.17	6.75
Common and medium	4.24	4.43	4.94	5.22	5.27	5.06	4.86
Canner and cutter	3.01	3.15	3.52	3.38	3.53	3.46	3.34
Bulls—							
Good and choice [1]	4.98	4.85	5.28	5.76	6.14	5.56	5.43
Canner to medium (canner and bologna)	3.65	3.70	3.86	3.98	4.26	3.96	3.90
Slaughter calves:							
Medium to choice—							
190 lbs. down	8.91	9.49	9.05	8.15	8.58	8.11	8.72
190–260 lbs.	7.59	8.06	7.82	7.07	7.15	6.82	7.42
260 lbs. up	5.80	6.28	6.18	6.17	6.72	6.36	6.25
Cull and common—							
190 lbs. down	5.71	6.09	5.73	5.26	5.58	5.22	5.60
190 lbs. up	3.68	4.15	4.10	4.18	4.37	4.19	4.11
Feeder and stocker cattle and calves:							
Steers—							
Common to choice (750 lbs. up)	6.15	6.50	7.05	7.05	7.06	6.67	6.75
Common to choice (750 lbs. down)	6.10	6.41	6.92	6.93	6.96	6.57	6.65
Inferior (all weights)	3.78	3.97	4.62	4.81	4.80	4.52	4.42
Cows and heifers (common to choice)	3.81	4.10	4.84	5.00	4.96	4.88	4.60
Calves (common to choice)	5.33	5.55	6.04	6.12	6.08	6.00	5.85

[1] Beef yearlings excluded.

TABLE 473.—*Cattle and calves: Average price per 100 pounds at six markets, by months, 1925*—Continued

OMAHA—Continued

Classification	July	August	September	October	November	December	Average, July to December
Slaughter cattle:							
Beef steers—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1,500 lbs. up, good and choice	12.32	13.20	13.38	13.45	12.50	11.36	12.70
1,100–1,500 lbs—							
Choice	12.85	13.99	14.19	14.09	13.10	11.79	13.34
Good	11.38	11.54	11.44	11.21	10.69	10.05	11.05
Medium	9.36	8.68	8.43	8.20	8.16	8.32	8.52
Common	6.83	6.14	6.00	5.84	5.90	6.31	6.17
1,100 lbs. down—							
Choice	12.80	13.87	14.03	13.90	13.09	11.74	13.24
Good	11.25	11.40	11.26	11.02	10.60	9.97	10.92
Medium	9.18	8.52	8.19	8.06	8.04	8.17	8.36
Common	6.65	5.96	5.73	5.66	5.76	6.15	5.98
Canner and cutter	4.44	3.90	3.82	3.81	3.97	4.49	4.07
Light yearling steers and heifers (850 lbs. down), good and choice	11.59	11.98	11.58	11.47	10.88	10.05	11.26
Heifers—							
(850 lbs. up) good and choice	10.05	10.28	9.58	9.37	9.08	8.62	9.50
All weights, common and medium	6.61	6.17	5.69	5.54	5.55	5.74	5.88
Cows—							
Good and choice	7.12	7.09	6.93	6.95	7.04	6.97	7.02
Common and medium	4.69	4.43	4.38	4.37	4.74	5.10	4.62
Canner and cutter	3.14	3.04	3.11	3.20	3.55	4.00	3.34
Bulls—							
Beef, 1,500 lbs. up, good and choice	5.10	4.77	4.79	5.12	5.21	5.61	5.10
Beef, 1,500 lbs. down (yearlings excluded), good and choice	5.35	5.06	5.04	5.37	5.46	5.85	5.36
Canner to medium, canner and bologna	3.90	3.70	3.68	3.76	3.82	4.43	3.88
Slaughter calves (milk fed excluded):							
Medium to choice	6.68	6.20	5.93	5.92	5.87	6.45	6.18
Cull and common	4.02	3.79	3.91	4.04	4.00	4.31	4.01
Vealers—							
Medium to choice	8.18	8.05	9.42	10.32	9.52	8.63	9.02
Cull and common	5.43	5.48	6.28	6.62	6.15	5.76	5.95
Feeder and stocker cattle and calves:							
Steers, 800 lbs. up—							
Good and choice	7.62	7.92	8.11	8.07	8.12	8.37	8.04
Common and medium	5.79	5.53	5.77	5.84	6.09	6.65	5.94
Steers, 800 lbs. down—							
Good and choice	7.38	7.50	7.59	7.47	7.68	8.12	7.62
Common and medium	5.52	5.23	5.33	5.27	5.52	6.19	5.51
Heifers, common to choice	5.39	5.46	5.56	5.62	5.44	5.38	5.48
Cows, common to choice	3.67	3.50	3.50	3.60	3.76	3.86	3.65
Calves (steers), common to choice	5.88	5.87	6.17	6.14	6.33	6.58	6.16

SOUTH ST. PAUL

Classification	January	February	March	April	May	June	Average, January to June
Slaughter cattle:							
Beef steers (1,100 lbs. up)—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Good	9.50	9.56	9.92	9.95	9.50	9.77	9.70
Medium	7.69	7.84	8.46	8.63	8.40	8.74	8.29
Common	5.40	5.73	6.63	7.08	7.08	7.14	6.51
Beef steers (1,100 lbs. down)—							
Good	10.50	10.42	10.46	10.22	9.70	10.11	10.24
Medium	7.94	7.99	8.44	8.69	8.54	8.78	8.40
Common	5.12	5.64	6.40	6.88	6.96	6.97	6.33
Canner and cutter	3.32	3.90	4.50	5.07	5.12	5.12	4.50
Light yearling steers and heifers (800 lbs. down), good and prime	9.88	9.88	10.06	10.13	10.12	10.16	10.04
Heifers—							
850 lbs. up (good and choice)	7.66	7.86	8.18	8.52	8.67	8.62	8.25
All weights (common and medium)	4.54	4.81	5.18	5.86	6.17	6.12	5.45
Cows—							
Good and choice	5.48	5.73	6.22	6.89	7.06	6.87	6.38
Common and medium	4.03	4.21	4.70	5.08	5.27	5.10	4.73
Canner and cutter	2.79	2.97	3.20	3.27	3.41	3.32	3.16

[1] Beef yearlings excluded.

TABLE 473.—*Cattle and calves: Average price per 100 pounds at six markets, by months, 1925*—Continued

SOUTH ST. PAUL—Continued

Classification	January	February	March	April	May	June	Average, January to June
Slaughter cattle—Continued.							
Bulls—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Good and choice [1]	5.40	5.44	5.36	5.51	5.62	5.50	5.47
Canner to medium (canner and bologna)	3.78	3.96	3.88	3.97	4.24	4.12	3.99
Slaughter calves:							
Medium to choice—							
190 lbs. down	7.10	8.54	8.62	7.70	7.81	7.34	7.85
190–260 lbs.	6.02	6.84	7.09	6.85	7.08	6.61	6.75
260 lbs. up	4.75	4.75	5.25	5.45	5.95	5.78	5.32
Cull and common—							
190 lbs. down	4.04	4.80	4.73	4.51	5.08	4.92	4.68
190 lbs. up	3.00	3.00	3.50	3.89	4.00	3.82	3.54
Feeder and stocker cattle and calves:							
Steers—							
Common to choice (750 lbs. up)	5.82	6.22	6.66	6.75	6.75	6.13	6.39
Common to choice (750 lbs. down)	5.41	5.89	6.44	6.50	6.50	5.76	6.08
Inferior (all weights)	3.65	4.02	4.36	4.48	4.50	4.00	4.17
Cows and heifers (common to choice)	3.25	3.30	3.92	4.37	4.42	4.12	3.90
Calves (common to choice)	4.75	4.76	5.27	5.38	5.38	5.38	5.15

Classification	July	August	September	October	November	December	Average, July to December
Slaughter cattle:							
Beef steers—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1,500 lbs. up							
1,100–1,500 lbs.—							
Choice							
Good	10.98	11.45	11.01	11.19	10.70	9.87	10.87
Medium	9.24	8.43	7.73	7.95	8.01	8.07	8.24
Common	7.02	5.98	5.59	5.80	6.07	6.32	6.13
1,100 lbs. down—							
Choice							
Good	11.06	11.34	10.86	10.84	10.36	9.64	10.68
Medium	9.04	8.31	7.63	7.70	7.68	7.82	8.03
Common	6.70	5.62	5.28	5.42	5.55	5.98	5.76
Canner and cutter	4.77	4.13	4.00	4.00	3.72	3.75	4.06
Light yearling steers and heifers (850 lbs. down), good and choice	10.69	11.12	10.88	10.84	10.57	9.64	10.62
Heifers—							
850 lbs. up, good and choice	8.65	8.71	8.31	8.08	8.45	8.25	8.41
All weights, common and medium	5.78	5.56	5.22	4.91	5.18	5.50	5.36
Cows—							
Good and choice	6.42	6.12	5.96	5.74	6.02	6.25	6.08
Common and medium	4.42	4.04	4.03	3.88	4.14	4.44	4.16
Canner and cutter	3.00	2.82	2.84	2.89	3.11	3.43	3.02
Bulls—							
Beef, 1,500 lbs. up, good and choice	5.29	4.98	5.05	5.18	5.20	5.52	5.20
Beef, 1,500 lbs. down (yearlings excluded), good and choice	5.67	5.44	5.48	5.50	5.50	5.68	5.54
Canner to medium, canner and bologna	4.06	3.60	3.74	3.85	3.99	4.28	3.92
Slaughter calves (milk-fed excluded):							
Medium to choice	6.45	6.36	6.00	5.56	5.48	5.48	5.89
Cull and common	3.89	3.84	3.88	3.61	3.50	3.60	3.72
Vealers—							
Medium to choice	8.70	9.47	9.66	9.40	8.77	8.63	9.10
Cull and common	5.80	5.81	5.74	5.63	5.58	5.61	5.70
Feeder and stocker cattle and calves:							
Steers, 800 lbs. up—							
Good and choice	6.87	7.04	7.02	7.31	7.38	7.37	7.16
Common and medium	5.61	5.45	5.42	5.64	5.75	5.69	5.59
Steers, 800 lbs. down—							
Good and choice	6.57	6.54	6.41	7.03	7.06	7.17	6.80
Common and medium	5.28	5.27	5.26	5.32	5.32	5.42	5.31
Heifers, common to choice	4.18	4.08	4.28	4.62	4.89	4.94	4.50
Cows, common to choice	3.58	3.44	3.50	3.50	3.56	3.62	3.53
Calves (steers), common to choice	5.25	5.25	5.15	5.25	5.32	5.38	5.27

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Beef yearlings excluded.

TABLE 474.—*Cattle: Prices of live steers in Chicago, wholesale prices of beef in Chicago and New York, and retail prices of certain beef cuts, 1913–1925*

Year	Live steers good to choice, Chicago	Beef, wholesale				Beef, retail											
		Good native steer, Chicago		Native sides, New York		Sirloin steak						Round steak					
						Chicago		New York		Average, leading cities		Chicago		New York		Average, leading cities	
		Price per pound	Wholesale as per cent of live steer price	Price per pound	Wholesale as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price
	Cents	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*
1913	8.5	13.0	153	12.5	147	23.2	273	25.9	305	25.4	299	20.2	238	25.0	294	22.3	262
1914	9.0	13.6	151	13.5	150	25.3	283	26.8	298	25.9	288	22.4	249	26.3	292	23.6	262
1915	8.7	12.9	148	12.6	145	25.7	295	26.8	308	25.7	295	22.1	254	26.0	299	23.0	264
1916	9.6	13.8	144	13.4	140	26.8	279	28.1	293	27.3	284	22.6	235	27.4	285	24.5	255
1917	12.8	16.7	130	16.4	128	29.3	229	32.6	255	31.5	246	25.8	202	32.6	255	29.0	227
1918	16.4	22.1	135	20.9	127	35.3	215	40.9	249	38.9	237	32.3	197	42.3	258	36.9	225
1919	17.5	23.3	133	21.5	123	38.3	219	43.9	251	41.7	238	34.3	196	45.7	261	38.9	222
1920	14.5	23.0	159	20.8	143	43.0	297	46.9	323	43.7	301	36.3	250	47.3	326	39.5	272
1921	8.8	16.3	185	14.8	168	38.0	432	42.1	478	38.8	441	31.0	352	41.4	469	34.4	391
1922	9.5	15.0	158	13.8	145	37.2	392	41.1	433	37.4	394	29.1	306	39.6	417	32.3	340
1923	10.0	15.8	158	14.5	145	39.8	398	42.5	425	39.1	391	30.7	307	40.8	408	33.5	335
1924	9.7	17.1	176	15.1	156	41.2	425	43.0	443	39.6	408	32.1	331	41.4	427	33.8	348
1925	10.6	18.0	170	15.9	150	43.7	412	45.4	428	40.6	383	34.2	323	43.1	407	34.7	327
1925																	
January	9.3	18.3	197	15.0	161	41.0	441	43.3	466	38.7	416	31.2	335	41.3	444	32.8	353
February	9.5	18.3	193	14.1	148	40.6	427	43.0	453	38.5	405	30.3	319	40.9	431	32.7	344
March	10.2	18.3	179	15.4	151	41.6	408	43.8	429	39.6	388	31.7	311	41.3	405	33.6	329
April	10.0	18.3	183	16.1	161	41.7	417	44.4	444	40.4	404	32.2	322	42.2	422	34.6	346
May	9.7	17.8	184	15.6	161	43.6	449	44.7	461	40.8	421	33.2	342	42.2	435	35.0	361
June	10.5	17.5	167	14.8	141	43.0	410	44.3	422	41.0	390	34.0	324	42.0	400	35.2	335
July	11.6	17.8	153	16.1	139	45.3	391	47.1	406	42.2	364	36.6	316	45.2	390	36.5	315
August	12.1	18.5	153	16.1	133	46.0	380	47.7	394	42.0	347	37.4	309	45.7	378	36.2	299
September	12.4	18.5	149	17.3	140	46.4	374	47.8	385	41.6	335	36.7	296	45.1	364	35.6	287
October	11.9	18.5	156	17.1	144	45.6	383	47.6	400	41.2	346	36.1	303	44.8	376	35.4	297
November	10.6	17.8	168	15.5	146	44.8	423	45.5	429	40.3	380	35.3	333	43.0	406	34.4	325
December	10.0	17.0	170	16.9	169	44.7	447	45.7	457	40.3	403	35.2	352	43.2	432	34.4	344

Year	Beef, retail—Continued											
	Chuck roast						Rib roast					
	Chicago		New York		Average, leading cities		Chicago		New York		Average, leading cities	
	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price	Price per pound	Retail as per cent of live steer price
	Cents	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*
1913	15.4	181	16.0	188	16.0	188	19.5	229	21.8	256	19.8	233
1914	16.9	188	16.8	187	16.7	186	20.7	230	22.1	246	20.4	227
1915	16.7	192	16.5	190	16.1	185	21.3	245	22.2	255	20.1	231
1916	16.6	173	17.3	180	17.1	178	21.9	228	23.2	242	21.2	221
1917	20.3	159	21.3	166	20.9	163	24.1	188	27.4	214	24.9	195
1918	25.9	158	28.5	174	26.6	162	29.7	181	35.3	215	30.7	187
1919	26.7	153	29.9	171	27.0	154	31.4	179	39.1	223	32.5	186
1920	25.9	179	28.9	199	26.2	181	33.7	232	40.5	279	33.2	229
1921	20.7	235	23.1	262	21.2	241	30.2	343	36.4	414	29.1	331
1922	19.1	201	21.4	225	19.7	207	28.8	303	35.3	372	27.6	291
1923	19.9	199	22.4	224	20.2	202	30.2	302	36.3	363	28.4	284
1924	21.0	216	23.1	238	20.8	214	31.6	326	36.9	380	28.8	297
1925	23.1	218	24.4	230	21.6	204	38.6	317	38.8	366	29.6	279
1925												
January	21.1	227	23.3	251	20.5	220	31.3	337	37.4	402	28.5	306
February	20.7	218	23.3	245	20.4	215	31.5	332	37.3	393	28.4	299
March	21.6	212	23.7	232	21.0	206	32.3	317	37.6	369	29.1	285
April	22.5	225	23.9	239	21.7	217	33.1	331	38.2	382	29.7	297
May	22.6	233	23.7	244	22.1	228	33.3	343	38.3	395	29.8	307
June	22.7	216	23.3	222	21.8	208	33.8	322	38.1	363	29.8	284
July	24.0	207	25.0	216	22.4	193	34.4	297	39.6	341	30.4	262
August	24.3	201	25.2	208	22.1	183	35.1	290	39.9	330	30.3	250
September	24.6	198	25.2	203	22.0	177	34.5	278	39.9	322	30.1	243
October	24.8	208	26.2	220	22.0	185	34.9	293	40.8	343	30.0	252
November	24.3	229	25.2	238	21.6	204	34.3	324	39.2	370	29.5	278
December	24.5	245	25.3	253	21.5	215	34.3	343	38.9	389	29.6	296

Division of Statistical and Historical Research.

TABLE 475.—*Cattle and calves: Monthly slaughter under Federal inspection, 1907–1925*

CATTLE

Calendar year.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1907	717, 935	569, 641	555, 476	634, 541	620, 114	588, 465	640, 535	667, 827	696, 271	801, 110	595, 692	545, 758	7, 633, 365
1908	642, 632	527. 369	519, 851	403, 445	490, 623	525, 134	563, 403	640, 332	767, 698	821, 193	680, 616	636, 964	7, 279, 260
1909	586, 542	489, 905	550, 719	508, 267	536, 101	543, 597	608, 030	652, 172	782, 369	892, 348	798, 967	764, 850	7, 713, 807
1910	632, 131	527, 361	599, 076	532, 904	551, 179	620, 862	614, 962	678, 668	795, 525	831, 406	779, 527	643, 999	7, 807, 600
1911	626, 060	535, 853	562, 077	499, 422	599, 084	614, 447	591, 317	719, 510	691, 720	828, 316	745, 810	605, 480	7, 619, 096
1912	674, 995	515, 056	563, 882	522, 278	562, 506	511, 135	507, 695	631, 623	643, 617	808, 361	690, 973	620, 457	7, 252, 578
1913	621, 744	489, 842	483, 693	554, 709	546, 781	556, 321	592, 959	582, 081	656, 410	701, 402	601, 937	590, 482	6, 978, 361
1914	585, 164	498, 991	476, 406	474, 177	473, 806	490, 302	505, 244	518, 165	650, 427	743, 686	658, 189	682, 180	6, 756, 737
1915	572, 748	466, 122	551, 991	507, 442	534, 457	573, 851	596, 142	590, 302	641, 411	736, 149	702, 134	680, 646	7, 153, 395
1916	622, 507	549, 956	597, 059	475, 566	564, 207	648, 209	562, 448	742, 534	790, 737	941, 049	971, 801	844, 385	8, 310, 458
1917	822, 932	662, 776	647, 251	654, 336	815, 071	844, 168	783, 559	865, 883	957, 253	1, 195, 587	1, 098, 796	1, 002, 540	10, 350. 152
1918	895, 275	784, 834	828, 216	914, 899	781, 755	829, 690	1, 019, 982	987, 237	1, 142, 754	1, 251, 041	1, 233, 081	1, 159, 785	11, 828, 549
1919	1, 119, 200	701, 353	640, 288	622, 123	720, 684	644, 463	854, 797	859, 409	855, 292	1, 073, 220	1, 040, 074	960, 181	10, 091, 084
1920	832, 231	630, 995	683, 139	637, 575	626, 304	656, 602	661, 172	685, 763	825, 484	843, 136	858, 946	667, 344	8, 608, 691
1921	689, 506	526, 177	620, 936	590, 943	569, 979	640, 186	579, 028	680, 419	689, 043	749, 756	686, 115	586, 192	7, 608, 280
1922	641, 513	569, 153	673, 701	589, 916	702, 203	724, 418	697, 303	761, 125	796, 377	883, 949	859, 413	778, 736	8, 677, 807
1923	745, 109	633, 710	687, 634	696, 757	762, 461	726, 962	724, 896	820, 514	809, 810	952, 795	845, 618	756, 250	9, 162, 516
1924	812, 459	669, 051	665, 156	689, 190	773, 334	669, 579	764, 104	785, 981	870, 171	1, 016, 289	951, 887	925, 874	9, 593, 075
1925	855, 179	656, 427	736, 313	731, 258	748, 514	731, 886	862, 053	811, 144	866, 183	1, 066, 528	860, 662	926, 892	9, 853, 039

CALVES

1907	128, 178	99, 283	122, 451	205, 410	224, 405	203, 916	220, 697	205, 840	197, 811	186, 620	126, 141	103, 635	2, 024, 387
1908	116, 868	87, 891	137, 120	196, 976	205, 225	210, 692	192, 034	184, 719	187, 400	180, 317	142, 560	116, 471	1, 958, 273
1909	134, 800	95, 221	149, 150	200, 106	228, 192	235, 741	213, 217	195, 623	205, 468	205, 064	171, 288	155, 147	2, 189, 017
1910	132, 412	116. 899	188, 441	221, 557	251, 746	237, 937	198, 425	206, 000	197, 135	187, 567	168, 323	131, 845	2, 238, 287
1911	135, 440	120, 845	180, 386	218, 434	243, 247	232, 261	198, 471	206, 971	184, 421	179, 838	155, 135	128, 094	2, 183, 543
1912	152, 064	126, 432	179, 813	244, 700	258, 331	228, 659	201, 085	192, 355	189, 785	193, 250	162, 837	148, 643	2, 277, 954
1913	139, 281	117, 987	141, 551	212, 374	204, 723	194, 613	182, 000	149, 292	158, 518	156, 562	124, 004	121, 509	1, 902, 414
1914	122. 486	99, 865	145. 226	185, 619	183, 052	186, 771	153, 448	129, 359	129, 637	135, 009	107, 279	119, 211	1, 696, 962
1915	108, 642	96, 096	156, 205	198, 515	205, 039	197, 462	161, 997	141, 289	138, 557	148, 061	141, 400	125, 439	1, 818, 702
1916	129, 231	143, 262	189, 472	233, 412	267, 422	228, 480	177, 605	206, 783	185, 928	203, 905	217, 370	184, 533	2, 367, 403
1917	203, 250	181, 581	211, 501	286, 191	344, 598	276, 501	276, 710	254, 711	271, 514	339, 324	280, 910	215, 930	3, 142, 721
1918	210, 444	192, 769	259, 854	351, 387	357, 353	312, 171	354, 721	273, 597	316, 816	306, 096	272, 076	249, 109	3, 456, 393
1919	294, 812	209, 834	295, 388	383, 414	391, 304	327, 060	399, 966	318, 769	317, 984	374, 619	344, 238	311, 639	3, 969, 027
1920	305, 125	283, 052	390, 053	382, 420	368, 614	431, 079	342, 765	332, 349	347, 578	314, 791	315, 971	244, 573	4, 058, 370
1921	282, 043	253, 692	360, 410	365, 541	366, 798	369, 696	324, 046	303, 796	321, 193	309, 136	292, 172	259, 045	3, 807, 568
1922	288, 487	279, 359	391, 439	365, 323	401, 340	388, 919	329, 445	344, 968	353, 095	382, 837	347, 711	308, 646	4, 181. 569
1923	351, 382	296, 698	367, 979	400, 322	466, 792	387, 905	378, 513	402, 643	338, 093	416, 388	370, 070	323, 538	4, 500, 323
1924	372, 859	345, 593	376, 709	465, 720	469, 692	408, 130	421, 292	374, 480	419, 113	473, 468	392, 395	415, 579	4, 935, 030
1925	394, 453	378, 070	466, 092	496, 306	480, 581	473, 487	472, 819	438, 772	422, 487	486, 011	398, 012	445, 471	5, 352, 561

Bureau of Animal Industry.

TABLE 476.—*Beef and beef products: International trade, average 1911-1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1911–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	144	940,300	5	1,083,747	12	1,490,744	4	1,917,631
Australia	437	301,882	[1] 1,392	[1] 269,083	[1] 6,498	[1] 155,722	----------	[1] 283,619
Brazil	48,989	171	13,829	80,459	5,852	184,137	----------	180,583
Canada	3,091	6,448	2,958	27,327	2,467	24,380	431	25,522
China	85	8,787	2,141	3,434	1,444	6,314	1,018	8,641
Denmark	18,815	43,485	10,900	51,737	11,217	37,103	11,858	13,632
Netherlands	256,296	326,176	159,756	163,264	199,164	202,545	224,746	243,595
New Zealand	398	80,543	411	117,610	437	141,494	613	131,137
Rumania	4	2,566	----------	----------	544	4,061	553	9,939
United States	17,668	213,722	36,694	214,733	19,356	192,368	18,104	190,259
Uruguay	152	119,675	71	247,984	----------	357,292	----------	----------
PRINCIPAL IMPORTING COUNTRIES								
Austria	----------	----------	16,138	6,453	----------	----------	----------	----------
Austria-Hungary	12,983	3,762	----------	----------	----------	----------	----------	----------
Belgium	6,034	1,577	81,122	3,923	150,377	4,341	238,399	13,994
British India	7,434	773	7,268	893	8,043	1,227	8,336	1,285
British Malaya	----------	----------	2,373	535	2,635	615	5,653	568
Chile	6,636	298	308	106	852	167	----------	----------
Cuba	37,822	----------	47,245	----------	54,808	----------	55,617	----------
Czechoslovakia	----------	----------	2,023	763	9,461	17	2,473	----------
Egypt	476	----------	4,694	16	4,697	22	5,754	48
Finland	14,755	[3]	2,117	376	4,317	34	3,199	----------
France	41,318	62,361	112,143	37,611	164,069	51,865	253,480	34,217
Germany	212,150	942	180,254	2,630	230,906	1,295	296,410	1,727
Hongkong	----------	----------	1,328	325	1,608	433	1,885	417
Irish Free State	----------	----------	----------	----------	----------	----------	10,937	7,873
Italy	131	[2]	36,611	225	28,784	546	31,498	557
Japan	9,002	----------	66,334	----------	70,204	----------	73,474	----------
Norway	20,203	2,337	24,748	1,614	21,182	1,605	22,766	759
Philippine Islands	15,837	----------	9,608	----------	6,438	----------	9,175	----------
Poland	----------	----------	295	309	571	312	3,154	1,433
Spain	966	38	10,013	[2]	11,615	----------	[4] 6,633	[4] 203
Sweden	12,912	17,285	19,066	15,787	15,623	7,685	20,911	6,684
Switzerland	9,052	440	5,323	286	6,937	722	5,510	502
Union of South Africa	17,622	292	8,048	[3] 1,753	12,183	1,536	10,503	9,603
United Kingdom	1,252,292	27,595	1,471,707	26,633	1,788,994	31,463	1,777,833	44,808
Other countries	20,468	872	7,252	5,639	7,949	10,466	10,023	5,744
Total	2,044,172	2,162,336	2,344,145	2,365,255	2,849,214	2,910,511	3,110,950	3,134,890

Division of Statistical and Historical Research. Official sources.

[1] Year beginning July 1. [2] Not separately stated. [3] Less than 500 pounds. [4] Six months.

TABLE 477.—*Beef, frozen: Stocks in cold-storage warehouses and meat-packing establishments, United States, 1916–1925*

[Thousand pounds—i. e., 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1916	126,374	132,266	124,954	118,279	90,176	73,025	55,109	58,867	58,303	66,319	92,815	158,148
1917	262,442	196,909	169,793	154,193	118,391	103,007	109,351	108,729	100,453	119,221	179,032	235,664
1918	333,572	292,114	276,114	268,015	212,725	190,684	154,638	180,962	185,144	194,469	224,312	229,668
1919	298,818	294,514	265,293	221,725	184,586	163,913	162,639	159,279	162,069	166,244	184,196	223,311
1920	261,812	252,037	223,145	196,890	170,455	130,619	95,297	77,469	67,010	58,461	68,663	89,718
1921	120,245	119,965	122,402	114,063	100,672	88,836	76,523	66,262	50,204	44,296	49,014	63,183
1922	68,495	61,322	55,785	50,772	45,311	37,548	31,593	27,727	28,210	34,611	47,929	73,027
1923	91,805	89,272	75,004	65,292	54,522	41,207	34,385	24,112	24,625	27,599	43,772	71,024
1924	82,384	79,944	76,769	68,075	52,941	41,784	37,028	29,435	29,135	23,599	45,357	76,731
1925	114,634	111,947	101,599	87,684	67,271	46,887	36,452	26,970	22,879	19,755	27,008	50,436
Av. 1921–1925	95,513	92,330	86,432	77,177	64,149	51,252	43,196	34,901	31,011	30,976	42,716	66,881

Cold Storage Report Section.

TABLE 478.—*Beef, cured and in process of cure: Stocks in cold-storage warehouses and meat-packing establishments, United States, 1916–1925*

[Thousand pounds—i. e., 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1916	21,443	20,852	26,959	25,811	21,869	17,324	18,915	18,589	18,450	21,653	30,013	37,958
1917	37,301	35,891	37,669	30,601	29,409	30,831	35,679	32,401	30,290	31,246	32,223	38,325
1918	39,243	38,793	37,575	34,106	29,217	24,804	21,968	28,065	29,981	28,713	29,339	32,381
1919	36,267	35,810	31,246	30,689	27,822	27,089	29,244	30,943	35,526	37,328	37,595	35,547
1920	37,052	36,715	37,002	35,047	30,333	26,653	26,355	25,617	22,711	19,594	20,352	22,448
1921	22,567	22,926	24,006	24,282	21,516	20,716	19,697	17,829	17,130	15,526	14,472	17,144
1922	16,313	16,779	17,997	18,744	19,166	19,304	19,113	19,304	20,081	18,961	19,884	22,602
1923	24,450	24,841	24,987	25,216	24,013	23,816	22,835	21,781	21,416	20,597	19,649	22,142
1924	22,593	22,711	23,243	25,199	25,482	24,285	22,390	20,377	19,771	18,939	21,387	23,508
1925	28,930	28,758	29,210	28,634	28,952	27,731	25,102	22,704	22,335	20,964	20,473	23,128
Av. 1921–1925	22,971	23,202	23,888	24,414	23,826	23,170	21,827	20,399	20,147	18,997	19,173	21,705

Cold Storage Report Section.

TABLE 479.—*Cattle, calves, beef and veal: Statement of the livestock and meat situation, by months, 1925*

Item	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July
Inspected slaughter:								
Cattle	Thousands	855	656	736	731	749	732	862
Calves	do	394	378	466	496	481	474	473
Carcasses condemned:								
Cattle	do	8	7	8	8	7	5	7
Calves	do	1	1	1	1	1	1	1
Average live weight:								
Cattle	Pounds	975	977	971	977	966	953	916
Calves	do	176	169	156	146	153	166	184
Average dressed weight:								
Cattle	do	521	527	525	537	530	514	502
Calves	do	101	97	93	86	89	95	104
Total dressed weight (carcass, not including condemned):								
Beef	1,000 pounds	440,829	342,432	382,490	388,582	392,956	373,230	429,268
Veal	do	39,863	36,499	43,249	42,428	42,934	44,852	48,963
Storage first of month:								
Fresh beef	do	114,034	111,947	101,599	87,684	67,271	46,887	36,452
Cured beef	do	28,930	28,758	29,210	28,634	28,952	27,731	25,102

TABLE 479.—*Cattle, calves, beef and veal: Statement of the livestock and meat situation, by months, 1925*—Continued

Item	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July
Exports: [4]								
Fresh beef and veal	1,000 pounds	371	395	339	219	293	235	329
Cured beef	do	1,467	1,594	2,265	1,720	1,697	1,653	1,894
Canned beef	do	123	173	258	111	213	321	152
Oleo oil and stearin	do	6,870	6,242	14,119	8,347	11,583	9,140	8,781
Tallow	do	1,185	993	2,087	2,006	1,329	2,449	1,297
Imports, fresh beef and veal	do	592	553	753	1,589	1,762	1,167	1,469
Receipts, cattle and calves [5]	Thousands	1,869	1,530	1,860	1,826	1,737	1,746	1,970
Stocker and feeder shipments [5]	do	207	176	230	271	216	154	243
Price per 100 pounds:								
Average cost for slaughter—								
Cattle	Dollars	6.51	6.87	7.67	8.20	8.16	7.86	7.55
Calves	do	8.52	9.39	9.64	8.70	8.69	8.26	8.08
At Chicago—								
Cattle, good steers	do	11.46	10.70	10.90	10.64	10.60	10.91	11.96
Veal calves	do	9.82	10.92	10.35	8.76	8.79	8.87	10.91
At eastern markets—								
Beef carcasses, good grade	do	14.65	14.07	15.57	16.27	15.92	16.05	18.30
Veal carcasses, good grade	do	19.02	19.04	17.81	16.00	16.52	15.79	16.96
Cattle on farms January 1	Thousands	62,150						

Item	Unit	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Inspected slaughter:							
Cattle	Thousands	811	866	1,067	861	927	9,853
Calves	do	439	423	486	398	445	5,353
Carcasses condemned:							
Cattle	do	7	8	11	10	10	96
Calves	do	1	1	1	1	1	[1] 11
Average live weight:							
Cattle	Pounds	939	926	940	938	954	[2] 954
Calves	do	197	198	201	189	182	[2] 176
Average dressed weight:							
Cattle	do	492	489	486	478	495	[2] 506
Calves	do	111	111	116	112	103	[2] 101
Total dressed weight (carcass, not including condemned):							
Beef	1,000 pounds	395,926	419,523	512,703	407,000	454,009	4,938,948
Veal	do	48,549	46,915	56,391	44,396	45,730	540,769
Storage first of month:							
Fresh beef	do	26,970	22,879	19,755	27,008	50,436	[3] 59,410
Cured beef	do	22,704	22,335	20,964	20,473	23,128	[3] 25,577
Exports: [4]							
Fresh beef and veal	do	339	234	271	100	312	3,437
Cured beef	do	1,913	1,998	1,848	1,567	1,314	20,930
Canned beef	do	136	128	160	87	312	2,174
Oleo oil and stearin	do	8,113	6,095	5,723	5,627	8,727	99,367
Tallow	do	1,309	1,513	1,276	1,012	1,058	17,514
Imports, fresh beef and veal	do	963	1,123	3,033	1,250	1,616	15,870
Receipts, cattle and calves [5]	Thousands	2,245	2,157	2,789	2,282	2,056	24,067
Stocker and feeder shipments [5]	do	360	427	717	489	333	3,823
Price per 100 pounds:							
Average cost for slaughter—							
Cattle	Dollars	6.94	6.86	6.36	6.18	6.80	[2] 7.11
Calves	do	8.63	8.80	8.55	8.22	8.75	[2] 8.66
At Chicago—							
Cattle, good steers	do	12.10	12.32	12.22	11.18	10.52	[3] 11.29
Veal calves	do	11.94	12.18	11.19	10.60	11.30	[3] 10.47
At eastern markets—							
Beef carcasses, good grade	do	18.20	19.02	17.94	16.70	16.43	[3] 16.59
Veal carcasses, good grade	do	18.05	19.38	17.82	17.10	19.74	[3] 17.77
Cattle on farms January 1	Thousands						

Division of Statistical and Historical Research. Inspected slaughter from reports of Bureau of Animal Industry. Weights and storage holdings from reports of the Cold Storage Report Section; receipts, shipments, and prices compiled from data of the reporting service of the Division of Livestock, Meats, and Wool, and number on farm from Division of Crop and Livestock Estimates. Exports and imports from Bureau of Foreign and Domestic Commerce.

[1] Figures do not check to total because of adjustment to thousands.
[2] Weighted average, not total.
[3] Simple average, not total.
[4] Including reexports.
[5] At public stockyards.

TABLE 480.—*Beef: Yield of standard wholesale cuts in percentage of carcass, according to commercial grade* [1]

Cuts	Common	Medium	Good	Choice and prime
	Per cent	*Per cent*	*Per cent*	*Per cent*
Fore quarter	51.5	51.5	51.5	51.5
Chuck and neck [2]	27.7	26.4	25.4	23.6
Trimmed chuck [2]	26.1	25.0	24.1	22.5
Neck	1.6	1.4	1.3	1.1
Plate and brisket	10.2	11.5	12.6	14.4
Fore shank	4.9	4.6	4.3	3.9
Rib	8.7	9.0	9.2	9.6
Hind quarter	48.5	48.5	48.5	48.5
Whole round	27.2	25.4	24.1	22.0
Rump	3.2	3.5	3.7	4.0
Round	20.1	18.4	17.1	15.2
Hind shank	3.9	3.5	3.3	2.8
Whole loin	18.5	19.6	20.5	21.7
Loin (loin end and short loin)	17.2	17.4	17.7	18.0
Kidney knob	1.3	2.2	2.8	3.7
Kidney	0.4	0.4	0.3	0.3
Kidney fat	0.9	1.8	2.5	3.4
Flank	2.8	3.5	3.9	4.8

Bureau of Home Economics. Figures are based on data published by Missouri and Illinois Agricultural Experiment Stations.

[1] Standard Chicago cuts were used. Except for slight differences, particularly in the fore quarter, these cuts correspond to the ones illustrated in U. S. Dept. Agr., Circ. 300, "Commercial Cuts of Meat." Figures refer to typical animals of each grade.

[2] Shoulder clod is included.

TABLE 481.—*Dairy breeds: Number of purebred cattle registered, leading breeds, United States, 1900–1925*

Year	Ayrshire			Guernsey			Holstein-Friesian			Jersey		
	Bulls	Cows	Total	Bulls	Cows	Total	Bulls	Cows	Total	Bulls	Cows	Total
1900				608	896	1,504	1,365	3,381	4,746	2,798	8,750	11,548
1901				647	1,172	1,819	1,460	3,648	5,108	2,567	8,045	10,612
1902				726	1,267	1,993	1,738	4,252	5,990	2,471	7,580	10,051
1903				746	1,289	2,035	2,088	4,753	6,841	2,370	7,240	9,610
1904				737	1,261	1,998	2,477	5,567	8,044	2,373	7,464	9,837
1905				847	1,612	2,459	3,226	6,547	9,773	2,640	7,735	10,375
1906				950	1,964	2,914	3,842	7,918	11,760	3,019	8,652	11,671
1907				1,118	1,966	3,084	4,841	9,809	14,650	3,752	9,383	13,135
1908				1,291	2,191	3,482	5,684	10,850	16,534	4,148	10,135	14,283
1909				1,841	3,836	5,677	7,021	12,570	19,591	5,249	12,513	17,762
1910			3,233	2,420	4,194	6,614	9,689	16,487	26,176	6,333	14,509	20,842
1911			4,798	2,402	4,001	6,403	12,472	20,417	32,889	7,229	16,282	23,511
1912			2,884	2,942	4,578	7,520	13,743	23,792	37,535	7,562	16,591	24,153
1913			3,950	3,653	5,642	9,295	16,364	26,951	43,315	9,147	19,481	28,628
1914			4,912	4,348	6,937	11,285	18,336	29,750	48,086	10,079	22,861	32,940
1915			4,439	4,765	6,535	11,300	25,617	42,063	67,680	9,475	22,957	32,432
1916			4,033	5,630	7,654	12,684	26,116	46,549	72,665	10,242	24,997	35,239
1917			4,944	6,167	9,366	15,533	24,749	49,098	73,847	14,446	33,960	48,406
1918			8,494	6,108	9,356	15,464	28,730	59,549	88,279	8,904	25,398	34,302
1919			6,148	7,648	11,781	19,429	30,298	60,589	90,887	10,906	30,424	41,330
1920			6,809	7,427	11,956	19,383	36,791	77,712	114,503	11,669	32,162	43,831
1921			5,874	8,036	13,971	22,007	39,585	88,265	127,850	11,213	31,123	42,336
1922	1,565	4,816	6,381	8,065	14,007	22,072	30,631	83,141	113,772	11,651	33,801	45,452
1923	1,578	5,975	7,553	9,758	16,976	26,734	29,089	86,043	115,132	12,291	38,159	50,450
1924	1,431	5,508	6,939	10,301	18,166	28,467	28,209	83,320	111,529	12,331	39,832	52,163
1925	1,561	5,972	7,533	11,299	20,742	32,041	26,935	82,659	109,594	12,131	41,725	53,856

Division of Dairy and Poultry Products.

TABLE 482.—*Milk: Production and utilization, United States, 1920–1924*

Purpose for which milk is used	Milk used per pound of product	1920			1921			1922			1923			1924		
		Product manufactured	Whole milk used	Per cent of total milk	Product manufactured	Whole milk used	Per cent of total milk	Product manufactured	Whole milk used	Per cent of total milk	Product manufactured	Whole milk used	Per cent of total milk	Product manufactured	Whole milk used	Per cent of total milk
Butter:	*Pounds*	*Million pounds*	*Million pounds*	*Per cent*	*Million pounds*	*Million pounds*	*Per cent*	*Million pounds*	*Million pounds*	*Per cent*	*Million pounds*	*Million pounds*	*Per cent*	*Million pounds*	*Million pounds*	*Per cent*
Creamery	21.0	863.6	18,135.1	20.226	1,054.9	22,153.7	22.403	1,153.5	24,223.8	23.619	1,252.2	26,296.5	23,963	1,356.1	28,577.7	24.923
Farm	21.0	675.0	14,175.0	15.810	650.0	13,650.0	13.807	625.0	13,125.0	12.797	610.0	12,810.0	11.673	600.0	12,600.0	10.988
Cheese, all kinds	10.0	362.4	3,624.3	4.042	355.8	3,558.4	3.599	375.0	3,749.8	3.656	398.9	3,989.5	3.636	417.9	4,179.4	3.645
Milk:																
Condensed and evaporated	2.5	1,578.0	3,945.0	4.400	1,464.2	3,660.4	3.703	1,431.3	3,578.4	3.489	1,774.9	4,437.2	4.044	1,700.5	4,251.4	3.708
Powdered	8.0	10.3	82.7	.092	4.2	33.9	.034	5.6	44.8	.044	6.6	52.5	.048	7.9	63.1	.055
Malted	2.2	19.7	43.4	.048	15.7	34.4	.035	13.7	30.0	.029	15.3	33.7	.031	15.9	34.9	.031
Sterilized, canned	1.0	5.6	5.6	.006	5.1	5.1	.005	.3	.3		.1	.1		.5	.5	
Chocolate			60.0	.067		40.0	.041		100.0	.098		149.5	.136		158.8	.138
Cream, powdered	19.0	.3	5.9	.007	.1	2.5	.002	.1	2.2	.002	.3	6.2	.006	1.0	19.3	.017
Ice cream	[1] 13.75	[2] 260.0	3,575.0	3.987	[2] 244.0	3,355.0	3.396	[2] 263.5	3,623.4	3.533	[2] 294.9	4,054.9	3.695	[2] 285.6	3,925.3	3.424
Total milk for manufacture			43,652.0	48.685		46,493.4	47.030		48,477.7	47.267		51,830.1	47.232		53,811.4	46.929
Milk accounted for otherwise:																
Household purposes			39,090.0	43.600		45,143.0	45.660		46,672.6	45.507		50,440.0	45.965		52,772.0	46.022
Fed to calves			4,202.0	4.688		4,260.0	4.310		4,335.0	4.226		4,174.0	3.803		4,642.8	4.049
Waste, loss, and unspecified			2,713.3	3.027		2,965.9	3.000		3,076.9	3.000		3,292.0	3.000		3,440.0	3.000
Total milk produced			89,657.3	100.000		98,862.3	100.000		102,562.2	100.000		109,736.1	100.000		114,666.2	100.000

Division of Dairy and Poultry Products.

[1] Milk per gallon of ice cream.

[2] Million gallons.

TABLE 483.—*Production dairy products 1920–1924*

Product	1920		1921		1922		1923		1924	
	Number factories reporting	Quantity produced	Number factories reporting	Quantity produced	Number factories reporting	Quantity produced	Number factories reporting	Quantity produced	Number factories reporting	Quantity produced
		1,000 lbs.		*1,000 lbs.*		*1,000 lbs*		*1,000 lbs.*		*1,000 lbs.*
Creamery butter	3,447	863,577	3,463	1,054,938	3,497	1,153,515	3,539	1,252,214	3,690	1,356,080
Whey butter (made from whey cream)	314	3,155	285	2,176	235	2,291	219	1,904	224	1,665
Renovated or process butter	12	7,530	10	5,877	9	4,448	5	2,802	4	2,813
American cheese:										
Whole milk	1,826	254,774	1,819	261,727	1,808	282,806	1,835	308,108	1,936	324,695
Part skim	50	4,467	13	1,455	20	2,164	23	2,145	21	2,470
Full skim	78	6,458	23	1,733	33	2,500	24	2,033	14	1,695
Swiss cheese (including block)	270	20,430	290	22,678	290	19,983	306	24,555	268	21,844
Brick and Munster cheese	514	44,126	406	42,073	438	37,194	378	33,250	369	32,052
Limburger cheese	125	7,503	100	7,035	104	7,383	108	7,100	104	9,734
Cream and Neufchatel cheese	40	7,601	35	9,279	38	9,936	51	10,334	53	14,945
All Italian varieties of cheese	41	4,779	35	3,793	34	2,627	32	2,132	33	1,973
All other varieties of cheese	76	12,383	48	6,065	51	5,387	42	5,040	35	4,622
Total cheese (not including cottage, pot, and baker's)		362,521		355,838		369,980		394,697		413,940
Cottage, pot, and baker's cheese	357	29,887	329	27,316	363	32,389	357	35,527	445	54,347
Condensed milk (sweetened):										
Case goods—										
Skimmed	15	7,700	7	3,861	8	3,915	10	2,748	7	2,044
Unskimmed	75	340,391	59	199,985	49	230,456	51	196,058	46	187,281
Bulk goods—										
Skimmed	111	84,223	85	66,051	92	76,049	99	102,236	98	96,581
Unskimmed	58	23,524	43	22,324	46	30,292	56	44,860	68	47,429
Evaporated milk (unsweetened):										
Case goods—										
Skimmed	9	5,526	3	1,405	4	3,574	4	7,035	9	11,555
Unskimmed	130	979,873	136	1,028,172	132	949,909	139	1,252,520	131	1,189,755
Bulk goods—										
Skimmed	118	64,304	113	69,220	114	67,066	113	77,416	113	83,131
Unskimmed	93	72,474	92	73,145	78	70,088	73	92,008	78	82,772
Total condensed and evaporated milk		1,578,015		1,464,163		1,431,349		1,774,881		1,700,548
Evaporated, part or full skimmed modified with foreign fat:										
Case goods	12	84,044	15	59,050	14	38,538	9	6,935		
Bulk goods	6	2,517	7	5,873	4	1,915	1	110		
Sterilized milk (canned same as condensed)	8	5,623	5	5,074	5	330	1	80	2	488
Condensed or evaporated buttermilk	5	32,530	24	29,314	36	44,343	43	54,833	54	66,837
Dried or powdered buttermilk	19	5,704	24	7,708	22	9,007	35	13,032	47	18,058
Powdered whole milk	19	10,334	15	4,242	18	5,599	18	6,560	19	7,887
Powdered skimmed milk	56	41,893	50	38,546	53	40,617	65	62,251	72	69,219
Powdered cream	5	309	3	130	4	118	4	328	4	1,018
Dried casein (skim-milk product)	85	11,441	73	8,066	74	6,907	124	14,500	124	20,683
Dried casein (buttermilk product)	3	85	2	10	1	20	1	48	2	76
Malted milk	8	19,715	7	15,652	7	13,659	7	15,331	8	15,889
Milk sugar (crude)	21	5,583	9	2,890	7	2,191	11	2,872	9	3,331
Ice cream of all kinds (gallons)	2,427	148,298	2,642	147,949	2,673	161,609	2,657	183,412	2,842	181,564

Division of Dairy and Poultry Products.

TABLE 484.—*Dairy products manufactured, by months, 1924*

[Thousands of pounds—i. e., 000 omitted]

Manufactured product	Factories reporting, number	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Creamery butter	3,690	87,468	86,731	95,760	106,012	139,954	161,992	164,443	137,836	115,102	100,536	77,282	82,964	1,356,080
Whey butter (made from whey cream)	224	107	116	135	154	190	214	201	159	142	108	75	63	1,665
Renovated or process butter	4	341	295	278	181	170	234	254	233	194	194	176	263	2,813
Butter oil	6	41	32	42	232	282	256	75	28	45	28	27	42	1,130
American cheese:														
Whole milk	1,936	17,718	18,886	22,955	24,597	33,657	43,517	40,716	33,602	30,539	26,210	17,252	15,046	324,695
Part skim	21	242	235	213	281	304	304	191	178	138	143	99	142	2,470
Full skim	14	88	139	173	153	142	154	329	123	89	67	53	95	1,605
Swiss cheese (including block)	268	293	299	325	727	2,862	3,873	4,095	3,577	3,016	1,881	699	197	21,844
Brick and Munster cheese	369	2,509	2,369	2,794	3,286	3,268	3,120	2,257	2,004	2,595	3,172	2,834	1,844	32,052
Limburger cheese	104	374	364	722	993	1,174	1,312	1,158	1,014	918	812	525	368	9,734
Cream and Neufchatel cheese	53	1,176	1,157	1,287	1,538	1,611	1,390	929	921	1,033	1,170	1,263	1,470	14,945
All Italian varieties	33	144	160	197	199	251	236	162	127	93	141	137	146	1,973
All other varieties	35	415	390	395	313	324	401	312	375	404	472	386	435	4,622
Total cheese (not including cottage, pot, and baker's)		22,959	23,999	29,061	32,087	43,573	54,307	50,149	41,921	38,825	34,068	23,248	19,743	413,940
Cottage, pot, and baker's cheese	445	3,919	3,915	4,662	4,759	5,630	5,485	4,844	4,582	4,285	4,098	3,915	4,253	54,347
Sweetened condensed milk:														
Case goods—														
Skimmed	7	37	222	215	187	190	218	276	336	208	.....	72	83	2,044
Unskimmed	46	14,686	14,462	17,919	20,429	22,432	16,321	14,215	10,321	13,832	17,618	13,253	11,793	187,281
Bulk goods—														
Skimmed	98	6,252	6,555	7,866	7,795	11,746	11,133	10,505	7,079	7,675	6,488	6,253	7,234	96,581
Unskimmed	68	1,703	1,665	2,908	5,801	6,518	8,101	5,591	3,814	3,403	2,875	2,435	2,615	47,429
Unsweetened evaporated milk:														
Case goods—														
Skimmed	9	495	917	300	269	182	344	3,354	2,827	2,513	226	93	35	11,555
Unskimmed	131	69,972	75,874	96,358	112,034	147,054	160,061	137,703	92,521	85,627	82,899	62,485	67,167	1,189,755
Bulk goods—														
Skimmed	113	3,938	4,853	5,581	7,185	8,719	10,472	11,017	9,987	5,973	6,066	4,569	4,771	83,131
Unskimmed	78	3,950	4,452	5,816	5,948	7,791	9,808	12,868	12,445	6,820	5,157	4,203	3,514	82,772
Total condensed and evaporated milk		101,033	109,000	136,963	159,648	204,632	216,458	195,529	139,330	126,051	121,329	93,363	97,212	1,700,548

Sterilized milk (canned same as condensed)	2				2	3	4	188	168	88	20	12	3	488
Condensed or evaporated buttermilk	54	4,387	4,084	3,974	4,130	6,112	7,446	8,193	6,397	6,126	6,363	4,956	4,669	66,837
Dried or powdered buttermilk	47	1,461	1,500	1,609	1,470	1,893	2,080	2,462	1,766	1,272	895	622	1,028	18,058
Powdered whole milk	19	307	459	802	447	910	1,049	820	424	573	789	652	655	7,887
Powdered skim milk	72	5,987	5,923	6,556	7,233	8,242	8,224	7,209	5,683	4,733	3,612	2,748	3,069	69,219
Powdered cream	4	6	8	8	24	53	43	99	8	21	192	216	340	1,018
Dried casein (skim-milk product)	124	1,367	1,273	1,756	2,269	2,720	2,995	2,315	1,504	1,367	1,144	1,021	952	20,683
Dried casein (buttermilk product)	2	7	9	17				20	13	10				76
Malted milk	8	1,253	1,386	1,482	1,554	1,637	1,517	1,343	862	1,026	1,123	1,187	1,519	15,889
Milk sugar (crude)	9	223	248	311	369	409	402	364	263	206	178	165	193	3,331
Ice cream of all kinds (gallons)	2,842	6,118	7,119	9,597	13,883	19,394	27,783	29,593	27,790	15,493	10,970	7,697	6,127	181,564
Ice cream mix or stock	87	1,224	1,694	2,426	3,466	5,059	7,097	6,055	5,367	2,520	2,449	2,354	2,201	41,912

Division of Dairy and Poultry Products.

TABLE 485.—*Production of condensed and evaporated milk, 1914–1924*

[Thousand pounds—i. e., 000 omitted]

Year	Quantity	Year	Quantity	Year	Quantity
1914	875,507	1918	1,674,898	1922	1,431,349
1915		1919	2,030,958	1923	1,774,881
1916	997,835	1920	1,578,015	1924	1,700,548
1917	1,353,606	1921	1,464,163		

Division of Dairy and Poultry Products.

TABLE 486.—*Condensed milk: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Australia [1]	4,463	727	[2] 61	[3] 15,841	[2] 79	[2] 12,726		
Canada	259	4,575	232	24,813	177	41,056	155	40,251
Denmark	[3] 11	[4] 4,724	3	50,293	4	66,969		71,198
Italy	806	5,913	664	1,043	987	6,791	855	13,559
Netherlands	[5] 39	55	534	190,581	163	227,393	236	233,901
New Zealand [1]	261	132	48	1,482	3	1,443	32	1,408
Norway	3	32,106	1,089	15,382	989	16,069	683	13,160
Switzerland	201	80,539	5	45,474	177	55,827	120	58,225
United States		[4] 16,200	5,294	187,497	10,398	194,264	6,619	206,280
PRINCIPAL IMPORTING COUNTRIES								
Argentina	742		819		1,016	156	946	13
Belgium	([6])	([6])	762	140	668	104	1,399	281
Brazil	8,694		1,383		645			
British India [1]	11,236		7,222	172	7,083	217	[7] 10,033	[7] 87
China	4,484		8,025		9,443		9,461	
Cuba	28,457		41,228		46,948			
Egypt	[8] 1,628		2,316	50	1,546	125	1,739	160
France	2,458	4,140	27,674	6,079	25,124	7,483	24,168	5,256
Germany [9]	66	12,060	9,294	1,022	8,872	582	26,753	570
Japan	10,061		9,926	89	12,623	61	12,642	74
Java and Madura	[3] 6,136	[3] 74	11,052		10,752		10,926	
Philippine Islands	12,311		12,177		16,855		17,890	
Spain	5,605		83		51		[10] 3	
Sweden	28	92	162	8	190	20	150	51
Union of South Africa	21,227	([11])	6,932	1	10,697	1	10,026	1
United Kingdom	121,175	48,221	207,081	15,589	249,859	13,825	244,379	11,023
Total 25 countries	240,351	209,578	354,066	555,556	415,349	645,112	379,215	655,498

Division of Statistical and Historical Research. Official sources.

[1] Includes some preserved milk.
[2] Year beginning July 1.
[3] Two-year average.
[4] Four-year average.
[5] Three-year average.
[6] Not separately stated.
[7] Twelve months' sea trade, three months' land trade.
[8] One year only.
[9] Includes some powdered milk.
[10] Six months.
[11] Less than 500 pounds.

TABLE 487.—*Total manufacturers' stocks of condensed and evaporated milk in the United States on the first of each month*

[Case and bulk goods]

Month	1920	1921	1922	1923	1924	1925
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
January	122, 916, 554	238, 894, 350	189, 354, 526	67, 780, 447	191, 418, 086	123, 427, 506
February	106, 986, 499	180, 745, 281	176, 439, 924	79, 772, 120	155, 348, 555	91, 205, 276
March	136, 529, 752	135, 966, 822	155, 661, 792	83, 814, 541	138, 361, 837	90, 868, 982
April	237, 004, 787	103, 698, 503	141, 883, 446	101, 000, 439	127, 463, 781	110, 564, 780
May	226, 381, 616	118, 318, 263	145, 778, 865	126, 529, 832	142, 838, 083	140, 899, 409
June	218, 348, 794	178, 367, 326	173, 826, 718	170, 583, 452	199, 985, 880	193, 307, 197
July	243, 571, 127	232, 557, 940	187, 517, 731	190, 342, 682	288, 458, 727	187, 636, 117
August	245, 915, 098	235, 055, 729	161, 855, 639	194, 349, 964	282, 431, 281	194, 864, 543
September	275, 156, 137	174, 253, 706	158, 367, 839	228, 348, 467	242, 635, 424	212, 902, 557
October	315, 380, 719	177, 671, 916	122, 832, 939	225, 940, 176	202, 977, 390	207, 262, 500
November	302, 800, 422	172, 410, 198	86, 788, 218	211, 334, 246	180, 054, 015	185, 624, 071
December	274, 681, 128	188, 709, 173	69, 041, 970	191, 148, 614	159, 593, 015	165, 681, 831

Division of Dairy and Poultry Products.

TABLE 488.—*Milk, standard or grade B: Wholesale price per quart, in cases of 12 quarts, 1920–1925*

Market and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Boston:	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1920	15	15	15	15	14	14	15	15	16½	16½	16½	16½
1921	15½	15	13½	13½	13½	13½	13½	14	14	14	14	14
1922	11	10½	10½	10½	10½	10	11	11	11	12	12	12
1923	12	12	12	11½	11½	11½	12	12½	12½	12½	13½	13
1924	12½	11½	10½	10	10	10	10½	11½	12½	12½	12½	12½
1925	------	12½	11½	11½	11½	11	12	12½	12½	12½	12½	12½
New York:												
1920	17½	16	16	15	15	15	------	17	18	18	18	17
1921	17	16	15	------	------	------	14	15	14½	14½	14½	14½
1922	14½	14½	13½	------	13	12½	14	14½	14½	14½	14½	15½
1923	15½	14	14	14	13½	13	13	13	14	14	14½	14
1924	14	13	13	13	12	12	------	12	13	13	14	14
1925	14	14	14	14	14	13	13	14	14	14	------	14
Philadelphia:												
1920	13	13	13	13	13	13	13	14	14	15	14	12
1921	12	12	12½	------	10	10	10	10	10	10	10	10
1922	10	10	10	10	10	10	10	10	10½	11	11½	11½
1923	10½	11	11½	12	12	12	12	12½	12½	12	11½	11½
1924	11½	11½	11½	11½	12	11	11½	11½	11½	11	11	11
1925	11	11	11	11	11	11	11	11	11	11	11	11
Pittsburgh:												
1920	15½	15	15	14½	14½	14½	14½	15½	15½	15½	15½	15½
1921	14½	14½	13½	13½	13½	13½	13½	13½	13½	13½	13½	12½
1922	12½	11½	11½	11½	11½	11½	11½	12	------	12½	13½	13½
1923	13½	13½	13½	13½	13½	13½	13½	13½	13½	14½	14½	14½
1924	14½	13½	13½	13½	13½	13½	13½	13½	13½	13½	11	9½
1925	11	9½	11	11	13½	13½	13½	13½	------	14	14	14
Cincinnati:												
1920	14½	14	14	------	14	14	14	14	14	14	14	14
1921	14	13	13	------	12	12	12	12	12	12	12	12
1922	12	11	11	11	11	11	11	11	11	11	11	11
1923	11	11	11	11	11	11	------	10	10½	12	12	12
1924	12	12	12	12	12	------	------	------	------	------	------	------
Cleveland:												
1920	14½	14½	14½	13½	13½	13½	13½	14½	14½	14½	13½	13½
1921	13½	12½	12½	12½	12½	11½	11½	11½	11½	11½	11½	11
1922	9	9	9	9	8½	8½	8½	8½	8½	10½	10½	11½
1923	11½	11½	11½	11½	11½	11	11	11½	11½	11½	11½	11½
1924	11½	11½	11½	11½	11½	9	9	11	10	11	11	12
1925	11	11	11	11	11	11	11	11	11	11½	11	11½
Indianapolis:												
1920	12	12	12	12	12	12	12	12	12	12	12	12
1921	12	12	11	11	11	10	10	10	10	10	10	9
1922	10	9	9	9	9	8	8	8	8	8	8	8½
1923	8½	10½	10	10	10	10	10	10	10	10	10	10
1924	10	10½	10	10	10	10½	10	10	10	10	10	10½
1925	10	10	9	9	9	9½	9	9	10	10	10	10½
Chicago:												
1920	14½	14½	13½	13½	13½	13½	14½	15½	15½	15½	14	13½
1921	13½	13½	13½	13	13	13½	13½	13	11½	11½	11½	11½
1922	11	11	11	9½	11	11	11	11	11	10	11	11
1923	11	12	12	12	11	12	13	13	13	13	13½	13½
1924	------	13½	13	12½	12½	12½	12½	12½	13	13	13	13
1925	13	13	13	13	13	13	13	13	13	13	13	13

TABLE 488.—*Milk, standard or grade B: Wholesale price per quart, in cases of 12 quarts, 1920–1925*—Continued

Market and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Detroit:	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
1920	15	15	15	15	14½	14½	15	15	15	15	15	13
1921	12	12	12	12	12	12	12	12	12	12	12	12
1922	12	12	11	11	10½	10½	10½	11	11	11½	10	11
1923	12	11½	12	12½	12½	12	------	13	13	13	12	12½
1924	12	12	12	12	12	11½	12	12	11	11	10	10
1925	11	10½	11	11	10½	------	11	12	11	11½	11	11½
Milwaukee:												
1920	12	12	11	11	11	11	12	12	12	12	10	10
1921	------	8½	8½	8½	7½	7½	7½	8	7½	7½	7½	7½
1922	7½	7½	7½	7½	7½	7½	7½	7½	7½	7½	8½	8½
1923	8½	8½	8½	8½	8½	8½	8½	9½	9½	9½	9½	9½
1924	9½	9½	9½	9½	9½	9½	9½	9½	9½	9	8½	9
1925	8	8½	9	9	9	8½	9	8	8	8½	8½	8½
Minneapolis:												
1920	11½	11½	11½	11½	11½	11½	11½	12½	12½	12½	12½	12½
1921	11½	11	10½	10½	9½	8½	8½	9½	9½	9	9	9
1922	8½	8½	8½	8½	8	8½	8	8½	------	------	------	10
1923	9	9	9	9½	9½	9½	9½	10½	10½	10½	10½	10½
1924	10½	10½	10½	8½	8½	8½	9	9½	9½	10	9½	9½
1925	9	10	9½	9½	9½	9½	9½	9	10½	11	10½	10½
St. Paul:												
1920	12	12	12	11½	11½	------	12	12½	12½	12½	12½	12½
1921	11½	11½	10½	10½	9½	8½	------	9½	------	9½	9½	9½
1922	8½	8½	8½	8½	8½	8½	8½	8½	9½	------	9½	------
1923	9½	9½	9½	9½	9½	9½	9½	10½	10½	------	------	10½
1924	10½	9½	9½	8½	8½	------	------	9½	------	9½	9½	------
1925	------	9½	9½	------	------	------	------	------	------	10½	10½	------
Sioux City:												
1920	14½	14½	14½	14½	14½	13½	13½	13½	14½	14½	14½	14½
1921	13½	12½	11½	11	11	11	11	11	11	11	11	------
1922	9½	8½	8½	8½	8½	8½	------	9	------	------	------	------
1923	------	------	------	8	8	8	------	9	------	------	10	10
1924	10	10	10	10	9	9	9	9	9	9	------	9
1925	9	9	------	9	8	8	8	9	9	9	9	9
St. Louis:												
1920	15	15	15	------	14	------	14	15	15	15	15	15
1921	15	13½	13	12	13	11	11	11	11	11	11	------
1922	8	8	8	8	8	8	10	------	10	10	10	11
1923	11	11	11	11	11	11	11	11	11	11	11	11
1924	11	11	11	11	11	11	11	11	11	11	11	11
1925	11	11	11	11	11	11	11	11	11	11	11	11
Kansas City, Mo.:												
1920	14	14	14	14½	14	13½	14	14½	13½	14½	13½	14½
1921	12½	13	11½	11½	11½	12	12	12½	12	12	11½	11
1922	11½	11	10	9	8½	9	9	9½	8½	9½	9½	10
1923	10½	10	10	10½	10	10½	11	10	10	11	10	10½
1924	10	11	11	10½	------	11	11	10	10½	10½	10½	10½
1925	10½	11	10½	10½	10½	10½	10½	10½	10	10½	10½	10½
Washington, D. C.:												
1920	15½	15	15½	15	13½	13½	13½	14	14	15	15½	15½
1921	14½	13	14	14	11	11	10	------	11	12	12	12
1922	11	12	10	10	10	10	10	10	10	11	11	11
1923	11	11	11	11	11	11	11	11	11	11	12	12
1924	12	12	12	12	11½	11½	11½	11½	11½	11½	11½	10½
1925	10½	11	11	11	11	11	11	11	11	11½	12	11½
Richmond:												
1920	16	16	16	16	16	15	16	16	16	16	16	16
1921	16	------	14½	11	13	13	13	13	13	13	13	13
1922	13	13	13	12	12	12	13	12	12	12	13	13
1923	13	13	13	13	13	13	13	13	13	13	14	14
1924	13	13	13	13	13	13	13	13	13	13	13	10
1925	12	13	13	13	13	11½	------	13	13	13	13	13
Jacksonville:												
1920	17	17	------	18	18	------	22	22	22	18	18	18
1921	------	15	15	------	------	16	------	16	14	16	16	16
1922	13	------	15	11	12½	------	13	12½	14½	14½	15	14½
1923	14½	14½	14½	13	12½	12½	12½	13	13	15	15	14½
1924	16	16½	15½	14½	14½	14	14	14	14	14½	14½	14½
1925	14½	14½	14½	14½	14½	14½	14½	14½	15	17½	17½	17½
Louisville:												
1920	14	------	14	14	14	14	14	14	14	14	14	------
1921	13	14	------	------	------	------	9	10	9	9	9	9
1922	9	7	7	7	7	7	7	8	9	9½	10	11
1923	11	10	10	10	10	10	10	10½	10½	11	11	11
1924	11	11	11	11	10	10	10	10	10	10	11	11
1925	11	11	10	10	11	10	10	10	10	12	12	12

TABLE 488.—*Milk, standard or grade B: Wholesale price per quart, in cases of 12 quarts, 1920–1925*—Continued

Market and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Nashville:	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1920	16	16	16	16	16	16	16	16	16	16	16	15
1921	15	14	14	13	13	12	12	12	12	12	12	12
1922	10	9	9	9	9	9	9	9	9	9	9	10
1923	10	10	10	10	10	10	10	----	10	10	12	12
1924	12	12	12	12	12	10	10	10	12	12	12	12
1925	12	12	12	12	12	12	------	12	12	14	------	13
Birmingham:												
1920	15	18	15	15	15½	18	15	15	15	------	------	18
1921	18	15	------	15	14	14	14	13	13½	13½	13½	13½
1922	13	12	------	11	14	------	------	10	------	------	13	------
1923	14	13½	13½	13½	13½	13½	13½	13½	13½	13½	12	12
1924	12	14	14	14	14	13	13	13	13½	14	14½	14½
1925	14½	14½	14	14	------	14	14½	14	14½	14½	------	14
New Orleans:												
1920	17	17	17	17	15	15	15	15	17	17	17	16
1921	15	15	14	14	14	14	14	14	14	14	12	12
1922	12	12	12	12	12	12	12	12	12	12	12	12
1923	12	12	12	12	12	12	12	12	12	13	13	13
1924	13	13	13	13	12	12	12	12	12	12	12	12
1925	12	12	12	12	10	10	10	10	10	12	12	12
Dallas:												
1922	12	12	10	10	10	10	12	11	12	12	12	11
1923	11	12	12	12	12	12	12	12	12	------	12	11
1924	12	12	12	12	12	12	12	12	12	12	12	12
1925	12	12	12	12	12	12	12	12	12	11	12	12
Butte:												
1920	------	12½	12½	------	------	12½	12½	12½	------	15	------	------
1921	12½	12½	12½	------	10	------	------	10	9	10	10	10
1922	10	10	10	10	10	9½	9½	9½	9	10	10	10
1923	10	10	10	10	10	10	10	10	11	11	11	11
1924	------	11	11	11	11	11	11	11	11	11	11	11
1925	11	10½	11	11	11	11	11	11	11	11	11	11
Denver:												
1920	11½	11½	12	12	------	11	12	11	11	11	11	11
1921	------	13	------	10	9	9	8½	9	8	8	8½	8½
1922	8	8	7½	8	8	7½	8	8	8	8	8	10
1923	------	10	10	10	10	10	9	10	10	10	10	10
1924	10	10	10	10	------	9	10	10	9½	10	10	10
1925	10	10	8	8	8	8	------	------	10	------	------	10
Salt Lake City:												
1920	11	11	11	11	11	11	11	11	11	11	11	11
1921	12	11	11	11	11	11	11	11	11	11	11	11
1922	8	8	8	8	8	9½	8	8	------	8	8	8
1923	9	9	9	9	9	9	9	9	9	9	9	9
1924	9	9	9	9	9	9	9	9	9	10	9½	10
1925	10	10	10	10	10	9	9	10	9½	------	------	9½
Seattle:												
1920	11½	11	10	9	------	10	11	11	11	10½	------	------
1921	9	8½	9	9	8½	------	------	8½	------	8½	8½	8
1922	9½	9½	9½	8	8½	8½	8½	9½	9½	9	10½	10½
1923	10½	10½	10½	10½	9½	9½	9½	9½	10½	10½	10½	------
1924	10½	10	9½	9½	8½	8½	------	8½	8½	7	7	7½
1925	7½	9½	9½	9½	9½	9½	9½	9½	10½	10½	10½	10½
Portland, Oreg.:												
1920	13½	13½	13½	12	12½	12	12	12	13	13½	13	13
1921	12½	12	12	------	9	9	9	8	9	9	9	9
1922	9	8½	8½	------	8	8	8	9	9	9	9	9
1923	9	9	9	9	9	9	9	10	10	10	10	9½
1924	10	9	8	8	8	8	------	8	8	------	8	7½
1925	------	8	8	8	------	10	8	8	9½	------	10	10
Los Angeles:												
1920	15	15	15	15	15	15	17	17	------	17	17	17
1921	17	15	15	15	------	15	14	13	13	13	13	13
1922	13½	13	13	13	13	13	13	13	13	13	14	14
1923	14	14	14	14	14	14	14	14	14	14	14	14
1924	14	14	15	15	14	14	15	15	15	15	13	13
1925	13	13	13	13	13	13	13	13	13	13	13	13
San Francisco:												
1920	14	14	13½	13½	14	14	13½	14	14	14½	14½	15
1921	13	13	13	12	12	12	11	11	11	11	11	11
1922	11	10½	10½	11	------	10½	10	10	10	10	10	11
1923	11	10½	10	10½	10	10½	------	11	------	------	12	11
1924	12	11	11	12	12	12	11	12	12	10	12	12
1925	12	12	12	12	13	13	13	13	13	13	11½	13

Division of Statistical and Historical Research. Compiled from reports of the Division of Dairy and Poultry Products.

TABLE 489.—*Milk, standard or grade B: Retail price per quart, delivered to family trade in cities, 1920–1925*

Market and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
Boston:												
1920	17	17	17	17	16	16	17	17½	18	18	18	18
1921	17	16½	16	15½	15	15	15	16	15½	15	15	15
1922	13½	13½	13½	13½	12½	12½	13½	13½	13½	13½	14½	14½
1923	14½	14½	14½	13½	13½	13½	14	14½	14½	14½	15½	15
1924	14½	13½	12½	12	12	12	12½	13½	14½	14½	14½	14½
1925	14½	12½	13½	13½	13½	13	14	14½	14½	14½	14½	14½
New York:												
1920	18	16½	16½	15	15	15	16	17	18	18	18	17
1921	17	16	15	------	------	14	14	15	15	15	15	15
1922	15	15	15	------	13	13	14	15	15	15	15	16
1923	16	15	15	15	14	14	14	14	15	15	16	15
1924	15	14	14	14	13	13	13	13	14	14	15	15
1925	15	15	15	15	15	14	14	15	15	15	15	15
Philadelphia:												
1920	14	14	14	14	14	14	14	15	15	15	15	13
1921	13	13	13	13	11	11	11	11	11	11	11	11
1922	11	11	11	11	11	11	11	11	11	12	12	12
1923	11½	12	12	12	13	13	13	13	13	13	12	12
1924	12	12	12	12	12	12	12	12	12	12	12	12
1925	12	12	12	12	12	12	12	12	12	12	12	12
Pittsburgh:												
1920	16	16	16	15	15	15	15	16	16	16	16	16
1921	15	15	14	14	14	14	14	------	14	14	14	13
1922	13	12	12	12	12	12	12	12	------	------	14	14
1923	------	------	14	14	14	14	14	14	14	15	15	15
1924	15	14	14	14	14	14	14	14	14	14	14	14
1925	14	14	14	14	14	14	14	14	14	14½	14½	14½
Cincinnati:												
1920	15	15	15	15	15	15	15	15	15	15	15	15
1921	15	14	14	14	13	13	13	13	13	13	13	13
1922	13	12	12	12	12	12	12	12	12	12	12	12
1923	12	12	12	12	12	12	------	12	12	14	14	14
1924	14	14	14	14	14	------	------	------	------	------	------	------
Cleveland:												
1920	16	16	16	15	15	15	15	16	16	16	15	15
1921	15	14	14	14	14	13	13	13	13	13	13	13
1922	11	11	11	10	10½	10½	10½	11	11	13	13	14
1923	14	14	14	14	13½	13	14	14	14	13½	14	13½
1924	13½	14	13½	13½	14	12	11	14	13½	13½	13½	13½
1925	13½	13½	14	14	14	14	13½	14	14	14	14	15
Indianapolis:												
1920	14	14	14	14	14	14	14	14	14	14	14	14
1921	14	14	13	13	13	12	------	12	12	12	11½	11
1922	11½	11	11	10½	10½	10	10	10	10	------	10	10
1923	10	12	12	12	12	12	------	12	------	12	12	12
1924	12	12	12	12	12	12	12	12	12	11	12	12
1925	12	11	10	10	10	10	10	11	12	12	12	12
Chicago:												
1920	15	15	14	14	14	14	15	16	16	16	15	14
1921	14	14	14	14	14	14	14	14	12	12	12	12
1922	12	12	12	12	12	12	12	12	12	12	12	12
1923	12½	13	13	13	13	13	14	14	14	14	14	14
1924	14	14	14	14	14	14	14	14	14	14	14	14
1925	14	14	14	14	14	14	14	14	14	14	14	14
Detroit:												
1920	16	16	16	16	15½	15½	16	16	16	16	16	14
1921	13	13	13	13	13	13	13	13	13	13	13	13
1922	13	13	12	11½	11½	11½	12	13	13	13	13	14
1923	13½	13½	14	14	14	14	12	15	13½	15	14	13½
1924	14	14	14	14	14	13½	14	13½	13½	13½	13½	13½
1925	13½	13	13½	13	13½	13½	13½	15	14	13½	13½	14
Milwaukee:												
1920	13	13	12	12	12	12	13	13	13	13	11	11
1921	------	10	10	10	9	9	9	10	9	9	9	9
1922	9	9	9	9	9	9	9	9	9	9	10	10
1923	10	10	10	10	10	10	10	11	11	11	11	11
1924	11	11	11	11	11	11	11	11	11	10½	10	10
1925	10	10	10	10	10	10	10	10	10	10	10	10½
Minneapolis:												
1920	13	13	13	13	13	13	13	14	14	14	14	14
1921	13	12½	12	12	11	10	10	11	11	11	11	10½
1922	10	10	10	10	10	10	10	10	11	11	11	11½
1923	11	11	11	11	11	11	11	12	12	12	12	12
1924	12	12	12	10	10	10	10	11½	11	11	11	11
1925	11	11	11	11	11	11	11	11	12	12	12	12
St. Paul:												
1920	13	13	13	13	13	13	13	14	14	14	14	14
1921	13	13	12	12	11	10	------	11	------	11	11	10½
1922	10	10	10	10	10	10	10	10	11	------	11	------
1923	11	11	11	11	11	11	------	12	12	12	12	12
1924	12	11	11	10	10	10	10	11	------	11	11	11
1925	11	11	11	11	11	11	11	11	12	12	12	12

TABLE 489.—*Milk, standard or grade B: Retail price per quart, delivered to family trade in cities, 1920–1925*—Continued

Market and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Sioux City:	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1920	16	16	16	16	16	15	15	15	16	16	16	16
1921	15	14	13	------	12½	12½	12½	12½	12½	12½	12½	------
1922	11	10	10	10	10	10	------	11	------	------	------	------
1923	------	------	------	10	10	10	------	11	------	------	12	12
1924	12	12	12	12	11	11	11	11	11	11	------	11
1925	11	11	------	11	10	10	10	11	11	11	11	11
St. Louis:												
1920	16	16	16	15	15	15	15	16	16	16	16½	16
1921	16	15	14	14	14	13	13	13	13	13	13	10
1922	10	10	10	10	10	10	12	12	12	12	12	13
1923	13	13	13	13	13	13	13	13	13	13	13	13
1924	13	13	13	13	13	13	13	13	13	13	13	13
1925	13	13	13	13	13	13	13	13	13	13	13	13
Kansas City, Mo.:												
1920	15½	15½	16	16	15½	15½	15	15½	15	15½	15½	15½
1921	14½	14	13½	13½	13½	13	14	14	14	14	14	14
1922	14	13	12	11	11	11½	11½	12	10	12	12	12½
1923	13	13	13	13	------	13	13	13	13	13	13	13
1924	12	13	13	13	------	13	13	13	13	13	13	13
1925	13	13	13	13	13	13	13	13	13	13	13	13
Washington, D. C.:												
1920	18	17½	17½	17½	16	16	16	16	16½	17½	17½	17½
1921	16½	15	16	16	13	13½	13½	13½	14	15	15	15
1922	13½	13	13	13½	13	13	13	13	13	14	14	14
1923	14	14	14	14	14	14	14	14	14	14	15	15
1924	15	15	15	15	14	14	14	14	14	14	14	14
1925	14	14	14	14	14	14	14	14	14	15	15	15
Richmond:												
1920	16	16	16	16	16	17	16	16	16	16	16	16
1921	16	16	14½	13	14	14	14	14	14	14	14	14
1922	14	14	14	13	13	13	13	13	13	13	14	14
1923	15	14	14	14	14	14	14	14	14	14	15	15
1924	14	14	14	14	14	14	14	14	14	14	14	14
1925	14	14	14	14	14	14	14	14	14	15	15	15
Jacksonville:												
1920	20	20	20	20	20	20	25	25	25	24	22½	22½
1921	------	18	18	------	------	20	------	19	20	20	18½	18½
1922	17½	------	17	14	14	14	16½	15½	17	16½	17	17
1923	17½	17½	18½	16	15½	15½	16½	16	17	18½	18	17½
1924	19	20	------	17½	16½	17	17	17	18½	18½	18½	18½
1925	18½	18½	18½	19	18½	18	17½	17½	18½	20½	20½	20½
Louisville:												
1920	16	------	16	16	16	16	16	16	16	16	16	------
1921	15	20	------	------	------	------	11	12	11	11	11	11
1922	11	9	9	9	9	9	9	10	11	11½	12	13
1923	13	12	12	12	12	12	12	12½	12½	13	13	13
1924	13	13	13	13	12	12	12	12	12	12	13	13
1925	13	13	12	12	12	12	12	12	12	14	14	14
Nashville:												
1920	17	17	17	17	17	17	17	17	17	19	17	17
1921	16	16	16	14	14	14	14	14	15	14	14	14
1922	11	11	11	11	11	11	11	11	11	11	11	------
1923	12	12	12	12	12	12	------	12	------	------	14	------
1924	14	14	14	------	14	12	12	12	14	14	14	14
1925	14	14	14	14	14	14	------	14	14	16	------	15
Birmingham:												
1920	21½	20	20	20	23	20	20	22½	22½	20	20	22½
1921	22½	22½	------	20	------	18	20	17½	17½	17½	17½	17½
1922	20	18	------	17½	15	16	------	17½	------	------	16	------
1923	17	16	17	16	16	16	16	16	16	16	15	15
1924	15	17	17	17	17	16	17	16½	16½	18	18	18
1925	18	18	18	18	------	18	18	18	18	18	------	17½
New Orleans:												
1920	19	19	19	19	17	17	17	17	19	19	19	18
1921	17	17	16	16	16	16	16	16	16	16	14	14
1922	14	14	14	14	14	14	14	14	------	14	14	14
1923	14	------	14	14	14	14	14	14	14	15	15	------
1924	------	15	15	15	14	14	14	14	14	14	14	14
1925	14	14	14	14	12	12	12	12	12	14	14	14
Dallas:												
1920	------	23	23	21	21	21	21	21	21	21	21	21
1921	------	19	17	------	15	------	15	------	15	------	------	15
1922	15	15	12	12	12	12	15	15	15	15	15	15
1923	15	15	15	15	15	15	15	15	------	------	15	15
1924	15	15	15	15	15	15	15	15	15	15	15	15
1925	15	15	15	15	15	15	15	15	15	15	15	15

TABLE 489.—*Milk, standard or grade B: Retail price per quart, delivered to family trade in cities, 1920–1925*—Continued

Market and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Butte:	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1920	15	15	15	------	15	15	15	15	------	15	15	15
1921	15	15	15	------	13	------	12½	12½	12½	13	13	12½
1922	12½	13	12½	12	12½	11½	11½	12	12	12	13	12½
1923	12	12½	13	12½	12½	12	12½	12½	13½	13	13	14
1924	------	13	13½	13	13½	13½	13½	13½	13½	13	13	13½
1925	12½	14	13½	13½	13½	13	14	14	13	13½	13½	13
Denver:												
1920	12½	12½	13	13	------	13	13	13	13	13	13	13
1921	13	13	13	12	11	11	11	11	10	10	10	10½
1922	10	10	9½	10	10	9½	10	10	9½	10	10	12
1923	12	12	12	12	12	12	12	12	12	12	12	12
1924	12	12	12	12	12	11	12	12	12	12	12	12
1925	12	12	10	10	10	10	10	12	12	12	12	12
Salt Lake City:												
1920	12½	12½	12½	12½	12½	12½	13	12½	12½	12½	12½	12½
1921	12½	12½	12½	12½	12½	12½	12½	12½	12½	12½	12½	12½
1922	10	8½	9	9	8½	8½	8½	8½	------	9	8½	9
1923	10½	10	10	------	10	------	------	10½	9½	10	10	10
1924	9½	9½	9½	9½	9½	9½	9½	------	9½	11	10½	10½
1925	10½	10½	10½	11	11	10½	10½	11	10½	------	------	10½
Seattle:												
1920	14	14½	13½	12	------	13	14	14	14	14	------	13
1921	13	11	13	13	12	------	------	12	------	12	12	11
1922	13	13	13	12	12	12	12	13	13	12½	13	13
1923	13	13	13	13	12	12	12	12	13	13	13	11
1924	------	13	------	12	11	11	11	11	11	9	9	10
1925	10	12	12	12	12	12	12	12	13	13	13	13
Portland, Oregon:												
1920	15	15	15	13	13½	13	13	14	14	14	14½	14½
1921	14	14	14	------	13	12	12	12½	12½	12½	12	12
1922	12	11	11	------	11	11	11	12	12	12	12	12
1923	12½	12	12½	12	12	12	13	12	12	12½	12	12
1924	12	11½	11	11	11	11	------	12	11½	11	11	10½
1925	------	11	11	11	------	11½	11	11½	11½	------	12	12
Los Angeles:												
1920	16	16	16	16	16	16	18	18	18	18	18	18
1921	18	16	16	16	------	16	15	14	14	14	14	14
1922	14½	14	14	14	14	14	14	14	14	14	15	15
1923	15	15	15	15	15	15	15	15	15	15	15	15
1924	15	15	------	16	15	15	17	15	17	17	14	14½
1925	14	14½	15	15	15	15	15	15	15	15	15	15
San Francisco:												
1920	16	16	15½	15	16	16	15½	17	17	17	17	17
1921	15½	15½	15	15	15	14½	13½	14	14	13½	13½	13½
1922	13½	12½	12½	12½	------	12½	12½	12½	12½	12½	12½	13
1923	12½	12½	12½	12½	12½	12½	------	12½	------	------	14	14
1924	14	14	14	14	14	14	14	14	14	14	14	14
1925	14	14	14	14	14	14	14	14	14	14	14	14

Division of Statistical and Historical Research. Compiled from reports of the Division of Dairy and Poultry Products.

TABLE 490.—*Production of dry milk, 1914–1924*

Year	Dry whole milk	Dry skim-milk	Total	Year	Dry whole milk	Dry skim-milk	Total
	Pounds	*Pounds*	*Pounds*		*Pounds*	*Pounds*	*Pounds*
1914	------	------	20, 987, 911	1920	10, 334, 000	41, 893, 000	52, 227, 000
1916	2, 123, 251	16, 463, 362	18, 586, 613	1921	4, 242, 471	38, 545, 718	42, 788, 189
1917	3, 138, 809	22, 624, 357	25, 763, 166	1922	5, 599, 000	40, 617, 000	46, 216, 000
1918	4, 154, 334	26, 202, 406	30, 356, 740	1923	6, 560, 000	62, 251, 000	68, 811, 000
1919	8, 660, 785	34, 945, 416	43, 606, 201	1924	7, 887, 000	69, 219, 000	77, 106, 000

Division of Dairy and Poultry Products.

TABLE 491.—*Total manufacturers' stocks of dry skim milk in the United States on the first of each month*

[Bulk—packed in barrels]

Month	1921	1922	1923	1924	1925
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*
January	11, 784, 374	8, 853, 869	1, 677, 419	8, 215, 132	6, 837, 413
February	11, 373, 445	9, 526, 134	2, 275, 223	9, 843, 452	5, 003, 319
March	16, 729, 213	8, 090, 247	2, 638, 710	11, 395, 848	4, 311, 368
April	11, 030, 141	7, 695, 252	4, 518, 720	12, 251, 921	4, 268, 206
May	10, 631, 869	8, 414, 504	3, 155, 051	12, 670, 035	4, 848, 526
June	11, 096, 441	9, 469, 760	5, 011, 105	12, 438, 676	6, 127, 967
July	11, 039, 889	7, 817, 015	5, 415, 835	12, 852, 951	5, 314, 646
August	11, 835, 044	7, 195, 409	5, 396, 843	13, 924, 336	4, 879, 406
Septmber	8, 861, 679	4, 464, 995	4, 629, 129	12, 939, 507	6, 082, 752
October	9, 241, 134	2, 971, 313	6, 520, 283	12, 475, 860	5, 610, 726
November	8, 069, 282	2, 680, 275	7, 693, 849	10, 312, 953	5, 254, 658
December	8, 000, 941	1, 942, 843	6, 723, 877	7, 616, 916	4, 730, 128

Division of Dairy and Poultry Products.

TABLE 492.—*Ice cream: Estimated production in the United States, 1909–1925.*

[Thousand gallons—i. e., 000 omitted]

Year	Gallons	Year	Gallons	Year	Gallons
1909	[1] 80, 000	1915	175, 224	1921	244, 000
1910	95, 450	1916	208, 320	1922	263, 520
1911	138, 000	1917	[2] 210, 000	1923	294, 900
1912	160, 000	1918	220, 000	1924	285, 550
1913	172, 380	1919	230, 000	1925	322, 720
1914	163, 761	1920	260, 000		

Division of Dairy and Poultry Products.
[1] 1909–1916, inclusive, from the International Confectioner.
[2] 1917–1925, inclusive, from Bureau of Agricultural Economics.

TABLE 493.—*Creamery butter: Production, United States, 1917–1924*

[Thousand pounds—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1917	43, 997	38, 459	47, 371	53, 809	75, 108	98, 898	94, 151	83, 936	76, 744	56, 176	42, 705	48, 157	759, 511
1918	44, 357	42, 389	49, 086	57, 332	85, 564	104, 385	97, 440	85, 148	72, 397	63, 886	45, 741	45, 560	793, 285
1919	52, 189	44, 343	54, 822	67, 487	103, 941	119, 357	104, 156	84, 458	68, 815	58, 723	45, 041	46, 662	849, 994
1920	49, 044	46, 355	56, 303	60, 622	86, 845	114, 695	110, 844	90, 669	77, 106	65, 129	53, 570	52, 395	863, 577
1921	58, 906	56, 556	67, 677	82, 763	119, 077	130, 633	111, 898	111, 638	89, 932	84, 374	70, 024	71, 460	1, 054, 938
1922	73, 505	67, 405	79, 532	86, 623	132, 351	150, 034	135, 231	114, 160	92, 359	83, 070	68, 628	70, 617	1, 153, 515
1923	83, 688	74, 134	88, 311	100, 547	134, 350	158, 371	148, 278	120, 802	102, 273	89, 297	74, 909	77, 254	1, 252, 214
1924	87, 468	86, 731	95, 760	106, 012	139, 954	161, 992	164, 443	137, 836	115, 102	100, 536	77, 282	82, 964	1, 356, 080

Division of Dairy and Poultry Products.

TABLE 494.—*Creamery butter production in factories in the United States, by States, 1918–1924*

[Thousands of pounds—i. e., 000 omitted]

States	1918	1919	1920	1921	1922	1923	1924
Alabama	912	696	398	742	917	831	839
Arizona	1,416	1,000	828	1,358	623	600	2,107
Arkansas	427	363	345	586	731	996	1,259
California	58,293	61,795	61,870	68,810	69,941	81,943	75,509
Colorado	12,652	13,144	12,979	15,290	16,410	18,625	18,130
Connecticut	813	930	877	1,165	986	753	820
Delaware	270	253	350	395	203	154	150
District of Columbia	6	5	503	577	475	10	----------
Florida	39	17	----------	11	81	99	20
Georgia	4	6	7	85	979	1,868	1,826
Idaho	4,330	4,514	4,660	4,935	7,582	9,883	13,431
Illinois	39,856	44,621	41,051	48,866	47,249	51,359	58,225
Indiana	40,624	44,659	39,223	47,854	48,158	51,484	54,355
Iowa	86,943	87,915	84,290	106,516	129,778	151,407	159,378
Kansas	36,660	35,642	32,899	37,000	40,204	42,674	46,844
Kentucky	3,177	5,321	7,875	10,746	12,010	12,244	12,942
Louisiana	70	46	55	160	87	185	125
Maine	1,453	1,141	727	719	596	402	568
Maryland	297	315	440	620	542	382	500
Massachusetts	2,439	2,849	3,198	3,895	2,999	1,844	1,790
Michigan	42,582	45,207	45,404	55,011	59,954	64,818	70,676
Minnesota	124,816	130,786	120,297	154,268	170,463	199,926	229,474
Mississippi	2,274	2,477	2,626	4,286	5,778	5,715	5,648
Missouri	30,175	38,411	35,228	42,422	46,565	51,818	56,891
Montana	4,581	5,389	5,168	7,439	7,713	10,667	13,874
Nebraska	62,477	60,467	56,661	66,653	74,809	76,748	81,423
Nevada	1,496	1,726	2,018	2,388	2,642	2,361	2,640
New Hampshire	459	397	300	305	309	424	271
New Jersey	133	179	143	214	261	437	642
New Mexico	10	6	6	29	129	185	251
New York	13,898	13,716	16,949	24,208	25,474	18,893	25,974
North Carolina	678	829	832	1,263	1,549	1,718	1,683
North Dakota	12,050	14,697	13,419	16,177	21,675	23,355	28,515
Ohio	54,555	60,573	65,594	78,724	84,193	79,195	80,932
Oklahoma	8,167	10,481	9,596	10,427	11,142	14,065	14,421
Oregon	15,357	14,432	14,288	15,289	17,158	18,128	20,993
Pennsylvania	10,977	12,466	11,422	14,629	12,803	13,142	12,444
Rhode Island	70	65	58	77	76	76	105
South Carolina	17	27	16	19	165	537	527
South Dakota	18,536	17,479	14,071	18,886	21,146	27,447	24,643
Tennessee	2,068	3,735	5,903	8,707	9,164	11,463	12,762
Texas	4,982	8,289	9,125	11,257	10,179	10,956	11,997
Utah	4,174	3,796	3,567	4,549	5,913	7,500	8,585
Vermont	10,858	10,677	13,253	14,919	12,289	11,935	12,294
Virginia	1,372	1,597	2,210	2,833	3,118	4,231	4,614
Washington	16,407	18,487	23,751	23,228	24,239	26,666	29,331
West Virginia	180	328	867	530	420	276	446
Wisconsin	82,860	85,054	97,355	124,504	142,235	139,895	153,335
Wyoming	1,286	1,140	875	1,377	1,403	1,894	1,941
Total	818,175	868,125	863,577	1,054,938	1,153,515	1,252,214	1,356,080

Division of Dairy and Poultry Products.
The compilations were made from reports of factories to the division.

TABLE 495.—*Butter: Estimated trade output*[1] *of farm and factory butter in the United States, by months*

[Thousand pounds—i. e., 000 omitted]

Month	1917	1918	1919	1920	1921	1922	1923	1924	1925
January	113,449	108,540	98,853	103,830	118,793	125,824	133,001	142,949	138,884
February	103,092	89,522	93,511	96,832	108,397	114,948	116,821	130,846	127,753
March	118,331	96,887	111,362	103,363	126,575	134,488	135,855	140,809	143,108
April	126,293	113,123	115,567	121,277	139,511	138,617	148,133	154,822	150,604
May	167,494	158,741	161,573	155,916	175,366	190,141	194,706	191,908	195,286
June	174,582	158,326	148,898	164,201	173,176	175,053	186,512	187,201	179,629
July	161,394	141,098	153,579	148,557	166,577	170,247	181,754	176,275	170,728
August	156,273	145,589	146,659	147,110	167,613	167,365	182,195	175,439	177,438
September	151,301	143,071	136,601	137,956	146,475	158,980	161,127	167,540	172,328
October	132,780	121,727	131,870	129,568	146,782	152,601	155,672	161,158	163,609
November	119,207	100,783	115,998	120,211	124,883	133,983	141,285	148,757	140,254
December	133,227	108,146	107,657	119,719	131,485	133,806	139,709	156,398	145,132

Division of Dairy and Poultry Products.

[1] Trade output is equivalent to movement into consumptive channels.

TABLE 496.—*Creamery butter: Net receipts at five markets, 1918–1925*

[Thousand pounds—i. e., 000 omitted]

NEW YORK

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1918	------	11,571	12,468	10,867	15,018	21,902	20,986	15,708	13,367	16,032	11,639	11,642	------
1919	13,599	13,325	13,419	14,157	18,934	23,493	19,314	16,335	16,244	13,405	12,635	9,954	184,805
1920	9,750	9,259	10,724	6,485	10,144	17,623	17,801	15,048	12,329	9,985	8,627	8,301	136,076
1921	10,003	9,116	10,721	11,793	17,640	22,513	17,885	19,562	17,514	14,113	12,866	12,311	176,037
1922	13,385	13,620	15,918	13,424	20,438	28,588	25,391	19,083	15,053	13,958	13,240	12,235	204,333
1923	16,829	12,841	16,706	15,409	20,444	26,469	23,594	18,172	15,823	14,924	12,750	13,070	207,031
1924	13,389	13,763	15,800	15,290	18,231	25,344	27,579	20,835	18,628	17,086	11,909	13,422	211,274
1925	15,207	13,847	15,546	15,654	18,971	24,131	22,034	18,252	18,439	16,964	13,755	14,517	207,317
Av. 1921–1925	13,763	12,637	14,938	14,314	19,145	25,409	23,297	19,181	17,091	15,409	12,904	13,111	201,198

CHICAGO

1918	------	11,005	11,802	11,873	12,207	20,088	21,990	15,225	12,568	12,256	9,084	9,608	------
1919	10,188	8,413	9,472	10,657	19,152	27,588	20,358	15,339	10,876	8,894	6,383	6,257	153,577
1920	8,321	7,809	9,422	8,551	12,887	22,214	22,843	16,699	12,776	9,438	7,592	7,557	146,109
1921	8,312	8,190	10,082	11,997	18,009	23,619	17,815	17,600	12,287	12,122	9,246	10,756	160,035
1922	11,265	9,959	11,726	11,885	19,483	26,156	22,457	17,841	12,949	11,072	9,632	11,736	176,161
1923	13,704	11,840	13,076	13,184	19,327	27,191	21,593	15,436	13,855	12,719	11,642	13,170	186,737
1924	14,012	15,641	16,932	15,779	22,260	27,699	27,255	21,193	15,998	14,258	10,672	11,650	213,349
1925	12,739	11,767	14,193	15,101	22,802	29,398	27,650	22,342	14,748	15,489	12,011	11,988	210,228
Av. 1921–1925	12,006	11,479	13,202	13,589	20,376	26,813	23,354	18,882	13,967	13,132	10,641	11,860	189,302

PHILADELPHIA

1918	------	681	2,166	2,054	2,968	4,084	3,903	3,364	2,827	2,848	2,226	2,396	------
1919	3,161	2,687	3,099	3,391	4,186	5,506	4,155	3,601	3,424	3,180	3,460	2,474	42,324
1920	2,698	2,910	2,809	2,450	3,044	5,402	4,836	3,946	3,884	3,118	2,488	2,617	40,202
1921	2,686	2,329	3,191	3,376	5,075	6,450	5,362	4,723	4,222	3,951	3,459	3,756	48,580
1922	4,536	3,836	4,032	3,678	5,377	7,267	5,681	4,913	3,779	3,578	3,368	3,474	53,519
1923	4,223	3,614	5,023	4,387	5,348	7,853	5,306	4,998	4,350	4,427	3,527	3,649	56,705
1924	4,332	4,359	4,345	4,807	5,719	8,751	8,165	5,891	4,747	4,520	3,802	3,946	63,384
1925	3,904	3,781	4,646	4,518	5,069	7,744	6,582	5,627	4,306	4,473	4,319	4,547	59,516
Av. 1921–1925	3,936	3,584	4,247	4,153	5,318	7,613	6,219	5,230	4,281	4,190	3,695	3,874	56,341

TABLE 496.—*Creamery butter: Net receipts at five markets, 1918–1925*—Continued

[Thousand pounds—i. e., 000 omitted]

BOSTON

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1918	------	1,540	3,283	2,802	4,938	9,634	9,000	5,214	3,723	4,588	3,054	2,875	------
1919	3,318	3,159	2,595	3,619	7,898	11,662	11,324	6,291	4,332	2,821	1,827	1,685	60,531
1920	2,658	2,626	4,437	3,066	1,698	13,498	11,909	7,233	5,590	3,614	1,966	2,045	60,340
1921	3,077	3,102	3,428	3,208	6,650	10,363	11,146	4,387	5,782	5,205	2,713	2,557	61,618
1922	3,957	3,550	3,963	3,622	9,017	14,020	9,558	7,158	4,967	3,785	3,706	3,369	70,672
1923	3,802	4,020	4,810	5,439	7,037	12,007	10,977	7,001	6,001	4,582	4,199	3,348	73,223
1924	4,362	5,026	5,368	5,482	7,754	13,400	12,538	7,422	6,437	4,551	2,331	2,351	77,022
1925	4,021	4,429	4,628	4,498	7,514	10,482	11,300	8,843	5,783	4,626	3,567	3,298	72,989
Av. 1921–1925	3,844	4,025	4,439	4,450	7,594	12,054	11,104	6,962	5,794	4,550	3,303	2,985	71,105

SAN FRANCISCO

1919	1,077	1,257	1,712	2,373	2,512	2,088	1,853	1,489	927	1,138	1,241	1,132	18,799
1920	1,265	1,415	1,848	2,669	2,352	1,868	1,482	1,520	1,412	1,530	1,330	1,337	20,028
1921	1,404	1,225	1,685	1,993	1,917	1,960	2,005	2,304	1,755	2,157	2,015	1,460	21,880
1922	1,481	1,345	1,829	2,226	2,321	2,331	1,851	1,919	1,729	1,894	1,583	1,520	22,029
1923	1,746	1,296	1,666	2,045	2,093	2,450	2,224	1,890	1,596	1,620	1,407	1,651	21,684
1924	1,355	1,432	1,637	2,220	2,973	2,293	2,169	1,941	1,659	1,535	1,448	1,787	22,449
1925	1,910	1,357	1,712	2,370	2,482	2,416	2,404	2,492	1,729	1,916	1,802	1,849	24,439
Av. 1921–1925	1,579	1,331	1,706	2,171	2,357	2,290	2,131	2,109	1,694	1,824	1,651	1,653	22,496

TOTAL

1919	31,334	28,841	30,297	34,197	52,682	70,337	57,004	43,055	35,803	29,438	25,546	21,502	460,036
1920	24,692	24,019	29,240	23,221	30,125	60,605	58,871	44,446	35,991	27,685	22,003	21,857	402,755
1921	25,482	23,962	29,107	32,367	49,291	64,905	54,213	48,576	41,560	37,548	30,299	30,840	468,150
1922	34,624	32,310	37,468	34,835	56,636	78,362	64,938	50,914	38,477	34,287	31,529	32,334	526,714
1923	40,304	33,611	41,281	40,464	54,249	75,970	63,694	47,497	41,625	38,272	33,525	34,888	545,380
1924	37,450	40,221	44,082	43,578	56,937	77,487	77,706	57,282	47,467	41,950	30,162	33,156	587,478
1925	37,781	35,181	40,725	42,141	56,838	74,171	69,970	57,556	45,005	43,468	35,454	36,199	574,489
Av. 1921–1925	35,128	33,057	38,533	38,677	54,790	74,179	66,104	52,365	42,827	39,105	32,194	33,483	540,442

Division of Statistical and Historical Research. Compiled from records of the Division of Dairy and Poultry Products.

TABLE 497.—*Butter: Gross receipts at six markets by State of origin, 1921–1925*

(Thousand pounds—i. e., 000 omitted)

NEW YORK

State	1921	1922	1923	1924	1925											
					Total	January	February	March	April	May	June	July	August	September	October	November	December
Minnesota	65,153	80,589	84,944	74,166	57,206	5,167	4,149	4,432	4,578	4,541	5,814	6,625	5,096	3,960	4,041	4,046	4,757
Iowa	33,793	43,489	48,440	57,781	56,833	3,871	3,844	3,970	4,263	5,614	7,401	6,530	4,931	4,660	4,267	3,511	3,971
Illinois	32,001	33,538	33,830	35,039	39,440	2,781	2,304	2,574	2,735	4,078,	4,361	3,927	3,485	4,906	3,704	2,422	2,163
Nebraska	18,312	24,074	20,359	24,811	25,088	1,885	1,902	1,806	1,862	2,275	2,818	2,245	2,075	2,068	2,399	1,706	2,047
Ohio	12,424	10,631	9,834	7,350	7,121	363	316	278	183	537	1,022	794	1,127	768	688	564	481
Wisconsin	11,609	12,803	11,771	13,730	16,903	1,186	1,227	1,208	1,376	1,467	1,565	1,712	1,418	1,591	1,758	1,318	1,077
New York	10,853	9,598	6,130	8,185	6,974	174	191	276	235	1,204	1,198	1,095	597	683	621	342	358
Michigan	8,490	7,213	7,075	11,265	15,498	1,458	1,362	1,215	1,659	802	2,163	1,570	1,331	1,368	1,251	524	795
Indiana	6,561	5,991	5,222	3,788	5,958	91	225	712	655	491	756	711	431	485	367	505	529
Missouri	3,404	3,674	4,649	3,930	5,396	487	266	578	254	640	463	296	437	549	355	703	368
Pennsylvania	1,952	2,349	1,279	988	525	52	16	125	11	29	42	18	52	88	56	11	25
Tennessee	1,454	1,185	1,132	859	1,034	69	66	53	27	80	142	82	152	146	54	80	83
California	1,048	364	288	87	102	2	10	18	21	15	-------	36	-------	-------	-------	-------	-------
Kansas	859	429	1,294	1,064	847	43	12	74	8	129	156	12	50	12	105	132	114
Massachusetts	824	417	259	647	345	46	57	128	36	39	7	7	1	-------	-------	24	-------
Virginia	597	652	417	684	432	40	28	7	8	23	84	46	62	77	21	19	17
South Dakota	388	353	260	270	279	10	3	2	-------	11	8	35	10	11	32	67	90
Kentucky	315	701	517	954	463	46	36	12	36	67	62	35	9	55	53	20	32
North Dakota	273	246	134	397	193	19	41	7	10	56	22	16	7	7	4	4	-------
Vermont	208	27	46	(1)	58	7	-------	1	6	11	4	1	23	3	2	-------	-------
Maryland	163	380	151	132	276	9	6	27	7	35	2	28	11	51	36	58	6
North Carolina	131	195	358	198	193	15	14	5	8	15	39	20	31	11	15	10	10
Georgia	94	95	98	97	178	18	12	17	5	8	7	4	7	4	19	32	45
Alabama	93	124	234	70	138	9	5	1	1	3	2	3	2	3	16	37	56
Washington	79	29	194	(1)	27	-------	-------	-------	-------	-------	-------	27	-------	-------	-------	-------	-------
New Jersey	48	80	129	(1)	22	3	3	1	-------	1	2	1	8	1	1	1	-------
Mississippi	35	54	142	(1)	203	5	2	2	28	43	2	2	29	78	2	4	6
Oklahoma	(1)	(1)	261	(1)	327	-------	-------	-------	-------	42	104	-------	42	67	43	-------	29
Montana	(1)	(1)	(1)	465	37	-------	-------	12	-------	-------	25	-------	-------	-------	-------	-------	-------
Other States	998	496	686	852	181	27	7	19	3	16	26	42	14	13	5	5	4
Canada	1,819	1,828	3,631	950	1,850	22	199	772	417	64	115	23	53	46	59	51	29
Total	213,978	241,604	243,764	248,759	244,127	17,905	16,303	18,332	18,432	22,336	28,412	25,943	21,491	21,711	19,974	16,196	17,092

[1] Included in other States.

[2] Not over 500 pounds.

TABLE 497.—*Butter: Gross receipts at six markets by State of origin, 1921–1925*—Continued

(Thousand pounds—i. e., 000 omitted)

BOSTON

State	1921	1922	1923	1924	1925											
					Total	January	February	March	April	May	June	July	August	September	October	November	December
Illinois	32,819	33,273	33,517	25,384	13,555	812	837	1,123	819	1,471	1,876	1,640	1,580	840	902	1,036	619
Minnesota	10,249	11,213	15,380	22,744	26,975	1,699	2,086	1,947	2,315	2,751	3,271	3,438	3,578	2,197	1,584	933	1,176
Vermont	7,338	6,339	5,854	5,923	4,071	297	235	237	451	477	690	556	264	203	238	191	232
New York	4,629	5,776	5,578	5,468	5,769	298	257	420	346	257	675	1,570	798	492	142	327	187
Iowa	3,100	3,982	3,023	3,361	4,360	240	288	239	262	648	655	667	422	406	321	109	103
Ohio	2,985	4,041	3,064	3,282	2,661	40	136	94	44	222	758	390	334	223	252	81	87
Indiana	2,821	2,554	2,722	2,436	1,434	26	56	27	10	75	211	250	355	94	90	158	82
Nebraska	2,593	2,152	3,274	6,378	8,086	263	423	269	312	1,019	1,400	1,460	957	769	518	399	297
Michigan	2,280	2,533	1,555	2,394	1,867	123	119	81	47	82	483	474	125	133	103	38	59
South Dakota	998	2,133	1,891	2,450	3,070	143	207	259	220	501	469	568	295	168	106	92	42
Missouri	913	884	646	1,404	3,170	86	64	133	41	226	396	469	360	388	388	238	381
Wisconsin	748	2,215	1,813	1,983	2,463	45	40	33	75	178	365	536	601	336	123	86	45
Massachusetts	571	870	762	723	989	273	27	36	5	25	58	4	48	23	218	92	180
New Hampshire	352	467	263	143	19	4	3	2	1	2	1	2	1	1	-------	1	1
Pennsylvania	246	303	188	26	143	3	49	67	-------	1	1	-------	-------	-------	-------	22	-------
Kentucky	221	132	72	91	46	-------	-------	-------	-------	-------	-------	-------	-------	22	23	-------	1
Kansas	148	404	402	507	1,048	39	5	23	24	212	194	137	109	61	97	71	76
Maine	139	197	87	196	192	42	42	63	3	4	5	12	3	5	1	11	1
Oklahoma	94	319	166	288	151	-------	16	2	3	22	21	-------	6	6	28	47	-------
North Dakota	4	302	1,545	1,230	2,167	88	98	129	83	220	299	543	246	143	90	96	132
Montana	-------	23	49	220	30	-------	13	-------	-------	24	-------	-------	2	-------	-------	-------	-------
Other States	700	361	231	261	201	20	-------	42	22	67	7	20	-------	-------	-------	-------	23
Canada	355	-------	137	29	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Total	74,303	80,473	82,650	86,921	82,476	4,541	5,001	5,226	5,083	8,484	11,835	12,736	10,084	6,510	5,224	4,028	3,724

CHICAGO

Wisconsin	64,997	74,773	70,588	79,928	75,941	4,655	4,171	4,572	5,659	7,775	10,776	10,731	7,812	5,446	6,043	4,064	4,239
Minnesota	31,612	37,483	39,611	46,767	54,859	3,221	2,999	4,052	4,049	5,950	7,461	7,294	5,390	3,628	4,060	3,274	3,481
Iowa	30,851	40,735	42,108	46,896	46,150	3,421	2,637	3,367	3,576	4,909	6,226	5,840	4,977	3,257	3,223	2,412	2,305
Nebraska	14,556	16,958	17,433	20,054	19,361	800	1,010	804	1,179	2,141	2,354	2,525	2,210	1,746	1,697	1,632	1,263
South Dakota	8,720	9,639	14,249	15,971	18,151	1,000	1,204	1,379	1,303	1,952	2,644	2,664	2,055	1,156	945	964	885
Kansas	7,792	5,935	10,300	11,098	7,864	518	459	423	533	1,076	1,415	677	802	329	424	435	773
Illinois	6,627	7,465	7,392	8,870	5,819	316	248	123	294	845	1,100	936	739	331	361	319	207
Missouri	5,815	8,959	11,188	11,975	9,678	525	562	706	524	1,083	1,336	976	1,392	734	754	574	512
North Dakota	2,961	3,049	3,418	6,301	8,511	600	671	660	733	800	840	1,010	890	657	675	547	428
Oklahoma	1,874	1,733	1,894	2,144	2,735	85	35	-------	22	558	524	219	382	293	255	156	206
Colorado	1,764	1,317	1,239	1,829	430	39	35	44	9	17	166	25	16	15	59	1	4
Ohio	1,449	874	425	360	619	1	80	392	8	8	22	28	51	47	26	3	3
Michigan	1,376	1,609	1,966	1,761	1,474	86	66	115	77	178	305	324	122	41	64	56	40
Indiana	974	1,027	1,109	1,102	805	65	89	56	20	114	62	108	41	34	80	58	78
Kentucky	643	291	871	560	539	11	4	9	25	64	65	26	133	68	68	29	37
Texas	583	35	216	102	78	-------	-------	20	23	-------	4	-------	1	30	-------	-------	-------
Montana	452	299	643	1,077	343	1	6	64	35	20	199	18	-------	-------	-------	-------	-------
Tennessee	104	34	112	35	137	1	1	17	20	57	9	14	2	-------	1	2	13
Mississippi	79	298	144	198	66	2	4	-------	23	9	23	-------	2	1	-------	1	1
California	44	192	319	77	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Pennsylvania	20	19	36	103	55	9	-------	2	3	-------	-------	20	-------	-------	-------	-------	21
Idaho	4	34	233	202	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
New York	3	49	25	153	69	25	-------	40	-------	4	-------	-------	-------	-------	-------	-------	-------
Utah	[1]	120	50	192	-------	[2]	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Other States	227	98	108	329	154	29	4	26	-------	24	31	13	10	7	1	3	6
Canada	-------	47	215	-------	470	-------	-------	298	152	-------	-------	-------	-------	20	-------	-------	-------
New Zealand	-------	29	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Total	183,527	213,101	225,892	258,084	254,308	15,410	14,235	17,169	18,267	27,582	35,562	33,448	27,027	17,840	18,736	14,530	14,502

PHILADELPHIA

Minnesota	17,502	24,776	27,194	34,753	32,168	1,459	1,410	1,526	1,882	2,696	4,232	4,310	3,926	2,666	2,678	2,786	2,597
Illinois	14,726	9,973	11,753	10,874	11,156	895	1,086	1,226	1,083	747	1,163	949	431	663	1,066	1,123	724
Ohio	4,860	4,309	2,699	3,437	3,224	306	173	193	147	175	448	417	400	221	276	231	237
Pennsylvania	4,723	3,797	2,571	2,297	1,735	132	125	194	110	168	148	214	129	179	147	83	106
Indiana	3,987	4,447	3,757	2,392	1,688	136	91	139	85	64	158	155	160	86	97	142	375

[1] Included in other States.

[2] Not over 500 pounds.

TABLE 497.—*Butter: Gross receipts at six markets, by State of origin, 1921–1925*—Continued

(Thousand pounds—i. e., 000 omitted)

PHILADELPHIA—Continued

State	1921	1922	1923	1924	1925												
					Total	January	February	March	April	May	June	July	August	September	October	November	December
Wisconsin	3,526	4,710	4,119	4,616	2,963	45	48	268	367	289	429	400	303	242	100	123	349
Michigan	2,485	1,605	1,812	3,446	6,415	786	1,053	971	972	595	920	403	150	134	124	93	214
New York	2,024	2,275	5,673	1,926	2,221	324	218	261	266	480	165	117	56	65	109	72	88
Iowa	961	1,391	1,314	2,783	2,313	87	92	60	48	278	479	199	311	198	263	180	118
Missouri	761	483	942	1,677	637	28	3	87	39	17	44	83	96	75	114	22	29
Tennessee	644	1,754	915	1,979	722	24	23		1	67	152	136	175	85	3	27	29
Virginia	494	1,145	1,247	1,638	1,196	96	86	80	64	109	156	135	168	100	74	67	61
California	444	357	59	224	24			24					5				
New Jersey	398	57	285	19	245			73	58		109						
North Dakota	274	253	42	44													22
Delaware	232	258	71	21	189		1	1	4	1	62		33	65			412
Nebraska	160	1,677	1,757	2,409	3,510	262	231	380	238	298	393	272	257	258	286	223	3
Maryland	102	453	1,057	137	138	94	1	2	3	8	5	2	4		5	11	4
South Dakota	101	6	11	110	76			10	11	2	46		1	1	1		1
Kentucky	92	159	119	187	57	3	1	19			3		27	2		1	77
Kansas	79	86	223	320	628	17	4	23	21	90	90	107	98	46	27	28	
North Carolina	55	1	14	7	26	1				12	11		1				1
West Virginia	24	93	160	145	146	5	1	9	4	5	18	24	34	18	13	7	8
Montana	8			221	30			30									
Mississippi	3	346	401	311	115					2	72	1	20	20			
Other States	223	140	151	367	269	22	2	34		29	44	18	22	42	5	6	45
Canada	38		252	391	173				62		26	20		42	23		
Total	58,926	64,551	68,598	76,731	72,064	4,722	4,649	5,610	5,465	6,132	9,373	7,962	6,807	5,208	5,411	5,225	5,500

SAN FRANCISCO

California	23,318	23,352	21,805	22,984	21,587	1,654	1,340	1,944	2,729	2,471	2,175	1,772	1,604	1,412	1,570	1,396	1,520
Oregon	647	585	1,177	948	1,195	44	44	15	28	211	237	221	100	25	86	71	113
Washington	573	332	682	606	469	116	33	16	4	15	99	122	3	42	2	17	
Nevada	412	388	293	258	252	38	13	16	22	31	34	12	9	17	38	13	9
Idaho	246	402	502	490	1,043	155	25	1	(3)	83	66	54	136	51	98	107	267

Montana	160	155	361	700	1,895	188	115	22	4	26	147	461	269	149	184	247	83
North Dakota	49	145	76		20									20			
Utah	38	136	179	158	98	30	3		1	14				1	7		42
Illinois	34	118		1	204								179	25			
Colorado	27	120	30	21	545						23	83	152		125	71	91
Nebraska	25	46	25	47	349	22						51	125	25	24	77	25
Minnesota		74		172	268								127	104		37	
Iowa		51	24		237		24					53	135				25
Wyoming		8		24													
Missouri		4	26														
New York			15														
Wisconsin				1	195									124	43	28	
Arizona				1													
Other States	201				69					69							
Canada			316		326						61		93	39	77	56	
Total	25,730	25,916	25,511	26,411	28,752	2,247	1,597	2,014	2,788	2,920	2,842	2,829	2,932	2,034	2,254	2,120	2,175

LOS ANGELES

State	1925												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
California	1,922	1,854	2,137	2,886	2,265	2,088	2,009	1,961	1,471	1,710	1,595	1,524	23,422
Oregon	68	28	41	4	45	424	306	117	82	81			1,196
Washington	25	148	1		155	351	265	42	2	106	22	40	1,157
Nevada	24	40	56	33	41	81	74	53	53		25	70	550
Idaho	600	489	392	572	937	1,188	987	733	644	649	606	758	8,555
Utah	125	160	125	54	19	97	77	70	92	218	101	81	1,219
Montana	24	80	17	24	302	520	387	72	24	51	21	19	1,541
Colorado	121	40	23	24	148	112	59	107	80	56	52	53	875
Wisconsin	1	24					1	24	28	95	65	56	294
Illinois		1					66	73	2				144
New York						6	111	119					236
Minnesota						71	116	83	65	38	37		410
Nebraska									27	70		18	115
Other States			1		3	5	59	121	18		2	1	210
Total	2,910	2,864	2,793	3,597	3,915	4,943	4,519	3,575	2,588	3,074	2,526	2,620	39,924

Division of Statistical and Historical Research. Compiled from reports of the Division of Dairy and Poultry Products.

[1] Not over 500 pounds.

TABLE 498.—*Creamery butter: Cold storage holdings, United States, 1915–1925*

[Thousand pounds—i. e., 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1915								68,578	101,662	99,450	92,719	71,849
1916	48,977	31,139	15,033	3,346	1,082	7,017	53,863	102,537	105,836	100,522	85,260	67,292
1917	46,134	30,474	16,952	6,805	3,607	9,953	49,982	88,992	108,179	109,154	100,115	79,928
1918	50,726	26,618	18,808	14,629	9,536	12,698	49,140	88,305	99,334	87,883	80,874	65,111
1919	43,910	36,777	24,191	11,909	9,659	29,435	90,158	125,546	131,388	121,816	100,474	73,654
1920	53,737	38,359	22,568	12,555	7,554	12,872	52,526	101,455	115,558	113,385	101,778	79,750
1921	58,682	41,486	27,103	14,732	7,712	21,682	61,991	82,838	92,292	90,116	77,983	65,129
1922	48,412	35,047	22,582	9,113	3,830	13,202	67,410	103,151	112,039	96,680	73,857	47,773
1923	26,819	16,122	8,910	4,824	3,248	10,112	62,768	101,774	102,731	96,117	76,472	51,508
1924	30,299	15,246	9,847	7,842	8,913	22,348	74,184	134,118	156,440	153,494	135,018	100,832
1925	65,694	45,748	28,789	10,875	3,739	13,036	63,687	109,075	128,403	114,172	94,916	74,754
Av. 1921–1925	45,981	30,730	19,446	9,477	5,488	16,076	66,008	106,191	118,381	110,116	91,649	67,999

Cold Storage Report Section.

TABLE 499.—*Butter: Estimated price per pound, received by producers, in the United States, 1910–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Weighted average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1910	28.3	27.1	26.0	25.6	24.8	23.7	23.6	24.5	25.7	26.6	27.4	27.8	25.5
1911	26.0	23.4	22.6	22.0	20.8	20.4	21.0	22.4	23.4	24.5	26.3	27.8	22.9
1912	28.6	28.1	26.6	26.0	25.4	24.1	23.6	24.0	24.9	26.2	27.8	28.6	25.7
1913	28.0	27.6	27.6	27.3	26.2	25.1	24.8	25.4	26.7	27.8	28.7	29.2	26.7
Av. 1910–1913	27.7	26.6	25.7	25.2	24.3	23.3	23.2	24.1	25.2	26.3	27.6	28.4	25.2
1914	28.3	26.7	25.4	24.4	23.3	22.8	23.3	24.5	25.6	26.2	27.4	28.6	25.1
1915	28.3	27.4	26.3	25.8	25.2	24.5	24.2	24.4	24.9	25.8	27.0	28.0	25.7
1916	28.0	27.4	27.4	27.8	27.2	26.1	25.9	26.8	28.2	30.0	32.8	34.2	28.0
1917	33.8	33.8	33.8	34.8	35.6	34.2	33.8	35.0	37.5	39.9	41.4	42.5	35.9
1918	43.4	43.6	42.0	40.3	39.2	38.4	39.0	40.6	44.3	48.4	51.2	53.8	42.7
1919	52.2	46.7	45.7	49.0	49.7	48.2	47.7	49.0	50.6	53.8	58.0	60.6	50.3
1920	59.6	56.8	56.0	56.8	55.6	52.6	51.8	52.2	53.2	54.2	54.5	51.8	54.3
Av. 1914–1920	39.1	37.5	36.7	37.0	36.5	35.3	35.1	36.1	37.8	39.8	41.8	42.8	37.4
1921	47.0	43.6	41.2	39.5	34.0	29.2	31.6	35.4	37.4	39.6	41.0	40.7	37.0
1922	37.4	34.6	34.6	34.6	34.1	33.1	33.0	33.4	34.8	37.4	40.2	42.9	35.3
1923	43.0	42.0	41.6	40.8	39.4	37.9	37.0	38.0	40.2	42.2	44.3	45.8	40.4
1924	44.9	44.4	43.2	40.3	38.3	36.3	37.0	37.7	38.2	38.8	39.3	41.8	39.4
1925	41.3	38.7	39.5	39.7	39.5	38.2	39.2	40.0	41.1	44.2	46.1	46.0	40.7

Division of Crop and Livestock Estimates.

TABLE 500.—*Butter: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	113	6,934	5	53,977	6	72,337	3	65,437
Australia	46	77,859	[1] 2,956	[1] 78,975	[1] 2,368	[1] 65,441	----	[1] 145,281
Canada	3,388	3,975	6,397	21,505	2,738	13,174	1,174	22,344
Denmark	6,241	195,530	1,174	210,557	1,593	246,157	2,049	272,033
Esthonia	----	----	----	[2] 2,203	----	[2] 5,174	----	[2] 7,025
Finland	2,370	26,337	29	18,373	103	14,476	14	18,184
Irish Free State	----	----	----	----	----	----	8,789	51,187
Italy	972	7,870	2,964	1,683	526	2,905	1,002	6,436
Latvia	----	----	[2] 1	[2] 2,074	[2] 48	[2] 6,399	[2] 1	[2] 7,773
Netherlands	4,987	75,133	10,816	50,981	1,687	52,709	3,613	76,570
New Zealand	47	38,761	----	125,462	7	140,016	1	142,179
Persia	2,201	3,059	[2] 623	[2] 796	[2] 443	[2] 648	----	----
Russia	2,202	150,294	[2] 867	[2] 7	----	[2] 10,978	----	[2] 49,462
Sweden	330	45,870	5,691	3,043	3,499	5,420	1,234	11,827
PRINCIPAL IMPORTING COUNTRIES								
Algeria	1,946	9	1,419	38	1,271	35	1,553	36
Austria	----	----	[2] 947	([2] [3])	3,600	1	3,864	[2] 10
Austria-Hungary	6,281	4,267	----	----	----	----	----	----
Belgium	14,024	3,125	41,828	294	21,337	220	10,318	543
Brazil	4,551	[4] 4	7	15	8	19	----	----
China	[5] 1,677	----	1,421	----	1,702	----	1,621	----
Cuba	1,459	----	1,701	----	2,317	----	----	----
Czechoslovakia	----	----	7,158	52	7,806	24	3,637	[2] 58
Dutch East Indies	4,152	----	6,000	----	7,322	----	[6] 5,650	----
Egypt	2,350	[4] 166	1,143	84	1,672	74	2,354	57
France	13,713	40,769	58,707	6,050	20,876	17,314	6,862	8,983
Germany	111,441	498	2,358	619	2,903	147	117,896	59
Greece	206	8	2,787	([2] [3])	5,677	[2] 6	10,727	----
Norway	976	3,137	7,654	14	5,826	26	1,273	414
Peru	462	20	1,038	16	1,337	12	1,814	10
Philippine Islands	1,665	----	1,032	----	853	----	1,298	----
Spain	939	259	694	231	378	391	[7] 104	[7] 179
Switzerland	11,106	44	15,988	8	14,684	20	19,993	252
Trinidad and Tobago	847	----	1,013	4	1,092	[2] 18	1,049	[2] 21
Union of South Africa	3,913	26	196	1,500	1,166	601	1,579	411
United Kingdom	455,489	1,179	427,398	1,673	554,803	2,092	579,761	2,239
United States	1,647	4,125	6,957	10,938	23,741	5,846	19,405	8,257
Other countries	12,273	37	12,375	5,148	13,418	7,462	12,613	6,842
Total	674,014	689,293	630,444	596,320	706,807	670,202	812,251	904,109

Division of Statistical and Historical Research. Official sources, except where otherwise stated.
Butter includes all butter made from milk, melted and renovated butter, but does not include margarine, cocoa butter or ghee.

[1] Year beginning July 1.
[2] International Institute of Agriculture.
[3] Less than 500 pounds.
[4] Two-year average.
[5] Four-year average.
[6] Java and Madura only.
[7] Six months.

TABLE 501.—*Butter, 92 score creamery: Average wholesale price, at leading markets 1910–1925*

NEW YORK

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
1910	33	30	33	31	28	28	28	29	30	30	31	30	30
1911	26	26	24	21	22	23	25	26	27	30	34	37	27
1912	39	32	31	33	30	27	27	27	30	31	34	37	32
1913	35	36	37	35	29	28	27	28	32	31	34	36	32
1914	33	29	28	25	26	27	28	30	31	32	35	34	30
1915	34	32	30	31	29	28	27	26	27	29	31	35	30
1916	33	34	37	36	31	30	29	31	34	35	39	40	34
1917	40	44	42	44	40	39	39	41	44	45	46	50	43
1918	52	50	44	42	42	44	45	46	56	58	63	69	51
1919	62	52	62	64	58	52	53	55	59	68	71	72	61
1920	65	66	67	71	61	57	57	55	59	60	63	55	61
Av. 1914–1920	46	44	44	45	41	40	40	41	44	47	50	51	44
1921	52	47	48	46	32	33	40	43	43	47	45	44	43
1922	37	37	38	38	38	37	36	35	41	46	51	54	41
1923	52	50	49	46	42	39	39	44	46	48	53	55	47
1924	53	50	47	38	39	41	40	38	38	39	43	45	43
1925	40	41	48	45	43	42	43	43	48	51	51	49	45
Av. 1921–1925	47	45	46	43	39	38	40	41	43	46	49	49	44

CHICAGO

1918			41	42	42	42	43	45	55	56	62	67	50
1919	60	49	60	62	57	51	51	53	57	64	69	68	58
1920	63	63	66	64	57	55	55	54	57	57	60	51	58
1921	48	47	47	44	29	32	39	40	42	45	44	43	42
1922	34	37	38	37	34	36	34	34	39	44	50	53	39
1923	50	50	49	45	40	39	38	43	46	47	52	53	46
1924	52	49	46	37	37	39	38	37	37	37	42	42	41
1925	39	40	48	43	41	42	42	42	46	49	50	47	44
Av. 1921–1925	45	45	46	41	36	38	38	39	42	44	48	48	42

PHILADELPHIA

1918					46	44	45	46	56	59	63	69	54
1919	62	52	62	65	59	53	54	56	59	68	70	73	61
1920	65	67	68	71	62	58	58	56	60	60	63	55	62
1921	53	48	49	47	33	33	40	43	43	47	46	45	44
1922	37	37	38	38	37	37	37	36	42	47	52	55	41
1923	52	50	50	46	42	40	40	45	47	49	53	55	47
1924	53	51	47	39	40	42	41	39	39	39	43	45	43
1925	41	42	48	40	44	43	44	44	49	52	52	50	46
Av. 1921–1925	47	46	46	42	39	39	40	41	44	47	49	50	44

BOSTON

1918					46	44	45	46	55	59	62	67	53
1919	63	51	62	65	59	53	53	56	58	64	69	71	60
1920	65	66	68	69	61	58	58	57	59	59	60	54	61
1921	52	48	48	46	32	34	41	43	43	46	45	44	44
1922	37	37	39	38	37	37	37	36	40	46	50	54	41
1923	52	50	51	47	43	40	40	44	46	48	51	53	47
1924	53	52	48	39	39	42	40	39	38	38	42	44	43
1925	41	41	47	45	43	43	44	44	48	51	50	49	46
Av. 1921–1925	47	46	47	43	39	39	40	41	43	46	48	49	44

SAN FRANCISCO

1918										59	58	62	60
1919	56	49	56	56	56	54	54	55	60	63	64	65	57
1920	62	62	59	56	53	54	57	59	64	58	53	48	57
1921	42	46	38	34	31	34	39	42	44	46	46	41	40
1922	36	40	33	32	35	38	39	39	46	49	45	47	40
1923	48	46	42	41	42	44	42	45	48	47	48	48	45
1924	47	46	44	38	37	40	39	40	39	39	39	43	41
1925	44	42	43	40	40	44	47	49	52	54	54	49	46
Av. 1921–1925	43	44	40	37	37	40	41	43	46	47	46	46	42

Division of Statistical and Historical Research. Compiled from Urner-Barry reports, 1910–1917, average of daily range; subsequently from reports of the Division of Dairy and Poultry Products, average of daily prices.

TABLE 502.—*Butter, first quality British: Average price per pound in Great Britain, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	30.4	29.9	29.4	27.9	25.9	24.8	25.9	27.9	28.4	29.4	30.4	31.4	28.7
1910	30.9	31.4	30.9	29.4	27.4	25.3	25.9	26.9	27.9	28.9	29.4	30.4	28.7
1911	30.4	29.9	29.4	27.9	25.9	24.8	25.9	29.4	30.4	31.9	32.4	32.9	29.3
1912	32.4	32.9	31.4	29.4	26.4	25.4	26.9	27.9	28.9	29.9	30.9	31.9	29.5
1913	31.9	31.9	31.4	28.9	26.9	25.4	26.4	27.9	28.9	29.4	30.4	31.4	29.2
Av. 1909–1913	31.2	31.2	30.5	28.7	26.5	25.1	26.2	28.0	28.9	29.9	30.7	31.6	29.0
1914	31.4	30.9	30.4	28.9	26.4	25.4	27.0	31.2	30.6	31.0	32.2	33.0	29.9
1915	33.8	34.6	33.5	32.0	29.4	29.3	30.8	32.4	33.2	35.6	36.0	37.9	33.2
1916	38.1	37.7	37.7	36.7	34.7	32.7	34.2	38.2	40.6	42.1	44.6	46.0	38.6
1917	48.0	49.0	49.0	48.6	44.6	42.1	44.1	48.5	51.5	54.4	54.9	55.4	49.2
1918	55.9	56.4	56.4	57.0	56.0	55.5	54.9	54.5	54.5	55.0	57.0	58.0	55.9
1919	58.0	58.0	56.8	56.2	56.3	55.7	53.5	51.6	50.5	50.4	49.3	45.5	53.5
1920	44.7	64.4	71.1	73.0	60.2	57.6	59.4	63.7	68.0	73.8	74.6	76.4	65.6
Av. 1914–1920	44.3	47.3	47.8	47.5	43.9	42.6	43.4	45.7	47.0	48.9	49.8	50.3	46.6
1921	75.1	72.5	64.0	56.1	44.7	38.1	42.4	47.9	44.2	45.6	47.6	49.3	52.3
1922	43.6	42.3	39.7	40.5	38.4	36.6	43.5	46.5	47.1	48.1	50.4	52.8	44.1
1923	53.6	52.8	51.7	47.5	36.6	33.8	33.9	40.3	43.1	44.8	46.4	49.1	44.5
1924	48.8	47.1	44.6	40.1	34.1	33.3	38.7	44.3	47.6	49.5	53.5	55.9	44.8
1925	55.3	51.3	49.0	47.8	41.2	39.4	45.0	49.6	50.5	52.6	54.5	55.8	49.3
Av. 1921–1925	55.3	53.2	49.8	46.4	39.0	36.2	40.7	45.7	46.5	48.1	50.5	52.6	47.0

Division of Statistical and Historical Research. Compiled from Ministry of Agriculture and Fisheries, Agricultural Statistics of Great Britain and Agricultural Returns of Great Britain. Average of wholesale prices at country markets. Conversions at par of exchange 1904–1913; subsequently at monthly average rates of exchange as quoted by Federal Reserve Board.

TABLE 503.—*Butter: Average export price per pound in Copenhagen, Denmark, 1914–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1914	26.1	25.6	25.6	24.1	23.4	23.9	25.9	24.4	25.0	27.8	27.3	29.9	25.8
1915	29.6	26.9	28.0	27.6	29.6	29.1	31.0	32.6	34.7	41.6	40.5	36.6	32.3
1916	33.8	35.4	37.8	36.8	36.3	35.7	36.7	40.1	42.1	42.6	44.3	44.9	38.9
1917	45.3	39.6	38.4	37.2	38.6	40.5	45.0	49.7	54.6	65.4	68.4	65.5	49.0
1918	64.2	63.7	64.0	65.0	65.3	64.7	65.1	65.0	62.0	58.3	75.6	76.0	65.7
1919	75.8	73.8	72.4	71.1	58.2	50.8	48.4	46.5	54.7	53.8	59.5	52.1	59.8
1920	48.9	42.1	49.2	49.8	44.2	44.8	42.4	42.9	43.6	45.7	44.7	44.0	45.2
Av. 1914–1920	46.2	43.9	45.1	44.5	42.2	41.4	42.1	43.0	45.2	47.9	51.5	49.9	45.2
1921	42.4	39.3	40.4	43.9	33.5	32.4	38.3	41.1	36.4	38.3	39.9	31.8	38.1
1922	31.1	31.0	32.9	33.8	33.5	37.0	39.4	39.1	41.1	40.7	39.9	39.7	36.6
1923	40.5	41.3	41.0	34.5	29.5	29.3	30.7	34.7	40.3	38.9	39.4	41.4	36.8
1924	40.0	39.5	36.9	31.3	36.4	33.4	37.8	41.1	42.3	46.1	44.2	46.8	39.6
1925	42.0	45.4	46.1	40.6	36.9	39.4	40.5	44.2	45.7	46.5	44.6	37.8	42.5
Av. 1921–1925	39.2	39.3	39.5	36.8	34.0	34.3	37.3	40.0	41.2	42.1	41.6	39.5	38.7

Division of Statistical and Historical Research. Danish Butter Journal (Smor Tidende) official quotations. For earlier years, 1882–1913, see the United States Department of Agriculture Yearbook, 1923, p. 923.

Conversions from Danish quotations in ore per pound (1.1023 pounds) at par of exchange (100 ore = 26.8 cents) to July, 1914; July, 1914, to date from weekly quotations in kroner per 100 kg., at average monthly exchange rate as quoted by Federal Reserve Board.

TABLE 504.—*American cheese: Production in the United States, 1917–1924*

[Thousand pounds, i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1917	8,519	9,415	11,918	17,577	28,932	38,796	35,296	32,248	37,613	22,303	14,262	8,070	264,949
1918	8,143	7,860	11,992	17,931	31,285	40,184	34,332	29,996	25,424	18,862	12,172	9,097	247,278
1919	10,956	11,855	19,009	21,642	34,849	44,599	35,465	30,940	26,257	23,114	13,107	10,044	281,837
1920	10,457	11,509	14,954	18,856	29,832	41,376	34,313	26,787	22,935	20,054	13,308	10,303	254,684
1921	11,889	12,857	17,678	23,521	34,556	36,444	26,977	27,652	23,612	21,496	13,426	11,618	261,726
1922	12,837	13,927	18,774	21,740	31,349	36,254	33,265	29,496	25,581	25,785	18,382	15,416	282,806
1923	15,092	15,326	20,184	24,014	32,942	41,382	38,288	31,822	28,648	25,566	18,236	16,608	308,108
1924	17,718	18,886	22,955	24,597	33,657	43,517	40,716	33,602	30,539	26,210	17,252	15,046	324,695

Division of Dairy and Poultry Products.

TABLE 505.—*Cheese, Swiss: Production by months, United States, 1920–1924*

[Thousand pounds—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1920	282	259	314	975	3,146	4,412	3,548	2,905	2,386	1,372	563	268	20,430
1921	181	225	371	776	3,596	4,164	3,379	3,412	2,959	2,358	862	395	22,678
1922	264	257	334	990	3,046	3,543	3,529	3,187	2,474	1,573	550	236	19,983
1923	196	199	298	1,018	2,948	3,468	4,015	3,683	3,368	2,756	1,855	751	24,555
1924	293	299	325	727	2,862	3,873	4,095	3,577	3,016	1,881	699	197	21,844

Division of Dairy and Poultry Products.

TABLE 506.—*Cheese: Production, all kinds, United States, by States, 1918–1924*

[Thousand pounds—i. e., 000 omitted]

State	1918	1919	1920	1921	1922	1923	1924
Alabama				29		51	
Arizona	639	464	227	532	89	138	525
California	7,992	8,940	8,518	7,656	4,450	4,508	3,696
Arkansas					18		
Colorado	398	508	531	750	878	1,183	1,560
Connecticut	21			26			
Delaware	111	200	147	130	70	2	
District of Columbia			43				
Florida	2						
Georgia						3	44
Idaho	2,154	2,582	1,727	2,161	3,368	5,316	7,670
Illinois	5,190	6,295	3,965	4,680	5,124	5,980	6,597
Indiana	169	185	187	186	106	174	366
Iowa	1,401	954	636	373	416	458	627
Kansas	37	25	19	62	147	110	176
Louisiana		1					
Maine							34
Maryland	94	238	107	47	60	18	
Massachusetts	101	107	77		1		62
Michigan	6,661	7,690	6,567	7,148	5,369	5,919	7,419
Minnesota	7,749	9,767	5,841	5,856	5,538	7,473	9,990
Missouri	85	305	380	382	97	224	110
Montana	481	318	295	210	323	747	972
Nebraska	32	39	3	61	44	71	135
Nevada				25	24		79
New Hampshire	407	259	700	634	316	393	180
New Jersey	469	856	693	490	974	271	1,070
New Mexico					74	135	92
New York	56,764	68,855	53,216	55,808	66,525	53,623	55,674
North Carolina	215	229	109	86	103	112	83
Ohio	4,789	4,547	2,957	4,485	3,456	3,164	3,331
Oklahoma	3	8			2		37
Oregon	7,168	8,465	8,482	8,900	8,852	7,826	10,073
Pennsylvania	6,139	6,308	6,245	6,487	5,094	5,326	4,884
Rhode Island	3	4					
South Dakota	27	56	9	19		8	43
Tennessee	44	51	26	56	72	284	398
Texas	34	18	3	19	37		2
Utah	1,131	915	855	1,027	3,219	2,139	2,174
Vermont	1,701	3,582	1,850	1,910	1,437	1,644	2,262
Virginia	65	60	35	28	112	163	152
Washington	882	1,257	1,463	2,130	3,146	3,062	3,264
West Virginia	24	56	29	41	16		
Wisconsin	242,433	263,481	255,286	241,861	247,007	282,381	288,214
Wyoming	1,332	1,612	1,203	1,543	3,416	1,791	1,945
Total	356,947	399,237	362,431	355,838	369,980	394,697	413,940

Division of Dairy and Poultry Products.

TABLE 507.—*Cheese: Net receipts at five markets, 1918–1925*

[Thousand pounds—i. e., 000 omitted]

NEW YORK

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1918	3,256	3,518	2,657	2,844	3,899	5,951	6,687	4,956	3,670	5,123	3,833	4,156	50,550
1919	3,479	3,173	4,393	5,114	7,098	7,075	6,972	5,428	7,121	6,367	4,621	4,294	65,045
1920	3,337	2,431	3,803	1,398	4,693	6,152	5,703	5,278	3,483	3,208	3,756	3,762	47,004
1921	3,274	3,337	2,883	4,068	6,003	5,856	6,655	4,772	4,308	4,415	3,657	2,753	51,981
1922	2,739	2,775	4,063	4,466	5,047	6,376	5,379	4,642	3,942	3,866	3,607	3,207	50,109
1923	2,908	3,385	4,341	4,196	4,610	5,207	6,110	4,757	3,845	3,791	3,544	2,731	49,425
1924	3,299	2,859	3,367	3,050	3,609	4,706	5,235	3,042	3,594	3,333	3,684	3,181	42,959
1925	3,098	2,412	3,002	3,080	3,132	4,585	5,728	4,993	4,571	4,671	3,952	2,939	46,163
Av. 1921–1925	3,064	2,954	3,531	3,772	4,480	5,346	5,821	4,441	4,052	4,015	3,689	2,962	48,127

CHICAGO

1918			6,202	5,549	4,957	7,614	8,536	6,674	6,016	5,698	4,634	5,019	
1919	5,925	4,854	5,495	6,287	7,833	9,778	8,539	8,323	7,362	6,648	5,073	4,902	81,019
1920	5,328	5,100	7,069	5,067	7,744	11,194	9,183	6,599	5,707	6,255	6,795	5,556	81,597
1921	6,042	5,423	7,147	6,840	9,290	9,832	7,112	6,930	6,734	8,091	6,147	6,261	85,849
1922	5,940	6,139	8,093	7,875	10,262	11,384	10,121	10,669	9,419	10,452	8,893	8,477	107,724
1923	7,775	7,243	8,124	9,053	10,745	15,039	13,874	11,750	10,652	12,608	9,216	7,566	123,645
1924	8,135	10,358	10,267	10,601	11,949	12,337	14,204	12,943	11,516	10,264	8,341	9,109	130,024
1925	9,106	8,398	9,513	9,740	11,249	14,032	13,853	14,171	11,254	11,582	9,801	8,436	131,129
Av. 1921–1925	7,398	7,512	8,629	8,822	10,699	12,525	11,833	11,293	9,915	10,599	8,480	7,970	115,674

PHILADELPHIA

1918			642	629	1,228	1,148	2,315	1,389	940	1,262	706	877	
1919	539	881	1,529	1,654	1,965	2,226	2,152	1,704	1,740	2,887	2,930	1,185	21,392
1920	874	1,049	1,489	626	1,743	2,104	1,657	2,189	1,362	1,130	1,431	1,221	16,866
1921	1,116	1,064	1,280	1,396	2,223	2,602	2,491	2,311	2,086	1,920	1,369	1,094	20,952
1922	1,144	1,120	1,506	1,523	1,750	1,827	1,846	1,887	1,815	2,101	1,738	1,067	19,324
1923	964	982	1,236	1,297	1,361	1,915	2,114	2,000	1,972	2,217	1,310	995	18,363
1924	1,000	1,086	1,188	897	1,092	1,850	2,061	1,704	1,680	1,973	1,218	1,132	16,836
1925	1,239	1,009	1,067	969	1,847	2,635	2,383	1,825	1,905	1,848	1,331	1,037	19,095
Av. 1921–1925	1,093	1,052	1,255	1,216	1,655	2,166	2,179	1,945	1,888	2,013	1,393	1,065	18,920

BOSTON

1918			647	453	1,462	2,559	2,305	1,721	972	778	574	476	
1919	351	517	1,100	1,088	2,000	2,374	2,898	2,091	1,422	1,869	1,231	791	17,722
1920	620	274	622	511	948	1,422	2,290	1,749	1,343	1,479	1,256	483	12,997
1921	435	574	691	685	978	2,503	1,701	1,173	1,262	1,456	1,249	501	13,208
1922	408	590	663	1,004	1,201	2,220	1,963	1,461	1,410	1,104	910	587	13,521
1923	828	436	947	1,029	1,195	2,074	2,304	1,936	1,165	1,777	1,302	921	15,914
1924	740	845	672	927	1,341	1,914	2,064	1,204	1,248	993	927	850	13,725
1925	792	432	704	980	1,218	1,576	2,248	1,484	1,755	2,018	1,097	950	15,314
Av. 1921–1925	642	587	735	925	1,187	2,057	2,056	1,452	1,368	1,470	1,097	762	14,336

SAN FRANCISCO

1918							693	1,372	785	935	651	764	
1919	694	846	869	1,219	1,263	1,195	1,706	871	874	739	796	1,027	12,089
1920	935	810	935	981	1,012	1,002	964	601	986	852	564	611	10,203
1921	621	885	757	963	867	887	1,365	813	533	771	806	364	9,632
1922	503	634	464	697	886	963	902	1,147	877	800	551	733	9,157
1923	588	571	706	858	1,052	1,171	1,362	1,237	985	932	1,185	1,043	11,690
1924	725	944	1,046	760	1,039	1,234	1,579	1,108	837	915	714	650	11,482
1925	973	534	612	667	1,083	1,197	1,613	1,703	1,035	910	878	650	11,855
Av. 1921–1925	682	714	717	777	985	1,090	1,364	1,201	853	866	827	688	10,763

TOTAL

1918							20,536	16,112	12,383	13,796	10,398	11,292	
1919	10,988	10,271	13,386	15,362	20,069	22,648	22,267	18,417	18,519	18,491	14,650	12,199	197,267
1920	11,094	9,655	13,918	8,583	16,140	21,874	19,797	16,416	12,831	12,924	13,802	11,633	168,667
1921	11,488	11,283	12,758	13,962	19,361	21,680	19,324	15,999	14,923	16,653	13,228	10,973	181,622
1922	10,734	11,258	14,789	15,565	19,146	22,770	20,211	19,806	17,463	18,323	15,699	14,071	199,835
1923	13,063	12,617	15,354	16,433	18,963	25,406	25,784	21,680	18,619	21,325	16,557	13,256	219,037
1924	13,899	16,092	16,540	16,175	19,030	22,041	25,143	19,996	18,855	17,479	14,884	14,922	215,056
1925	15,202	12,845	14,898	15,436	18,529	24,025	25,825	24,176	20,520	21,029	17,059	14,012	223,556
Av. 1921–1925	12,877	12,819	14,868	15,512	19,006	23,184	23,253	20,331	18,076	18,962	15,485	13,447	207,821

Division of Statistical and Historical Research.
Compiled from records of the Division of Dairy and Poultry Products.

TABLE 508.—*Cheese: Net receipts at six markets by State of origin, 1921–1925*

[Thousand pounds—i. e., 000 omitted]

NEW YORK

State	1921	1922	1923	1924	1925											
					Total	January	February	March	April	May	June	July	August	September	October	November	December
New York	22,413	21,770	16,909	14,478	14,107	1,154	1,004	1,118	1,143	1,029	1,308	1,453	990	1,129	1,450	1,464	865
Wisconsin	17,044	16,100	19,758	16,339	18,978	1,166	756	952	1,226	967	2,241	2,843	2,597	2,195	1,799	1,154	1,082
Illinois	7,061	6,997	8,535	8,382	7,211	395	424	446	351	668	535	831	850	748	977	510	476
Pennsylvania	1,623	1,181	955	618	1,105	66	68	72	75	64	50	62	63	238	108	113	126
Michigan	787	506	619	644	472	20	------	62	2	48	152	23	78	52	28	------	7
Ohio	773	632	321	136	374	42	61	44	26	48	------	1	30	56	------	43	23
Massachusetts	420	189	228	235	248	107	6	41	16	26	8	15	17	1	------	------	11
Indiana	187	182	277	581	2,075	77	------	170	110	192	207	251	237	54	106	374	297
Nebraska	144	23	4	240	48	------	------	------	------	------	------	------	27	------	------	21	------
Missouri	131	315	170	48	98	------	------	1	------	------	------	21	------	12	41	------	23
Minnesota	112	494	249	352	118	------	------	------	------	------	------	22	------	------	------	95	1
New Jersey	97	46	40	48	16	1	------	1	1	1	2	6	------	1	1	1	1
Iowa	57	94	206	295	777	20	26	42	32	28	5	194	100	77	146	104	3
Virginia	24	5	4	49	23	------	18	------	------	------	------	1	------	------	------	------	4
Tennessee	15	74	3	8	15	------	------	------	------	------	15	------	------	------	------	------	------
Vermont	14	97	305	79	273	31	24	41	66	44	62	3	------	------	1	------	1
Other States	625	215	414	172	86	2	6	2	1	13	(1)	2	3	3	2	51	1
Canada	454	1,189	428	255	140	17	19	10	31	4	------	1	2	5	11	22	18
Total	51,981	50,109	49,425	42,959	46,164	3,098	2,412	3,002	3,080	3,132	4,585	5,729	4,994	4,571	4,670	3,952	2,939

BOSTON

New York	5,868	6,527	7,402	5,209	4,546	151	125	262	254	395	494	724	490	496	654	280	212
Wisconsin	3,294	3,091	3,392	4,317	7,787	512	284	301	498	523	912	1,212	664	1,028	1,063	443	347
Illinois	1,782	2,091	3,881	2,931	1,782	29	36	69	131	110	77	162	198	178	192	293	307
Vermont	1,444	471	623	736	432	17	13	20	56	143	14	70	68	5	10	7	9
Pennsylvania	132	136	183	181	206	19	14	33	29	8	9	14	5	4	11	25	35
Ohio	71	35	23	137	201	31	13	16	6	25	23	16	17	17	37	------	------
New Hampshire	55	75	50	41	6	2	1	2	1	------	------	------	------	------	------	------	------
Massachusetts	39	32	27	13	8	------	------	------	2	------	------	1	1	------	------	------	4
Indiana	36	66	28	1	47	------	------	------	------	------	------	23	------	------	------	------	24
Maine	35	17	38	5	4	------	2	------	1	1	------	------	------	------	------	------	------
Michigan	31	296	191	74	198	26	------	------	------	13	46	20	26	26	20	21	------

Other States	142	475	71	23	97	5	4	1	2	----	1	6	6	1	31	28	12
Canada	279	209	5	57	----	----	----	----	----	----	----	----	----	----	----	----	----
Total	13,208	13,521	15,914	13,725	15,314	792	492	704	980	1,218	1,576	2,248	1,484	1,755	2,018	1,097	950

CHICAGO

Wisconsin	76,706	95,656	110,648	117,439	119,244	8,241	7,635	8,569	9,059	9,839	12,765	12,848	13,013	10,303	10,651	8,821	7,500
Illinois	3,102	4,011	4,497	3,965	4,592	265	256	230	337	526	672	575	400	399	382	280	270
Minnesota	2,687	1,960	3,177	2,733	3,108	120	166	190	129	500	199	203	406	201	298	433	263
Michigan	1,687	1,415	729	1,241	118	2	20	18	1	----	63	----	1	1	7	4	1
Montana	313	26	203	311	81	----	----	8	----	1	----	33	----	----	----	----	39
Iowa	287	810	705	620	606	22	40	64	115	36	39	49	81	78	12	40	30
New York	221	2,391	2,429	1,667	1,282	170	80	167	47	171	256	118	24	107	74	37	31
Kansas	166	3	51	30	45	----	22	----	----	----	----	----	22	----	1	----	----
Pennsylvania	163	308	289	158	115	16	29	20	12	3	3	2	4	1	4	14	7
California	113	57	----	----	9	----	----	9	----	----	----	----	----	----	----	----	----
Ohio	99	301	147	91	745	154	6	186	2	103	1	1	97	67	81	24	23
South Dakota	78	17	16	64	2	----	----	----	----	----	----	----	----	----	1	1	----
Missouri	56	222	83	188	65	14	5	4	6	1	----	1	----	32	----	----	2
Texas	32	9	15	2	38	1	16	----	----	----	----	----	----	----	----	1	20
Colorado	27	104	16	34	192	6	84	27	----	----	----	6	4	2	61	1	1
Indiana	16	22	66	50	49	2	6	2	6	1	10	12	2	1	5	1	1
Utah	11	8	14	7	8	1	----	----	----	----	----	----	1	2	----	4	----
New Jersey	----	45	24	95	32	----	----	----	----	----	----	----	----	----	----	----	32
Idaho	----	19	168	675	337	24	1	----	----	----	----	----	----	----	----	113	199
Other States	85	90	122	281	81	----	9	19	2	10	1	5	9	----	5	4	17
Canada	----	250	246	373	380	62	23	----	24	58	23	----	107	60	----	23	----
Total	85,849	107,724	123,645	130,024	131,129	9,100	8,398	9,513	9,740	11,249	14,032	13,853	14,171	11,254	11,582	9,801	8,436

PHILADELPHIA

Wisconsin	8,487	10,638	8,884	8,003	10,850	434	483	425	362	972	1,731	1,723	1,158	1,345	1,125	612	480
New York	7,068	4,660	4,538	3,655	3,627	430	407	336	252	322	307	236	144	222	252	439	250
Illinois	2,557	2,955	4,126	4,333	4,073	367	114	224	293	508	434	421	481	309	415	252	255
Pennsylvania	2,041	517	245	240	84	8	2	13	4	23	24	2	2	1	1	----	4
Ohio	205	223	136	26	11	----	----	----	----	1	----	----	----	----	1	----	9
New Jersey	121	14	36	3	3	----	----	----	----	----	1	----	----	1	----	----	1
Indiana	100	95	142	95	201	----	----	47	----	----	70	----	----	1	24	28	31
Michigan	45	115	131	199	111	----	3	----	22	20	----	----	40	26	----	----	----
Minnesota	41	1	54	----	68	----	----	----	----	----	68	----	----	----	----	----	----
Iowa	3	25	44	164	37	----	----	1	36	----	----	----	----	----	----	----	----
Other States	284	81	27	148	30	----	----	21	----	1	----	1	----	----	----	----	7
Total	20,952	19,324	18,363	16,866	19,095	1,239	1,009	1,067	969	1,847	2,635	2,383	1,825	1,905	1,848	1,331	1,037

[1] Not over 500 pounds.

TABLE 508.—*Cheese: Net receipts at six markets by State of origin, 1921–1925*—Continued

[Thousand pounds—i. e., 000 omitted]

SAN FRANCISCO

State	1921	1922	1923	1924	1925											
					Total	January	February	March	April	May	June	July	August	September	October	November	December
California	4,800	3,416	3,650	2,603	2,316	416	144	211	205	234	238	184	175	155	94	148	112
Oregon	2,245	2,448	2,557	2,710	3,029	76	26	42	119	371	443	679	523	261	198	159	130
Wisconsin	1,064	1,353	1,979	2,216	1,987	200	116	29	91	88	129	168	370	246	276	144	130
Illinois	505	855	1,441	821	463	1	54	31	38	43	33	41	95	59	35	----	33
New York	388	314	249	310	307	24	37	38	21	19	50	11	18	1	36	32	20
Colorado	176	322	222	256	323	39	19	23	14	16	69	50	22	15	18	26	12
Washington	145	108	112	58	120	2	1	7	4	14	7	34	43	4	1	1	2
Idaho	139	222	1,039	2,262	2,935	214	111	230	175	295	201	335	369	243	209	278	175
Utah	24	10	17	76	164	----	26	----	----	----	24	24	----	51	----	39	----
Montana	----	56	338	5	64	----	----	----	----	----	3	7	53	----	----	1	----
Minnesota	----	----	63	152	154	----	----	----	----	3	----	78	32	----	41	----	----
Other States	146	53	23	13	93	1	----	1	----	----	----	2	1	----	2	50	36
Total	9,632	9,157	11,690	11,482	11,855	973	534	612	667	1,083	1,197	1,613	1,703	1,035	910	878	650

LOS ANGELES

State	1925											
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
California	2,183	160	97	183	178	186	134	407	171	236	126	158	147
Oregon	2,395	136	63	51	140	249	494	260	193	105	286	271	147
Washington	105	1	1	----	3	9	35	2	2	39	2	7	5
Nevada	----	----	----	----	----	----	----	----	----	----	----	----	----
Idaho	3,922	361	198	217	232	270	435	321	293	418	385	283	404
Utah	354	55	----	----	26	----	83	25	61	57	25	10	12
Montana	----	----	----	----	----	----	----	----	----	----	----	----	----
Colorado	343	19	10	65	21	25	72	7	43	13	5	44	19
Wisconsin	2,017	136	110	32	226	209	287	353	149	183	157	108	59
Wyoming	29	----	----	----	----	----	----	----	29	----	----	----	----

Arizona	64	3	.....	4	25	12	6	6	1	.....	1	2	4
Kansas	2	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
Maryland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minnesota	132	.....	.....	.....	.....	.....	32	37	35	28	.....	.....	.....
Missouri	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nebraska	62	.....	.....	.....	.....	.....	33	.....	.....	.....	.....	.....	29
Texas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Mexico	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Illinois	233	4	34	13	31	3	31	1	23	33	55	.....	.....
Iowa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oklahoma	10	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York	48	2	.....	4	9	.....	1	4	4	17	.....	4	3
Other States	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ttoal	11,000	877	523	569	953	963	1,643	1,428	1,009	1,137	1,042	867	889

Division of Statistical and Historical Research. Compiled from reports of the Division of Dairy and Poultry Products.

TABLE 509.—*American cheese: Cold-storage holdings, United States, 1915–1925* [1]

[Thousand pounds—i. e., 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1915									28,575	24,144	32,428	31,271
1916	28,558	18,908	13,373	8,443	6,546	7,301	16,357	31,569	46,776	49,579	45,713	37,080
1917	31,855	22,113	15,560	9,842	7,928	11,626	34,159	67,595	91,545	90,671	78,087	75,166
1918	66,784	56,298	37,743	27,965	17,736	20,395	30,054	48,804	55,742	42,065	33,402	25,625
1919	19,823	15,486	9,837	6,750	6,027	12,478	37,501	62,645	76,661	81,359	72,889	62,508
1920	53,168	43,631	34,039	23,431	16,963	13,502	29,654	51,512	60,372	55,007	48,566	39,921
1921	34,115	25,000	17,477	14,294	13,466	17,814	34,948	41,284	46,635	45,163	42,969	34,055
1922	27,691	21,430	15,006	10,745	10,868	15,481	33,130	46,580	53,625	49,473	40,852	37,291
1923	33,617	26,593	20,693	14,465	14,077	17,507	36,834	55,839	63,960	62,384	57,927	55,105
1924	49,566	40,506	35,160	28,294	26,202	27,172	45,239	65,864	76,406	73,153	67,905	58,705
1925	49,187	41,552	34,047	27,716	26,147	29,550	46,468	66,634	76,512	78,582	71,913	66,495
Av. 1921–1925	38,835	31,016	24,597	19,103	18,152	21,505	39,324	55,240	63,428	61,751	56,313	50,330

Cold Storage Report Section.

[1] The term "American cheese" is intended to cover only those varieties known as twins, flats, daisies, cheddars, longhorns, and square prints. It does not, therefore, include all kinds of cheese made in America.

TABLE 510.—*Cheese: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average, 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	10,447	[1] 6	1,474	14,829	2,359	12,685	2,546	3,461
Australia	360	799	[2] 499	[2] 5,454	[2] 1,422	[2] 3,788		
Bulgaria	[3] 52	[1] 5,972	[4] 2	1,831	[4] 34	1,175	[4] 15	258
Canada	1,054	167,260	687	120,177	1,900	116,202	909	121,466
Czechoslovakia			1,355	2,278	1,999	3,917	1,671	5,431
Denmark	1,414	527	1,194	19,674	721	12,038	673	19,480
Finland	478	2,086	8	5,989	23	2,944	[4] 36	5,613
Hungary			2	1,494	([5])	1,160	1	[4] 1,344
Italy	13,308	60,560	15,571	32,057	10,228	50,389	4,156	74,110
Netherlands	522	127,379	750	143,769	873	136,646	888	170,352
New Zealand	3	55,561	1	130,054	([5])	161,444	19	178,582
Russia	3,911	7,011	[4] 126					
Switzerland	7,150	70,075	1,792	46,152	2,543	39,046	4,163	43,776
Yugoslavia			8	3,875	118	9,309	191	7,439
PRINCIPAL IMPORTING COUNTRIES								
Algeria	6,592	138	7,206	196	7,415	189	7,547	174
Austria			8,362	161	9,847	317	10,142	1,189
Austria-Hungary	12,298	966						
Belgium	31,771	354	48,316	1,148	39,553	1,039	37,643	1,513
Brazil	4,178	[1] 1	394	1	254	3		
British India	1,314		1,072		1,006		1,046	[4] 4
Cuba	4,520	7	3,841	4	5,065	3	5,697	8
Dutch East Indies	757		1,491		1,242		[6] 1,138	
Egypt	8,182	[7] 48	6,779	102	6,007	122	5,960	117
France	49,056	26,880	50,643	18,496	45,690	27,908	39,044	34,394
Germany	48,687	1,967	51,984	2,235	24,930	636	96,702	1,239
Irish Free State							2,590	542
Norway	663	377	1,540	657	1,962	697	1,106	695
Spain	5,032	53	4,222	453	5,971	126	[4] 6,060	[4] 57
Sweden	946	41	1,992	336	4,189	114	2,210	266
Tunis	1,382	19	997	19	[4] 1,031	[4] 40	1,073	48
Union of South Africa	4,991	3	268	152	832	118	552	127
United Kingdom	257,407	950	294,938	581	313,280	946	318,041	843
United States	46,346	5,142	46,573	5,007	64,420	8,331	59,176	4,299
Other countries	12,596	3,942	12,166	3,147	16,176	2,907	13,879	2,901
Total	535,417	538,124	566,253	560,328	571,090	594,239	624,874	679,728

Division of Statistical and Historical Research. Official sources except where otherwise noted. All cheese made from milk, including cottage cheese.

[1] Four-year average.
[2] Year beginning July 1.
[3] Three-year average.
[4] International Institute of Agriculture.
[5] Less than 500 pounds.
[6] Java and Madura only.
[7] One year only.

TABLE 511.—*Cheese, No. 1 American fresh: Average wholesale price per pound, New York, 1910–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents.*
1910	17	17	17	17	14	14	15	15	15	15	15	16	16
1911	15	15	14	14	11	11	12	12	14	14	15	16	14
1912	16	17	18	19	15	14	15	16	16	18	17	17	16
1913	17	17	16	15	13	14	14	15	16	16	16	16	15
1914	17	16	18	16	14	15	15	16	16	15	15	15	16
1915	15	16	16	16	17	15	15	13	14	15	16	17	15
1916	17	18	18	18	18	15	15	17	19	21	23	24	19
1917	24	25	26	26	26	23	24	23	25	25	23	24	24
1918	24	26	24	23	24	23	25	26	28	33	32	35	27
1919	35	30	32	31	32	32	33	31	31	31	32	32	32
1920	32	30	29	30	30	28	27	27	28	28	28	28	29
Av. 1914–1920	23	23	23	23	23	22	22	22	23	24	24	25	23
1921	24	21	25	22	17	16	19	21	21	22	21	21	21
1922	21	20	20	18	17	19	21	21	21	------	------	------	------
1923	28	28	25	23	23	24	25	25	26	26	25	------	------
1924	22	22	21	17	17	20	21	21	22	20	21	23	21
1925	24	24	24	23	21	23	24	25	25	26	27	27	24
Av. 1921–1925	24	23	23	21	19	20	22	23	23	------	------	------	------

Division of Statistical and Historical Research. January, 1910–February, 1919, compiled from Urner-Barry reports; subsequently from reports of Division of Dairy and Poultry Products.

TABLE 512.—*Oleomargarine: Production, 1920–1924*

Product	1920		1921		1922		1923		1924	
	Number factories reporting	Quantity produced	Number factories reporting	Quantity produced	Number factories reporting	Quantity produced	Number factories reporting	Quantity produced	Number factories reporting	Quantity produced
		1,000 lbs.		*1,000 lbs.*		*1,000 lbs.*		*1,000 lbs.*		*1,000 lbs.*
Oleomargarine (uncolored):										
Animal and vegetable oil	51	161,636	55	103,962	57	104,285	51	121,271	53	119,641
Exclusively vegetable oil	71	190,280	71	99,265	69	74,127	60	93,970	55	97,871
Exclusively animal oil	7	3,843	3	624	3	303	4	450	3	413
Oleomargarine (colored):										
Animal and vegetable oil	36	8,951	36	5,960	36	4,976	34	7,078	32	7,847
Exclusively vegetable oil	34	5,359	35	2,026	33	1,384	27	2,808	31	3,259
Exclusively animal oil	3	94	2	30	1	1	------	------	------	------
Total oleomargarine (colored and uncolored)	------	370,163	------	211,867	------	185,076	------	225,577	------	229,031

Division of Dairy and Poultry Products. Compiled from reports made by manufacturers.

OLEOMARGARINE

TABLE 513.—*Oleomargarine manufactured, by months, 1924*

[Thousand pounds—i. e., 000 omitted]

Month	Oleomargarine (uncolored)			Oleomargarine (colored		Total, oleomargarine colored and uncolored
	Animal and vegetable oil	Exclusively vegetable oil	Exclusively animal oil	Animal and vegetable oil	Exclusively vegetable oil	
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
January	12,251	11,005	23	733	319	24,331
February	11,594	10,066	20	742	343	22,765
March	11,660	9,231	19	779	365	22,054
April	10,253	8,934	61	721	301	20,270
May	9,461	7,137	37	575	239	17,449
June	8,538	5,870	----------	530	197	15,135
July	8,550	5,784	48	553	219	15,154
August	8,561	6,598	53	536	198	15,946
September	9,935	8,241	63	686	228	19,153
October	10,421	8,560	35	693	278	19,987
November	8,487	7,665	22	591	255	17,020
December	9,930	8,780	32	708	317	19,767
Total	119,641	97,871	413	7,847	3,259	229,031

Division of Dairy and Poultry Products. This report is a tabulation of schedules sent directly to the Bureau of Agricultural Economics, and is final.

TABLE 514.—*Oleomargarine production and consumption in the United States, 1909–1925*

Year ended June 30	Production	Stocks, beginning of year	Exports	Stocks, end of year	Consumption	
					Total	Per capita
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
1909	92,282,815	692,225	2,889,058	748,318	89,337,664	0.99
1910	141,862,280	748,318	3,418,632	1,165,446	138,026,520	1.51
1911	121,162,795	1,165,446	3,704,939	942,440	117,590,862	1.26
1912	128,601,053	942,440	3,627,425	1,249,246	124,666,822	1.32
1913	145,227,862	1,249,246	2,967,582	1,650,897	141,858,629	1.48
1914	144,021,276	1,650,897	2,532,821	1,261,245	141,878,107	1.46
1915	145,810,048	1,261,245	5,252,183	1,661,559	140,157,551	1.42
1916	152,509,913	1,661,559	5,426,221	1,992,726	146,752,525	1.47
1917	233,170,111	1,992,726	5,651,267	2,988,197	226,523,373	2.23
1918	326,528,839	2,988,197	6,309,896	3,577,733	319,629,407	3.11
1919	359,216,571	3,577,733	18,570,400	2,562,597	341,661,307	3.28
1920	391,283,143	2,562,597	20,952,180	4,110,174	368,783,386	3.49
1921	281,081,514	4,110,174	6,219,165	1,979,543	276,992,980	2.59
1922	190,950,373	1,979,543	1,989,421	2,265,895	188,674,600	1.74
1923	209,182,188	2,265,895	2,027,546	2,647,297	206,773,240	1.88
1924	239,698,749	2,647,297	1,125,096	2,607,346	238,613,604	2.14
1925	215,402,538	2,607,346	732,311	2,720,438	214,557,135	1.90

Division of Statistical and Historical Research. Production and stocks from Bureauof Internal Revenue. Exports from Bureau of Foreign and Domestic Commerce.

TABLE 515.—*Oleomargarine: Materials used in manufacture, 1916–1924*

Material	Year beginning July								
	1916	1917	1918	1919	1920	1921	1922	1923	1924
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
Oleo oil	96, 652	96, 378	97, 464	89, 842	49, 676	40, 980	46, 645	52, 265	44, 102
Coconut oil	19, 763	61, 773	69, 640	80, 784	103, 112	57, 394	65, 656	83, 059	79, 449
Cottonseed oil	63, 652	36, 454	37, 846	39, 450	18, 533	15, 420	18, 757	20, 640	20, 966
Milk	24, 410	61, 128	68, 000	76, 000	79, 716	53, 939	59, 835	69, 090	61, 924
Peanut oil	10, 498	21, 593	38, 764	48, 346	16, 332	11, 625	6, 922	5, 656	4, 392
Salt	6, 115	18, 279	21, 432	24, 864	25. 365	16, 262	17, 998	20, 593	18, 725
Oleo stearine	2, 494	3, 427	2, 456	2, 132	4, 858	4, 574	4, 815	5, 317	5, 250
Neutral lard	42, 401	45, 702	45, 764	38, 456	29, 268	27, 057	29, 568	32, 210	25, 674
Oleo stock	3, 458	7, 526	6, 342	5, 904	2, 065	2, 143	2, 322	2, 756	3, 183
Butter	3, 303	4, 548	5, 680	6, 845	1, 499	1, 107	1, 576	1, 900	1, 509
Vegetable oil					6, 559				
Corn oil	859	60	40	35	926			457	196
Soy-bean oil					461				
Edible tallow					233			24	111
Mustard-seed oil					110			38	27
Mutton oil	149	14	11	14					
Coloring					26	11	11	26	38
Miscellaneous					3, 217	3, 417	2, 918	432	688
Total	273, 754	356, 882	393, 439	412, 572	341, 956	233, 929	257, 023	294, 463	266, 234

Division of Statistical and Historical Research. 1916–1919, Institute of Margarin Manufacturers; 1920–1924, Annual reports of the Bureau of Internal Revenue.

TABLE 516.—*Oleomargarine: Production in the United States, 1918–1924*

Year	Uncolored; made of—			Colored; made of—			Total
	Animal and vegetable oil	Exclusively vegetable oil	Exclusively animal oil	Animal and vegetable oil	Exclusively vegetable oil	Exclusively animal oil	
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
1918	255, 197	88, 862	3, 307	7, 056	112	1, 003	355, 537
1919	214, 759	132, 906	3, 391	9, 303	9, 793	1, 165	371, 317
1920	161, 636	190, 280	3, 843	8, 951	5, 359	94	370, 163
1921	103, 962	99, 265	624	5, 960	2, 026	30	211, 867
1922	104, 284	74, 128	302	4, 977	1, 383	1	185, 075
1923	121, 272	93, 972	450	7, 078	2, 808		225, 580
1924	119, 641	97, 871	413	7, 847	3, 259		229, 031
1924							
January	12, 251	11, 005	23	733	319		24, 331
February	11, 594	10, 066	20	742	343		22, 765
March	11, 660	9, 231	19	779	365		22, 054
April	10, 253	8, 934	61	721	301		20, 270
May	9, 461	7, 137	37	575	239		17, 449
June	8, 538	5, 870		530	197		15, 135
July	8, 550	5, 784	48	553	219		15, 154
August	8, 561	6, 598	53	536	198		15, 946
September	9, 935	8, 241	63	686	228		19, 153
October	10, 421	8, 560	35	693	278		19, 987
November	8, 487	7, 665	22	591	255		17, 020
December	9, 930	8, 780	32	708	317		19, 767

Division of Statistical and Historical Research. Compiled from monthly reports of the Division of Dairy and Poultry Products.

TABLE 517.—*Oleomargarine: Production in the United States, 1909–1924*

COLORED

Year beginning July	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
	1,000 lbs.	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*	*1,000 lbs.*
1909	381	433	487	519	521	634	525	518	619	595	542	403	6, 177
1910	414	433	469	473	610	587	524	501	606	463	389	362	5, 831
1911	359	454	393	477	539	594	663	630	614	588	538	387	6, 236
1912	449	394	439	530	501	616	602	618	638	701	586	446	6, 520
1913	477	493	532	635	606	615	610	503	608	477	433	395	6, 384
Av. 1909–1913	416	441	464	527	555	609	585	554	617	565	498	399	6, 230
1914	422	509	488	480	472	583	807	1, 082	1, 131	598	526	497	7, 595
1915	472	436	443	548	557	597	560	569	684	677	652	554	6, 749
1916	447	569	643	719	741	759	703	628	742	738	731	592	8, 012
1917	496	512	573	677	542	521	508	471	615	582	587	511	6, 595
1918	408	433	538	608	552	747	1, 111	1, 642	2, 243	2, 716	1, 930	921	13, 849
1919	1, 705	1, 807	681	1, 087	1, 719	1, 626	1, 540	960	1, 250	1, 139	1, 114	996	15, 624
1920	934	1, 019	1, 484	1, 378	1, 368	1, 046	936	816	950	823	518	328	11, 600
Av. 1914–1920	698	755	693	785	850	840	881	881	1, 088	1, 039	865	628	10, 003
1921	424	500	577	692	693	656	556	482	595	498	513	418	6, 604
1922	415	420	488	565	670	790	772	801	917	854	906	662	8, 260
1923	644	710	864	956	1. 009	1, 096	1, 104	1, 157	1, 229	1, 102	872	805	11, 548
1924	830	777	945	989	878	1, 074	1, 008	912	1, 083	1, 039	928	817	11, 280

UNCOLORED

1909	5, 499	6, 386	9, 809	12, 497	13, 313	15, 314	15, 516	12, 639	13, 456	12, 747	10, 175	8, 334	135, 685
1910	6, 902	9, 307	12, 702	12, 627	13, 823	13, 002	10, 885	8, 936	9, 676	6, 866	5, 424	5, 182	115, 332
1911	4, 788	6, 701	7, 816	9, 245	11, 228	12, 652	15, 639	13, 738	11, 654	10, 988	10, 629	7, 287	122, 365
1912	6, 785	8, 526	9, 397	13, 807	12, 623	14, 802	13, 199	13, 213	13, 139	13, 892	11, 036	8, 288	138, 707
1913	7, 947	8, 754	12, 790	14, 786	13, 777	14, 277	14, 485	12, 888	12, 317	9, 724	8, 305	7, 587	137, 637
Av. 1909–1913	6, 384	7, 935	10, 503	12, 592	12, 953	14, 009	13, 945	12, 283	12, 048	10, 843	9, 114	7, 336	129, 945
1914	7, 847	9, 502	12, 036	13, 120	13, 310	14, 063	12, 516	12, 371	12, 910	10, 785	10, 319	9, 436	138, 215
1915	8, 711	9, 183	10, 491	12, 394	11, 782	13, 380	11, 993	13, 034	15, 243	13, 974	13, 746	11, 830	145, 761
1916	8, 948	11, 272	15, 516	19, 246	21, 899	23, 287	18, 272	19, 593	22, 128	22, 740	24, 314	17, 943	225, 158
1917	16, 490	19, 519	26, 181	33, 374	29, 009	30, 227	32, 496	35, 855	31, 512	22, 912	23, 410	18, 949	319, 934
1918	19, 888	17, 959	28, 428	43, 543	32, 434	36, 662	40, 166	19, 741	27, 431	31, 448	29, 135	18, 533	345, 368
1919	22, 700	25, 168	26, 424	34, 357	35, 502	39, 005	35, 312	31, 701	36, 337	30, 667	34, 760	23, 726	375, 659
1920	23, 625	25, 516	29, 899	29, 918	29, 089	24, 705	22, 630	20, 773	22, 532	18, 685	13, 537	8, 572	269, 481
Av. 1914–1920	15, 458	16, 874	21, 282	26, 565	24, 718	25, 904	24, 769	21, 867	24, 013	21, 602	21, 317	15, 570	259, 939
1921	10, 581	16, 612	16, 920	20, 588	17, 985	17, 754	15, 610	14, 139	15, 375	13, 432	13, 356	11, 994	184, 346
1922	11, 866	12, 623	13, 684	17, 386	18, 615	20, 269	20, 105	17, 889	20, 137	18, 083	16, 690	13, 582	200, 923
1923	12, 633	15, 966	18, 258	21, 521	21, 473	21, 052	23, 597	21, 805	21, 189	19, 359	16, 800	14, 497	228 150
1924	14, 689	15, 285	18, 324	19, 151	16, 188	19, 182	18, 171	16, 317	18, 046	17, 629	16, 671	14, 469	204, 122

Division of Statistical and Historical Research. Compiled from annual reports of the Bureau of Internal Revenue.

TABLE 518.—*Oleomargarine: Monthly average wholesale price per pound, Chicago, 1914–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1914	18.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	18.0	18.0	18.0	18.0	17.6
1915	18.0	18.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.3
1916	17.0	17.0	17.0	18.0	19.0	19.0	19.0	19.0	19.0	20.0	22.0	24.0	19.2
1917	22.5	22.5	22.5	24.5	25.5	25.5	25.5	25.5	26.5	28.5	28.5	28.5	25.5
1918	28.5	28.5	28.5	28.5	28.5	28.5	28.5	29.5	29.5	30.5	32.5	32.5	29.5
1919	32.5	32.5	31.5	31.5	34.5	35.5	35.5	35.5	36.5	34.5	35.5	35.5	34.3
1920	35.5	34.4	33.5	33.5	33.5	32.6	31.7	30.5	30.5	29.5	29.5	27.0	31.8
Av. 1914–1920	24.6	24.4	24.1	24.4	25.0	25.0	24.9	24.9	25.3	25.4	26.1	26.1	25.0
1921	24.9	23.6	22.2	20.5	19.8	18.5	18.9	20.5	20.5	20.5	20.1	19.5	20.8
1922	19.0	17.5	17.5	17.5	17.5	17.5	18.2	18.5	18.5	18.5	19.2	20.5	18.3
1923	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	21.0	21.5	22.2	22.5	20.9
1924	22.5	22.5	21.9	20.5	20.5	20.5	21.2	22.5	22.5	23.0	24.0	24.5	22.2
1925	24.5	24.5	24.5	24.5	23.9	23.5	23.7	24.5	24.5	24.5	24.5	24.5	24.3
Av. 1921–1925	22.3	21.7	21.3	20.7	20.4	20.1	20.5	21.3	21.4	21.6	22.0	22.3	21.3

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics Wholesale Price bulletins.

CATTLE DISEASES

TABLE 519.—*Cattle: Tuberculin testing under accredited-herd and area plans, 1917–1925*

Year ended June 30—	Cattle tested					Herds accredited	Herds passed one test	Under supervision	
	Accredited-herd plan	Area plan	Total	Reacters found	Per cent reacters			Herds	Cattle
1917	20,101	----------	20,101	645	3.2	----------	----------	----------	----------
1918	134,143	----------	134,143	6,544	4.9	204	883	----------	----------
1919	329,878	----------	329,878	13,528	4.1	782	6,535	----------	----------
1920	700,670	----------	700,670	28,709	4.1	3,370	16,599	----------	----------
1921	1,366,358	----------	1,366,358	53,768	3.9	8,201	49,814	71,806	1,195,797
1922	1,722,209	[1] 662,027	2,384,236	82,569	3.5	16,216	161,533	212,182	2,616,395
1923	1,695,662	1,765,187	3,460,849	113,844	3.3	28,526	312,281	400,097	4,449,722
1924	1,865,863	3,446,501	5,312,364	171,559	3.2	48,273	529,018	705,906	7,374,093
1925	2,008,526	4,991,502	7,000,028	214,491	3.1	72,383	921,758	1,120,526	11,392,381
Total	9,843,410	10,865,217	20,708,627	685,657	3.3	----------	----------	----------	----------

Bureau of Animal Industry.

[1] Testing during six months.

TABLE 520.—*Cattle: Status of tuberculosis eradication work, by States, June 30, 1925*

State	Herds accredited	Herds passed one test	Under supervision		Eradication from areas [1]					Total tuberculin tests 1917 to June 30, 1925		
			Herds	Cattle	Modified accredited counties	Additional counties having completed one or more tests of all cattle	Counties intensively engaged in testing cattle	Total counties engaged	Cattle tested [2]	Total cattle tested	Reactors	
											Number	Per cent
Alabama	175	2,085	2,722	32,189			3	3	13,032	177,843	1,819	1.0
Arizona	18	3,180	4,137	74,305			4	4	73,116	40,685	1,156	2.8
Arkansas	26	2,898	3,088	17,433						59,417	2,672	4.5
California	77	2,090	2,250	128,312	2			2	142,126	173,079	1,429	0.8
Colorado	48	1,114	1,446	18,822					8,028	19,981	646	3.2
Connecticut	707	603	1,843	37,091						174,068	18,367	10.6
Delaware	953	1,884	3,434	15,367						66,724	6,859	10.3
District of Columbia	26	253	286	1,262		1		1	413	10,556	119	1.1
Florida	368	5,757	6,567	81,868	3		1	4	2,596	159,027	2,283	1.4
Georgia	39	6,577	7,363	114,047			1	1	12,379	138,062	2,293	1.7
Idaho	87	20,008	23,113	228,384	1	3	9	13	264,327	344,282	3,081	0.9
Illinois	993	64,200	78,385	704,975	1		61	62	1,020,146	1,215,102	61,049	5.0
Indiana	12,323	40,264	53,369	419,851	6	3	15	24	350,106	808,160	16,138	2.0
Iowa	5,634	55,489	91,505	1,612,939	6		39	45	1,460,747	2,151,793	67,426	3.1
Kansas	888	17,680	19,222	236,250	5		5	10	219,203	422,816	5,638	1.3
Kentucky	241	37,484	43,740	290,684		15	12	27	222,553	318,375	4,494	1.4
Louisiana	36	2,273	3,687	46,667						142,525	4,189	2.9
Maine	2,167	13,502	16,064	128,444			16	16	137,015	269,425	4,507	1.7
Maryland	1,561	4,857	11,050	88,755			6	6	121,725	279,269	23,564	8.4
Massachusetts	246	755	1,459	30,584						107,748	14,982	13.9
Michigan	183	64,496	67,539	539,303	9	19	2	30	1,087,438	1,298,911	30,472	2.3
Minnesota	5,798	12,632	20,116	428,465	3	2		5	364,172	1,139,009	32,452	2.8
Mississippi	121	1,640	1,782	28,333		4		4	8,683	160,180	861	0.5
Missouri	852	54,185	57,442	533,453			28	28	376,474	735,420	6,514	0.9
Montana	105	19,645	20,485	351,562		2	4	6	246,751	486,950	5,476	1.1
Nebraska	172	23,182	24,717	327,215	2	5	9	16	500,110	649,607	12,273	1.9
Nevada	9	2,141	2,833	70,656			6	6	43,897	75,823	1,541	2.0
New Hampshire	1,813	1,850	3,699	43,493			5	5	43,823	133,846	9,313	7.0
New Jersey	523	1,491	2,128	16,505						145,515	11,815	8.1
New Mexico	11	3,070	3,338	33,210			12	12	30,183	33,721	161	0.5
New York	13,010	24,928	48,939	641,553	1	3	36	40	946,318	1,418,162	161,107	11.4
North Carolina	117	155,052	168,969	458,748	37		23	60	399,242	474,683	2,940	0.6

North Dakota	2,928	20,199	26,241	490,516	5		18	23	380,008	734,917	12,282	1.7
Ohio	1,388	38,777	44,054	307,513		5	14	19	325,457	574,454	22,494	3.9
Oklahoma	289	82	407	14,778						144,203	3,400	2.4
Oregon	849	51,863	52,780	448,021	1	9	8	18	229,237	479,430	7,365	1.5
Pennsylvania	3,667	26,842	33,972	285,160	3		12	15	270,429	647,315	25,625	4.0
Rhode Island	40	10	68	1,567						9,866	675	6.8
South Carolina	177	827	5,798	31,992					2,565	101,239	1,126	1.1
South Dakota	496	580	1,240	36,537						152,416	5,208	3.4
Tennessee	229	13,093	13,386	94,690	3		1	4	80,570	239,542	1,726	0.7
Texas	275	769	1,130	41,090						181,865	2,217	1.2
Utah	80	10,106	11,071	85,072	1	1	11	13	145,916	206,858	2,235	1.1
Vermont	3,533	1,472	7,337	124,940						475,176	25,983	5.4
Virginia	1,576	5,942	7,807	86,924		2	1	3	42,613	339,647	9,225	2.7
Washington	106	32,073	34,293	323,366		3	31	34	272,211	474,235	9,950	2.1
West Virginia	605	5,934	6,728	68,907		1	2	3	41,628	144,161	2,609	1.8
Wisconsin	6,809	60,156	70,961	1,095,543		28	1	29	913,295	1,868,023	34,827	1.9
Wyoming	9	5,853	6,594	77,040					67,285	96,556	890	0.9
Indian schools [3]										413	27	6.5
Purebred herds in the United States [3]										4,486	157	3.5
Total	72,383	921,758	1,120,526	11,392,381	89	106	396	591	10,865,217	20,708,627	685,657	3.3

Bureau of Animal Industry.

[1] Accredited-herd work begun in 1917; area work, 1921.
[2] Includes area testing in units smaller than counties.
[3] Testing in 1917 before work was organized by States.

TABLE 521. *Cattle: Tick eradication progress and status of the work June 30, 1925*

State	Counties quarantined July 1 1906	Counties quarantined June 30, 1925	Released counties			Cattle dipped year ended June 30, 1925 [1]	
			Released counties tick free	Released counties with one or more infested herds	Total counties released	Herds	Cattle
Alabama	67	8	41	18	59	411,020	2,543,502
Arkansas	75	37	34	4	38	175,043	850,994
California	15	0	15	0	15		
Florida	58	53	1	4	5	197,829	1,538,290
Georgia	157	0	138	19	157	83,071	1,114,142
Kentucky	2	0	2	0	2		
Louisiana	65	38	4	23	27	131,797	2,369,972
Mississippi	81	23	54	4	58	62,920	707,111
Missouri	4	0	4	0	4		
North Carolina	75	7	53	15	68	93,583	289,476
Oklahoma	61	5	49	7	56	38,770	400,689
South Carolina	44	2	36	6	42	107,830	552,606
Tennessee	42	0	42	0	42	1,294	3,679
Texas	199	94	56	49	105	483,329	13,709,457
Virginia	30	4	[2]	26	26		
Total	975	271	529	175	704	1,786,486	24,079,918

Bureau of Animal Industry.

[1] More than 25,000 vats were in use for official dipping during the year.
[2] No bureau cooperation in 1925.

SWINE

TABLE 522.—*Swine: Yearly losses per 1,000 from disease, 1909–1925*

Year ended Apr. 30—	Losses per 1,000	Year ended Apr. 30—	Losses per 1,000	Year ended Apr. 30—	Losses per 1,000
1909	51.0	1915		1921	43.0
1910	45.1	1916	66.2	1922	54.4
1911	44.8	1917	48.6	1923	51.3
1912	89.2	1918	42.1	1924	53.1
1913	110.1	1919	41.4	1925	38.6
1914	118.9	1920	49.8		

Division of Crop and Livestock Estimates. As reported by crop reporters May 1 for year ending April 30.

TABLE 523.—*Swine: Number and value on farms, by States, January 1, 1920–1926*

State	Number, Jan. 1—				Average value per head, Jan. 1—				Farm value, Jan. 1—			
	1920	1921	1922	1923	1920	1921	1922	1923	1920	1921	1922	1923
	Thousand	*Thousand*	*Thousand*	*Thousand*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*
Maine	91	73	61	59	24.50	21.00	14.70	18.30	2,230	1,533	897	1,080
New Hampshire	42	31	28	26	24.00	20.00	15.00	17.00	1,008	620	420	442
Vermont	73	63	52	53	22.50	14.80	12.40	14.00	1,642	932	645	742
Massachusetts	104	75	65	64	27.00	20.50	16.30	17.00	2,808	1,538	1,060	1,088
Rhode Island	13	12	10	8	30.00	21.00	17.50	18.10	390	252	175	145
Connecticut	61	45	38	30	27.50	20.00	17.00	17.70	1,678	900	646	531
New York	601	480	385	385	22.50	17.50	14.50	15.50	13,522	8,400	5,582	5,968
New Jersey	139	113	96	80	25.20	20.00	17.00	17.50	3,503	2,260	1,632	1,400
Pennsylvania	1,191	1,100	1,060	1,020	23.70	17.50	14.50	16.00	28,227	19,250	15,370	16,320
Ohio	3,084	2,950	2,900	3,100	19.20	13.30	10.90	12.10	59,213	39,235	31,610	37,510
Indiana	3,757	3,700	3,100	3,500	19.00	13.00	11.00	11.90	71,383	48,100	34,100	41,650
Illinois	4,639	4,835	4,425	5,750	20.50	13.70	10.50	12.50	95,100	66,240	46,462	71,875
Michigan	1,106	1,060	1,100	1,150	22.00	14.30	11.30	12.50	24,332	15,158	12,430	14,375
Wisconsin	1,596	1,710	1,680	1,960	23.50	14.50	10.50	13.10	37,506	24,795	17,640	25,676
Minnesota	2,381	2,600	2,900	3,650	24.00	15.30	11.20	13.20	57,144	39,780	32,480	48,180
Iowa	8,114	8,265	8,928	11,602	21.80	14.50	11.00	12.80	176,885	119,842	98,208	148,506
Missouri	3,889	4,100	4,410	5,050	16.50	11.00	8.50	9.80	64,168	45,100	37,485	49,490
North Dakota	458	455	460	590	21.00	14.00	11.00	13.50	9,618	6,370	5,060	7,965
South Dakota	1,954	1,913	2,200	3,100	21.50	13.50	10.00	13.50	42,011	25,826	22,000	41,850
Nebraska	3,436	3,558	4,100	5,638	20.90	13.50	10.00	12.00	71,812	48,033	41,000	67,656
Kansas	1,733	1,947	2,392	2,990	17.50	12.00	9.50	11.00	30,328	23,364	22,724	32,890
Delaware	39	36	33	30	19.00	16.00	10.00	11.00	741	576	330	330
Maryland	306	285	263	240	19.00	13.00	11.50	13.00	5,814	3,705	3,024	3,120
Virginia	941	828	729	714	15.00	11.50	9.60	10.50	14,115	9,522	6,998	7,497
West Virginia	305	269	255	230	18.00	14.00	10.80	12.30	5,490	3,766	2,754	2,829
North Carolina	1,271	1,246	1,186	1,100	20.00	15.70	12.00	13.30	25,420	19,562	14,232	14,630
South Carolina	845	840	870	920	21.50	13.50	9.20	11.00	18,168	11,340	8,004	10,120
Georgia	2,071	1,920	1,800	1,600	16.90	11.50	8.60	7.80	35,000	22,080	15,480	12,480
Florida	860	832	757	727	13.00	10.00	7.00	7.50	10,400	8,320	5,299	5,452
Kentucky	1,504	1,320	1,161	1,273	13.00	9.90	7.50	8.80	19,552	13,068	8,708	11,202
Tennessee	1,832	1,594	1,546	1,654	15.00	9.50	8.00	9.30	27,480	15,143	12,368	15,382
Alabama	1,497	1,347	1,307	1,261	12.80	10.00	8.60	9.30	19,162	13,470	11,240	11,727
Mississippi	1,373	1,195	1,180	1,040	14.50	9.50	8.00	8.00	19,908	11,352	9,440	8,320
Arkansas	1,378	1,233	1,190	1,139	12.50	8.80	7.10	6.90	17,225	10,850	8,449	7,859
Louisiana	851	749	700	650	14.30	11.70	8.60	7.80	12,169	8,763	6,020	5,070

TABLE 523.—*Swine: Number and value on farms, by States, January 1, 1920–1926*—Continued

State	Number, Jan. 1—				Average value per head, Jan. 1—				Farm value, Jan. 1—			
	1920	1921	1922	1923	1920	1921	1922	1923	1920	1921	1922	1923
	Thousand	*Thousand*	*Thousand*	*Thousand*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*
Oklahoma	1,804	1,213	1,334	1,401	15.10	10.30	8.50	8.80	19,690	12,494	11,339	12,329
Texas	2,400	2,330	2,190	1,880	19.50	11.80	8.50	8.80	46,800	27,494	18,615	16,544
Montana	167	160	180	225	20.00	16.50	13.10	13.20	3,340	2,640	2,358	2,970
Idaho	240	220	260	320	17.80	12.50	11.00	11.50	4,272	2,750	2,860	3,680
Wyoming	72	68	83	105	18.40	14.00	12.00	12.50	1,325	952	996	1,312
Colorado	450	414	455	592	18.00	12.30	9.60	10.50	8,100	5,092	4,368	6,216
New Mexico	88	90	94	89	21.80	15.60	9.00	10.00	1,918	1,350	846	890
Arizona	50	40	37	38	18.00	16.00	12.00	13.00	900	640	444	494
Utah	99	70	80	100	15.00	13.00	10.00	10.90	1,485	910	800	1,090
Nevada	27	25	25	28	14.00	11.00	10.00	14.00	378	275	250	392
Washington	265	236	197	217	23.30	15.00	12.50	14.80	6,174	3,540	2,462	3,212
Oregon	267	248	235	251	19.50	12.80	10.70	11.20	5,206	3,174	2,514	2,811
California	909	818	818	818	18.00	14.50	11.70	11.80	16,362	11,861	9,571	9,652
United States	59,813	58,711	59,355	68,447	19.08	12.98	10.06	11.58	1,141,102	762,217	597,395	792,949

Division of Crop and Livestock Estimates.

TABLE 523.—*Swine: Number and value on farms, by States, January 1, 1920-1926*—Continued.

State	Number, Jan. 1—			Average value per head, Jan. 1—			Farm value, Jan. 1—		
	1924	1925	1926 [1]	1924	1925	1926	1924	1925	1926 [1]
	Thousand	*Thousand*	*Thousand*	*Dollars*	*Dollars*	*Dollars*	*Thousand dollars*	*Thousand dollars*	*Thousand dollars*
Maine	60	54	53	17.00	18.50	18.50	1,020	999	980
New Hampshire	18	17	19	16.00	18.00	19.00	288	306	361
Vermont	53	44	41	13.80	14.00	18.00	731	616	738
Massachusetts	65	64	64	17.00	17.00	19.00	1,105	1,088	1,216
Rhode Island	6	4	4	18.00	20.00	20.00	108	80	80
Connecticut	21	17	16	18.00	22.00	23.00	378	374	368
New York	347	270	262	14.70	17.00	19.50	5,101	4,590	5,109
New Jersey	66	56	53	17.00	17.50	19.50	1,122	980	1,034
Pennsylvania	980	782	727	14.50	16.00	19.00	14,210	12,512	13,813
Ohio	2,950	2,421	2,203	10.00	12.20	15.00	29,500	29,536	33,045
Indiana	3,550	3,143	2,890	9.80	11.90	15.70	34,790	37,402	45,373
Illinois	5,625	4,725	4,631	10.10	13.60	16.50	56,812	64,260	76,412
Michigan	1,143	906	815	10.00	14.00	16.20	11,430	12,684	13,203
Wisconsin	1,900	1,580	1,612	9.90	13.00	16.60	18,810	20,540	26,759
Minnesota	3,830	3,600	3,528	10.30	14.00	17.50	39,449	50,400	63,000
Iowa	11,415	9,633	9,440	10.30	15.00	17.00	117,574	144,495	160,480
Missouri	4,860	3,864	3,671	8.50	9.30	13.30	41,310	35,935	48,824
North Dakota	738	788	686	10.00	12.50	16.50	7,380	9,850	11,319
South Dakota	3,000	2,760	2,374	10.10	13.20	16.50	30,300	36,432	39,171
Nebraska	5,983	4,818	4,050	10.00	13.20	17.20	59,830	63,598	69,660
Kansas	2,747	2,467	2,023	9.00	12.00	14.50	24,723	29,604	29,334
Delaware	27	24	21	10.50	14.00	16.00	284	336	336
Maryland	219	202	192	11.25	12.90	14.90	2,464	2,606	2,861
Virginia	678	584	555	9.90	10.70	11.70	6,712	6,249	6,494
West Virginia	212	179	152	11.00	12.00	14.80	2,332	2,148	2,250
North Carolina	1,020	894	832	12.50	12.00	13.10	12,750	10,728	10,899
South Carolina	830	580	435	11.30	11.40	11.10	9,379	6,612	4,828
Georgia	1,520	1,275	1,109	8.00	9.00	9.00	12,160	11,475	9,981
Florida	640	550	506	7.00	6.50	7.00	4,480	3,575	3,542
Kentucky	1,185	932	802	7.00	9.00	12.40	8,295	8,388	9,945
Tennessee	1,340	1,035	880	7.40	9.00	11.80	9,916	9,315	10,384
Alabama	1,049	845	776	8.80	9.40	9.40	9,231	7,943	7,294
Mississippi	900	729	678	7.40	8.40	10.10	6,660	6,124	6,848
Arkansas	878	857	771	6.10	8.00	9.10	5,356	6,856	7,016
Louisiana	580	528	496	7.60	8.40	9.00	4,408	4,435	4,464
Oklahoma	1,175	969	736	6.70	9.40	11.80	7,872	9,109	8,685
Texas	1,600	1,250	1,062	9.00	10.00	12.20	14,400	12,500	12,956
Montana	292	280	280	11.20	12.00	15.00	3,270	3,360	4,200
Idaho	400	325	276	9.40	10.50	14.00	3,760	3,412	3,864
Wyoming	129	102	90	10.00	10.50	14.80	1,290	1,071	1,332
Colorado	575	492	443	9.50	11.00	14.30	5,462	5,412	6,335
New Mexico	71	59	47	9.00	11.00	13.00	639	649	611
Arizona	24	21	18	9.50	11.00	13.00	228	231	234
Utah	90	64	55	10.10	11.50	14.00	909	736	770
Nevada	31	27	22	9.00	12.00	15.00	279	324	330
Washington	221	198	158	13.00	13.00	15.70	2,873	2,574	2,481
Oregon	270	223	201	10.50	11.00	15.00	2,835	2,453	3,015
California	624	532	468	10.50	10.20	15.20	6,552	5,426	7,114
United States	65,937	55,769	51,223	9.72	12.38	15.21	640,767	690,328	779,348

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 524.—*Swine: Numbers in countries having 150,000 or over, pre-war and years 1921–1926*

[Thousands—i. e., 000 omitted]

Country	Month of estimate	Average pre-war [1]	1921	1922	1923	1924	1925	1926
NORTH AND CENTRAL AMERICA AND WEST INDIES								
Canada	June	3,350	3,905	3,916	4,405	5,069	4,426	-------
United States [2]	-------	61,865	58,711	59,355	68,447	65,937	55,769	51,223
Mexico	June	[3] *811*	-------	-------	552	760	-------	-------
Guatemala	-------	188	48	96	32	57	-------	-------
Salvador	-------	220	-------	-------	-------	-------	-------	-------
Dominican Republic	May	-------	*674*	-------	-------	-------	-------	-------
SOUTH AMERICA								
Venezuela	-------	195	512	-------	-------	-------	-------	-------
Peru	February–April	-------	-------	469	429	-------	-------	-------
Chile	-------	172	-------	263	-------	-------	-------	-------
Brazil	September	18,401	[4] *16,169*	-------	-------	-------	-------	-------
Uruguay	-------	[5] *180*	[6] *804*	-------	-------	-------	-------	-------
Argentina	December	[7] *2,901*	3,237	3,221	*1,437*	-------	-------	-------
EUROPE								
England and Wales	June	2,390	2,505	2,299	2,612	3,228	2,644	-------
Scotland	do	150	145	151	186	199	162	-------
Ireland	do	1,261	977	1,037	1,352	1,127	843	-------
Norway [8]	do	[9] 334	127	-------	237	249	253	-------
Sweden	do	1,023	[4] 1,011	-------	-------	-------	-------	-------
Denmark	July	2,715	1,430	1,899	2,855	2,868	2,546	-------
Holland	May–June	1,350	1,519	-------	-------	-------	-------	-------
Belgium	December	1,533	977	976	1,139	1,176	1,139	-------
France	do	7,529	4,941	5,166	5,196	5,406	5,802	-------
Spain	do	2,544	-------	5,152	4,229	4,728	4,160	-------
Portugal	-------	[10] *1,111*	[4] *921*	-------	-------	-------	-------	-------
Italy	March–April	2,685	[11 12] 2,509	-------	-------	-------	-------	-------
Switzerland	April	*570*	*640*	-------	-------	-------	-------	-------
Germany	December	22,533	14,179	15,818	14,678	[13] 17,308	16,895	16,160
Austria	do	1,932	1,326	-------	*1,478*	-------	-------	-------
Czechoslovakia	do	2,516	2,201	-------	-------	[14] 2,580	-------	-------
Hungary	April	3,322	-------	2,473	2,133	2,458	2,633	-------
Yugoslavia	January	3,956	*3,373*	2,902	2,578	2,497	-------	-------
Greece	-------	346	404	-------	-------	-------	-------	-------
Bulgaria	December	546	*1,090*	-------	-------	-------	-------	574
Rumania	-------	3,262	3,160	3,147	2,925	3,133	-------	-------
Poland	-------	5,231	5,425	-------	-------	5,500	-------	-------
Lithuania	-------	1,358	1,343	1,514	1,697	1,564	-------	-------
Latvia	June	557	482	402	487	458	497	-------
Esthonia	-------	252	261	272	339	285	-------	-------
Finland	September	422	375	378	382	376	-------	-------
Russia	Summer	11,250	10,423	6,738	8,104	15,125	14,203	-------

[1] Average for 5-year period immediately preceding war if available, otherwise for any years within this period except as otherwise stated. In countries having changed boundaries the figures are estimates for one year only of numbers within present boundaries.

[2] Revised estimates of Division of Crop and Livestock Estimates, 1921–1926. These figures are made on the basis of census figures of 1920 and 1925, of annual assessment data and other information. The estimates prepared in the Bureau of Animal Industry by adjustment of the census figures to a Jan.1 basis and including all animals in towns and villages as well as on farms and ranges are as follows: Average 59,300; 1921, 58,600; 1922, 60,900; 1923, 71,500; 1924, 69,100; 1925, 56,700.

[3] Year 1902.

[4] Year 1920.

[5] Year 1908.

[6] Year 1916.

[7] June, 1914.

[8] Number in rural communities.

[9] September.

[10] Year 1906.

[11] Year 1918.

[12] Estimated for present boundaries. The number within former boundaries on Apr. 6, 1918, amounted to 2,338,926.

[13] No census was made in December, 1923, which estimate would have been considered as of January 1924, in this table as explained in the general note, so the figure for October, 1923, has been used.

[14] Unofficial.

TABLE 524.—*Swine: Numbers in countries having 150,000 or over, pre-war and years 1921–1926*—Continued

[Thousands—i. e., 000 omitted]

Country	Month of estimate	Average pre-war	1921	1922	1923	1924	1925	1926
AFRICA								
Morocco		[15] 16	115	78	49	56		
Algeria	September	111	114	102	107			
Union of South Africa		*1,082*	*915*	*941*	*914*	*778*		
Madagascar		600	458	406		314		
ASIA								
Russia		2,037	[16] 2,068	[16] 899	[16] 1,291	2,547	[16] 2,196	
China (includes Manchuria).		76,819						
Japan	December	297	528	500	512	668		
Chosen	do	629	977	1,011	1,101		1,130	
Formosa	do	1,293	1,303	1,281	1,267			
Siam		749	864					
Philippine Islands	December	1,763	3,639	4,477	5,241	7,525		
Java and Madura			97	107				
Outer Possessions			805	808				
OCEANIA								
Australia	December	910	764	960	986	898		
New Zealand	January	*849*	350	384	401	414	440	

Division of Statistical and Historical Research. Census returns are in italics; other returns in roman. All estimates for countries reporting as of December have been considered as of January of the following year.

[15] Year 1915.

[16] Excludes Transcaucasia and Turkestan The number in Turkestan and Azerbaijan (part of Transcaucasia) in 1920 amounted to 102,000.

TABLE 525.—*Hogs: Summary of spring and fall pig surveys*

State	Sows farrowed						Average number of pigs saved per litter [1]				Intended farrowing [2] (Sows bred or to be bred)					
	Spring, 1923, compared with spring, 1922	Fall, 1923, compared with fall, 1922	Spring, 1924, compared with spring, 1923	Fall, 1924, compared with fall, 1923	Spring, 1925, compared with spring, 1924	Fall, 1925, compared with fall, 1924	1924		1925		Fall, 1923, compared with actual 1922	Spring, 1924, compared with actual 1923	Fall, 1924, compared with actual 1923	Spring, 1925, compared with actual 1924	Fall, 1925, compared with actual 1924	Spring, 1926, compared with actual 1925
							Spring	Fall	Spring	Fall						
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*					*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Maine	82.0	125.8	87.5	101.0	80.4	89.5	5.7	6.2	6.8	6.9	160.2	130.3	119.3	107.2	111.9	130.2
New Hampshire	103.6	158.4	83.7	89.4	91.3	90.1	5.9	6.7	7.5	7.0	192.2	111.0	117.9	113.9	165.3	119.1
Vermont	127.2	112.8	89.1	75.0	75.0	81.3	6.7	7.1	6.9	6.9	165.8	124.0	112.1	104.4	124.4	109.8
Massachusetts	90.2	132.9	107.0	92.9	91.9	102.3	5.9	5.9	6.1	5.9	134.4	134.4	130.5	111.2	124.4	114.6
Rhode Island	100.0	124.2	60.0	41.5	66.7	86.7	6.5	7.5	8.8	7.5	165.2	92.3	137.5	176.5	83.3	106.2
Connecticut	108.1	114.8	75.5	67.0	78.2	98.6	5.7	7.2	6.6	5.3	111.6	90.8	101.6	79.6	108.3	102.5
New York	105.9	113.9	77.6	80.9	84.8	92.5	6.1	6.3	7.3	6.8	149.3	117.3	105.1	107.4	113.3	108.5
New Jersey	98.6	106.8	82.3	87.2	77.7	101.7	5.1	6.1	6.4	6.4	128.9	104.4	113.2	100.4	102.3	109.4
Pennsylvania	107.4	103.8	83.0	88.9	76.7	98.8	5.5	5.9	6.4	6.3	137.4	109.4	108.8	95.2	101.4	106.3
Ohio	107.0	97.7	83.9	74.6	80.7	82.6	5.8	6.1	6.3	6.0	123.2	93.8	91.7	85.8	95.0	103.4
Indiana	107.0	96.3	81.4	68.2	77.9	80.6	5.4	5.7	6.3	5.9	119.6	92.4	89.8	86.4	95.3	108.0
Illinois	108.3	94.9	76.3	65.6	83.0	89.0	5.2	5.4	5.9	5.8	122.3	91.6	81.9	92.3	99.5	112.2
Michigan	115.8	104.7	78.5	72.6	84.2	87.8	6.2	6.3	6.7	6.2	131.8	98.0	88.7	92.8	108.6	108.4
Wisconsin	106.6	101.9	75.8	61.5	84.5	96.8	5.5	5.8	6.4	5.9	123.9	94.7	80.9	92.4	110.9	117.2
Minnesota	105.1	93.7	81.6	69.4	88.0	81.7	5.0	5.5	5.7	5.4	119.5	96.7	92.1	93.7	107.7	110.1
Iowa	116.9	93.7	81.8	66.4	81.5	93.0	5.1	5.4	5.6	5.5	112.4	95.3	82.4	92.4	101.6	113.7
Missouri	108.1	90.6	75.7	64.2	77.9	82.8	5.0	5.6	6.0	5.9	124.3	92.7	88.6	82.7	97.9	110.0
North Dakota	116.0	112.7	92.2	105.0	73.7	77.2	4.9	5.5	5.6	5.4	203.0	121.8	140.2	90.1	120.3	112.7
South Dakota	111.4	90.4	82.9	81.5	77.6	84.3	4.6	4.7	5.2	5.1	150.4	99.3	103.0	93.5	104.2	108.2
Nebraska	109.0	86.5	80.6	75.1	74.8	78.8	4.9	5.1	5.3	5.3	142.0	97.3	88.9	88.5	98.1	111.8
Kansas	114.8	89.3	69.9	64.1	74.3	77.0	5.8	5.6	5.7	5.8	132.4	87.0	91.2	83.0	97.7	109.8
Corn Belt [3]	108.3	93.9	79.7	69.4	80.1	[4] 85.4	5.2	[4] 5.5	[4] 5.8	[4] 5.7	125.5	94.6	88.6	89.6	100.9	[4] 111.1
Delaware	104.1	117.4	98.1	76.7	85.5	104.1	5.2	6.4	6.4	6.1	112.4	112.2	113.6	76.2	93.0	121.4
Maryland	95.7	108.9	86.8	79.1	84.7	90.4	5.5	6.1	6.4	6.2	137.0	106.1	90.9	84.1	98.7	110.6
Virginia	98.9	100.7	87.7	84.7	81.1	91.7	5.9	5.8	6.7	6.6	127.6	98.9	106.5	97.3	107.3	105.9
West Virginia	99.8	110.1	78.6	88.0	76.5	94.0	6.2	6.4	6.9	6.6	125.9	108.5	108.7	90.7	85.2	105.3
North Carolina	92.6	97.3	84.5	82.4	80.9	80.8	5.3	5.3	6.0	5.9	133.8	113.3	124.1	102.3	107.7	109.1
South Carolina	102.6	86.3	82.5	82.9	76.7	71.8	4.7	4.8	5.0	5.3	140.7	124.2	103.5	106.5	110.4	112.8
Georgia	85.5	75.2	77.9	74.4	97.4	89.7	4.7	5.1	5.8	5.4	118.9	111.0	113.7	115.2	113.2	114.1
Florida	89.5	84.0	74.4	79.1	83.8	90.2	4.6	5.1	5.2	4.9	127.3	117.9	112.4	125.7	106.7	110.8
Kentucky	101.2	91.3	64.8	76.2	78.6	91.2	5.2	5.8	6.1	6.0	115.2	86.1	79.4	92.1	114.6	116.5

Tennessee	97.7	79.0	63.8	68.6	70.0	84.6	5.2	5.7	5.9	6.0	129.9	91.2	95.8	95.4	103.8	115.3
Alabama	85.0	75.6	82.9	84.1	83.5	79.2	4.5	4.6	5.5	5.0	129.1	112.1	111.6	119.9	113.2	118.6
Mississippi	89.7	85.5	74.8	75.9	83.5	80.8	4.5	5.2	5.2	5.2	134.1	113.3	111.8	113.7	120.0	124.4
Arkansas	90.1	75.1	71.8	68.3	81.9	82.4	4.8	4.9	5.4	5.8	147.0	115.2	105.7	108.7	125.2	122.2
Louisiana	79.5	74.2	76.8	81.4	82.5	73.2	4.5	4.3	5.1	5.6	122.1	117.7	117.7	121.2	107.4	150.0
Oklahoma	93.8	70.8	49.9	59.1	79.7	69.5	5.1	5.6	5.6	5.8	133.5	82.6	90.5	93.2	120.2	101.6
Texas	76.7	81.8	66.4	74.6	111.6	62.5	4.8	5.1	5.4	5.0	130.4	97.0	107.2	106.2	129.5	107.7
Montana	120.2	106.9	127.0	95.7	82.7	79.4	5.2	5.4	6.3	6.1	173.8	128.7	140.3	96.0	149.6	101.1
Idaho	130.5	109.3	96.7	82.5	78.8	90.5	5.6	6.1	6.0	6.1	161.2	111.8	126.4	92.9	93.1	118.7
Wyoming	131.2	132.0	115.2	95.1	69.6	94.2	5.2	5.1	5.8	6.2	222.4	110.0	127.3	106.7	126.6	117.6
Colorado	117.6	100.1	73.5	69.6	81.3	92.7	5.0	5.2	5.6	5.0	153.9	111.1	110.6	108.4	101.6	113.5
New Mexico	65.5	66.7	81.8	59.0	78.9	83.0	5.3	7.0	6.3	5.5	110.5	78.3	116.4	121.7	152.8	105.3
Arizona	116.5	91.9	96.6	50.0	81.1	77.8	4.6	5.7	5.3	5.0	110.4	115.7	108.0	114.3	71.4	76.9
Utah	130.9	112.8	73.5	65.9	90.1	72.7	5.8	6.4	5.0	6.2	232.1	133.3	102.6	131.5	130.2	125.0
Nevada	130.0	138.5	98.6	64.7	67.5	76.3	6.1	6.7	5.8	6.8	158.0	140.0	134.5	86.1	134.5	119.2
Washington	126.0	107.8	97.4	78.7	78.0	79.0	6.1	6.3	6.3	6.7	145.7	133.0	136.0	99.0	92.1	116.9
Oregon	113.6	95.3	91.9	92.4	72.3	80.7	6.2	6.4	7.1	6.6	124.0	111.8	105.8	93.0	92.3	109.3
California	122.8	74.2	85.9	81.4	68.4	84.2	5.7	5.4	5.4	6.2	140.0	101.4	85.7	116.5	110.8	118.2
United States	103.9	91.3	78.8	71.8	81.2	84.6	5.1	5.5	5.8	5.7	128.3	98.8	94.1	94.3	104.5	111.9

Division of Crop and Livestock Estimates. Based on reports of about 140,000 farmers gathered in cooperation with Post Office Department through the rural mail carriers. Periods covered: Dec. 1 to June 1 (spring), June 1 to Dec. 1 (fall).

[1] Total pigs saved divided by sows farrowed as reported by farmers.
[2] Intentions are as of the close of the preceding 6-months' period; for example, those for spring farrowing 1926 were intentions expressed as of Dec. 1, 1925.
[3] Total of 12 States immediately preceding, i. e. Ohio to Kansas.
[4] Not including North Dakota.

TABLE 526.—*Hogs: Receipts and shipments at principal markets and all markets, 1909–1925*

[Thousands—i. e., 000 omitted]

RECEIPTS

Year	Chicago	Denver	East St. Louis	Fort Worth	Kansas City	Omaha	South St. Joseph	South St. Paul	Sioux City	Total nine markets	All other markets reporting	Total all markets reporting
1909	6,619	242	2,473	868	3,093	2,135	1,694	725	1,077	18,926	(1)	(1)
1910	5,587	187	2,054	541	2,086	1,894	1,353	836	1,044	15,582	(1)	(1)
1911	7,103	220	3,124	556	3,168	2,367	1,922	911	1,349	20,720	(1)	(1)
1912	7,181	222	2,530	388	2,523	2,886	1,970	984	1,698	20,382	(1)	(1)
1913	7,571	247	2,584	404	2,568	2,543	1,869	1,257	1,533	20,576	(1)	(1)
1914	6,618	256	2,559	515	2,265	2,259	1,725	1,590	1,257	19,044	(1)	(1)
1915	7,652	344	2,592	464	2,531	2,643	1,698	2,155	1,761	21,840	14,373	36,213
1916	9,188	467	3,057	968	2,979	3,117	2,199	2,675	2,131	26,781	16,484	43,265
1917	7,169	352	2,706	1,062	2,277	2,797	1,920	1,928	2,149	22,360	15,682	38,042
1918	8,614	384	3,256	762	3,328	3,430	2,351	2,061	2,421	26,607	18,256	44,863
1919	8,672	368	3,651	588	3,141	3,179	2,126	2,190	2,322	26,237	18,232	44,469
1920	7,526	341	3,399	413	2,466	2,708	1,914	2,247	2,173	23,187	18,934	42,121
1921	8,148	334	3,330	382	2,205	2,665	1,785	2,210	1,739	22,798	18,303	41,101
1922	8,156	395	3,606	510	2,655	2,839	2,061	2,523	1,856	24,601	19,466	44,067
1923	10,460	495	4,831	486	3,615	3,649	2,457	3,338	2,989	32,320	23,010	55,330
1924	10,443	569	4,580	392	2,933	3,978	2,234	3,751	3,732	32,612	22,802	55,414
1925	7,996	467	3,512	312	2,067	3,355	1,673	3,637	3,396	26,415	17,514	43,929

SHIPMENTS

1909	1,664	(1)	891	(1)	(1)	278	47	137	180	3,197	(1)	(1)
1910	1,202	(1)	615	(1)	(1)	238	34	194	186	2,469	(1)	(1)
1911	1,527	(1)	880	(1)	(1)	217	41	244	320	3,229	(1)	(1)
1912	1,573	(1)	679	(1)	(1)	407	167	228	522	3,576	(1)	(1)
1913	1,673	(1)	918	(1)	(1)	381	70	320	453	3,815	(1)	(1)
1914	1,291	(1)	989	(1)	(1)	331	153	531	230	3,525	(1)	(1)
1915	1,133	11	991	61	417	631	174	795	571	4,784	3,836	8,620
1916	1,405	22	1,071	98	445	726	92	1,181	824	5,864	6,115	11,979
1917	1,219	27	1,026	264	295	796	87	868	891	5,473	7,098	12,571
1918	971	18	980	166	527	889	285	877	911	5,624	8,749	14,373
1919	1,101	33	1,420	102	523	648	209	868	913	5,817	8,549	14,366
1920	1,657	32	1,721	65	602	710	330	342	879	6,338	8,960	15,298
1921	2,170	22	2,044	98	486	695	267	511	690	6,983	7,726	14,709
1922	1,852	28	2,378	94	588	613	355	482	666	7,056	8,276	15,332
1923	2,370	102	2,990	108	889	869	455	609	1,205	9,597	9,545	19,142
1924	2,989	109	3,010	44	1,065	867	629	835	1,492	11,040	9,163	20,203
1925	2,395	123	2,374	17	831	942	478	811	1,329	9,300	6,967	16,267

Division of Statistical and Historical Research. Prior to 1915 receipts compiled from yearbooks of stockyard companies; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool. Prior to 1915 shipments compiled from yearbooks of stockyard companies, except East St. Louis (1909 to 1914 from Merchants' Exchange Annual Report); subsequent figures from data of the reporting service of the Division of Livestock, Meats and Wool.

[1] Figures not available prior to 1915.

TABLE 527.—*Hogs: Receipts at all public stockyards, 1915–1925*

[Thousands—i. e., 000 omitted]

Year	Jan.	Feb	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1915 [1]	3, 959	3, 449	3, 199	2, 487	2, 768	2, 874	2, 368	2, 024	1, 966	2, 457	3, 728	4, 934	36, 213
1916 [1]	5, 309	4, 233	3, 489	2, 852	3, 332	3, 054	2, 524	2, 634	2, 386	3, 640	4, 873	4, 939	43, 265
1917	5, 084	3, 933	3, 369	2, 961	3, 264	2, 791	2, 563	1, 853	1, 615	2, 676	3, 941	3, 992	38, 042
1918	4, 444	4, 486	4, 424	3, 696	3, 345	2, 979	3, 099	2, 467	2, 376	3, 399	4, 594	5, 554	44, 863
1919	5, 855	4, 412	3, 643	3, 648	3, 831	3, 773	2, 974	2, 095	2, 397	3, 121	3, 740	4, 980	44, 469
1920	5, 262	3, 422	3, 940	3, 024	4, 210	3, 709	2, 811	2, 491	2, 391	2, 789	3, 872	4, 200	42, 121
1921	4, 700	4, 009	3, 386	3, 229	3, 328	3, 579	2, 727	2, 656	2, 655	3, 214	3, 687	3, 931	41, 101
1922	4, 278	3, 613	3, 411	3, 066	3, 737	3, 776	2, 980	3, 037	3, 062	3, 682	4, 421	5, 004	44, 067
1923	5, 306	4, 492	4, 927	4, 318	4, 524	4, 204	4, 181	3, 714	3, 607	4, 816	5, 416	5, 825	55, 330
1924	6, 253	5, 335	4, 833	4, 374	4, 321	4, 296	4, 091	3, 197	3, 216	3, 990	4, 904	6, 604	55, 414
1925	6, 105	4, 558	3, 528	3, 247	3, 283	3, 507	2, 798	2, 549	2, 741	3, 390	3, 843	4, 380	43, 929

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Complete information for 1915 and 1916, particularly on disposition of stock, is not obtainable from many of these markets.

TABLE 528.—*Hogs: Receipts at Chicago, East St. Louis, Kansas City, and Omaha, combined, 1900–1925*

[Thousands—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1900	1, 502	1, 265	1, 240	1, 190	1, 424	1, 333	1, 043	1, 025	1, 029	1, 303	1, 428	1, 414
1901	1, 528	1, 457	1, 174	1, 222	1, 523	1, 275	1, 461	1, 110	940	1, 150	1, 694	1, 811
1902	1, 609	1, 489	1, 197	995	1, 148	1, 174	824	827	778	1, 068	1, 229	1, 374
1903	1, 316	1, 175	938	1, 016	1, 195	1, 171	1, 107	961	875	836	1, 068	1, 437
1904	1, 440	1, 445	1, 113	1, 125	1, 213	1, 200	660	1, 035	762	940	1, 369	1, 417
1905	1, 610	1, 289	1, 249	1, 043	1, 297	1, 357	999	935	884	1, 128	1, 315	1, 473
1906	1, 608	1, 356	1, 206	1, 075	1, 306	1, 372	1, 144	1, 149	837	947	1, 046	1, 221
1907	1, 499	1, 332	1, 165	1, 210	1, 455	1, 312	1, 298	1, 020	925	930	894	1, 403
1908	2, 225	1, 672	1, 445	1, 086	1, 454	1, 315	1, 072	992	937	1, 353	1, 580	1, 703
1909	1, 703	1, 359	1, 602	1, 161	1, 299	1, 187	929	823	846	966	1, 184	1, 261
1910	1, 179	1, 128	934	788	1, 057	1, 138	892	893	687	768	1, 020	1, 134
1911	1, 270	1, 302	1, 516	1, 304	1, 521	1, 487	1, 200	976	970	1, 231	1, 533	1, 451
1912	1, 908	1, 612	1, 358	1, 252	1, 381	1, 218	1, 092	846	763	1, 093	1, 207	1, 387
1913	1, 640	1, 315	1, 170	1, 154	1, 257	1, 328	1, 129	1, 095	1, 081	1, 153	1, 288	1, 655
Av. 1909–1913	1, 540	1, 343	1, 316	1, 132	1, 303	1, 272	1, 048	927	869	1, 042	1, 246	1, 378
1914	1, 479	1, 328	1, 182	1, 001	1, 065	1, 167	927	832	827	1, 093	1, 158	1, 640
1915	1, 669	1, 640	1, 511	1, 080	1, 234	1, 222	1, 037	921	803	848	1, 387	2, 066
1916	2, 313	1, 950	1, 516	1, 154	1, 366	1, 283	1, 090	1, 221	954	1, 407	1, 996	2, 091
1917	2, 199	1, 697	1, 367	1, 205	1, 320	1, 125	1, 083	757	545	902	1, 286	1, 461
1918	1, 657	1, 888	1, 963	1, 697	1, 464	1, 246	1, 356	1, 047	932	1, 376	1, 794	2, 207
1919	2, 418	1, 978	1, 631	1, 571	1, 644	1, 680	1, 314	829	913	1, 129	1, 485	2, 049
1920	2, 136	1, 357	1, 630	1, 059	1, 686	1, 433	1, 131	988	795	894	1, 381	1, 611
Av. 1914–1920	1, 982	1, 691	1, 543	1, 252	1, 397	1, 308	1, 134	942	824	1, 093	1, 498	1, 875
1921	1, 916	1, 708	1, 346	1, 276	1, 340	1, 493	1, 122	1, 092	946	1, 092	1, 459	1, 558
1922	1, 785	1, 454	1, 303	1, 130	1, 520	1, 646	1, 263	1, 216	1, 104	1, 299	1, 631	1, 905
1923	2, 173	1, 879	2, 017	1, 778	1, 840	1, 730	1, 827	1, 616	1, 515	1, 917	2, 049	2, 215
1924	2, 509	2, 202	1, 913	1, 662	1, 656	1, 752	1, 678	1, 297	1, 218	1, 490	1, 891	2, 665
1925	2, 401	1, 821	1, 339	1, 204	1, 271	1, 468	1, 128	1, 029	1, 098	1, 201	1, 355	1, 617
Av. 1921–1925	2, 157	1, 813	1, 584	1, 410	1, 525	1, 618	1, 404	1, 250	1, 176	1, 400	1, 677	1, 992

Division of Statistical and Historical Research. Prior to 1915 from yearbooks of stockyard companies; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 529.—*Hogs: Receipts, local slaughter, and stocker and feeder shipments public stockyards, 1915–1925*

[Thousands—i. e., 000 omitted]

RECEIPTS

Market	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Albany, N. Y.	-------	26	50	5	2	2	1	(1)	(1)	(1)	(1)
Amarillo, Tex.	11	26	19	11	2	7	8	108	65	21	20
Atlanta, Ga.	-------	-------	36	47	83	68	91	124	201	159	124
Augusta, Ga.	-------	-------	7	8	9	7	10	11	11	7	4
Baltimore, Md.	959	1,002	810	805	963	1,154	1,238	1,343	1,547	1,513	1,007
Boston, Mass.	8	22	20	14	22	14	8	8	5	8	11
Buffalo, N. Y.	1,806	1,692	1,114	1,301	1,352	1,494	1,603	1,475	1,831	1,656	1,131
Chattanooga, Tenn.	-------	16	14	13	14	11	17	13	16	19	20
Cheyenne, Wyo.	-------	-------	9	1	3	10	45	35	69	170	196
Chicago, Ill.	7,652	9,188	7,169	8,614	8,672	7,526	8,148	8,156	10,460	10,443	7,996
Cincinnati, Ohio	1,180	1,260	1,239	1,463	1,674	1,478	1,435	1,347	1,401	1,365	1,040
Cleveland, Ohio	977	970	898	1,314	1,084	1,012	960	1,092	1,185	1,269	785
Dallas, Tex.	-------	101	87	62	45	56	52	71	111	108	54
Dayton, Ohio	118	91	88	118	108	129	131	139	167	161	122
Denver, Colo.	344	467	352	384	368	341	334	395	495	569	467
Detroit, Mich.	543	650	431	408	389	444	359	445	538	556	439
East St. Louis, Ill.	2,592	3,057	2,706	3,256	3,651	3,399	3,330	3,606	4,831	4,580	3,512
El Paso, Tex.	4	13	21	19	17	15	29	35	27	28	26
Evansville, Ind.	-------	139	148	222	255	243	219	235	256	191	152
Fort Wayne, Ind.	-------	-------	-------	-------	-------	-------	-------	-------	58	91	94
Fort Worth, Tex.	464	968	1,062	763	588	413	382	510	486	392	312
Fostoria, Ohio	68	76	67	96	79	99	107	105	111	117	106
Indianapolis, Ind.	2,435	2,576	2,351	2,750	2,936	2,897	2,695	2,267	2,876	2,865	2,067
Jacksonville, Fla.	-------	12	16	72	78	100	99	81	107	86	54
Jersey City, N. J.	1,175	1,137	744	566	468	629	509	458	513	535	467
Kansas City, Mo.	2,531	2,979	2,277	3,328	3,141	2,466	2,205	2,655	3,615	2,933	2,067
Knoxville, Tenn.	11	11	15	12	37	42	14	57	44	52	38
Lafayette, Ind.	98	119	123	186	198	204	166	105	129	142	122
Lancaster, Pa.	19	26	398	578	63	185	44	76	155	81	66
Laredo, Tex.	-------	-------	-------	-------	-------	-------	-------	-------	2	3	3
Los Angeles, Calif.	-------	-------	-------	-------	-------	-------	-------	-------	227	270	217
Louisville, Ky.	393	738	680	758	750	428	382	497	626	470	295
Marion, Ohio	-------	-------	-------	49	155	217	95	109	103	82	54
Memphis, Tenn.	-------	1	(1)	3	11	30	8	10	85	80	66
Milwaukee, Wis.	583	536	411	545	585	554	489	466	555	523	459
Montgomery, Ala.	-------	-------	10	48	171	109	97	95	73	62	47
Moultrie, Ga.	-------	-------	-------	-------	-------	-------	42	52	33	30	38
Muncie, Ind.	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	74
Nashville, Tenn.	-------	337	479	581	727	615	436	517	492	312	243
Newark, N. J.	-------	-------	-------	-------	-------	-------	-------	-------	576	605	533
New Orleans, La.	-------	61	58	50	63	63	50	41	46	50	30
New York, N. Y.	363	349	552	651	677	755	902	1,091	1,160	1,199	928
North Salt Lake, Utah	-------	59	42	45	53	34	56	84	234	475	380
Ogden, Utah	-------	-------	57	59	104	78	177	198	256	280	255
Oklahoma City, Okla.	485	759	634	571	470	341	371	504	488	325	276
Omaha, Nebr.	2,643	3,117	2,797	3,430	3,179	2,708	2,665	2,839	3,649	3,978	3,355
Pasco, Wash.	-------	-------	-------	6	7	2	2	1	2	9	9
Peoria, Ill.	281	370	262	395	390	354	424	386	573	880	706
Philadelphia, Pa.	168	227	219	273	345	481	485	473	358	375	278
Pittsburgh, Pa.	1,091	878	1,746	1,808	1,779	2,439	2,277	2,690	3,054	3,038	2,312
Portland, Oreg.	303	323	222	228	205	175	150	224	287	357	265
Pueblo, Colo.	5	19	17	23	24	14	5	11	16	38	29
Richmond, Va.	73	99	78	60	156	212	170	219	273	329	197
South St. Joseph, Mo.	1,698	2,199	1,920	2,351	2,126	1,914	1,785	2,061	2,457	2,234	1,673
South St. Paul, Minn.	2,155	2,674	1,928	2,061	2,190	2,247	2,209	2,523	3,338	3,751	3,637
San Antonio, Tex.	36	59	40	30	25	39	70	63	61	64	56
Seattle, Wash.	-------	179	130	127	126	95	134	151	218	275	256
Sioux City, Iowa	1,761	2,131	2,149	2,421	2,322	2,173	1,739	1,856	2,989	3,732	3,396
Sioux Falls, S. Dak.	-------	-------	6	62	174	247	452	533	503	122	191
Spokane, Wash.	6	37	38	44	60	47	33	48	82	133	166
Springfield, Ohio	-------	-------	-------	-------	-------	-------	-------	-------	64	91	109
Toledo, Ohio	250	304	278	255	232	264	148	140	158	154	126
Washington, D. C.	-------	82	58	56	72	102	113	132	166	193	140
Wichita, Kans.	476	573	495	618	494	382	369	570	706	734	631
Discontinued [2]	448	530	465	839	496	557	527	533	110	44	(1)
Total	36,213	43,265	38,042	44,863	44,469	42,121	41,101	44,067	55,330	55,414	43,929

[1] Not over 500

[2] Includes only those markets which have been totally discontinued.

TABLE 529.—*Hogs: Receipts, local slaughter, and stocker and feeder shipments, public stockyards, 1915–1925*—Continued

[Thousands—i. e., 000 omitted]

LOCAL SLAUGHTER [3]

Market	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Albany, N. Y.	-------	-------	3	1	2	2	(1)	(1)	-------	(1)	-------
Amarillo, Tex.	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	2
Atlanta, Ga.	-------	-------	27	24	37	42	61	62	95	78	87
Augusta, Ga.	-------	-------	5	3	5	5	7	9	7	6	4
Baltimore, Md.	726	747	558	514	661	874	1,013	1,020	1,202	1,197	836
Buffalo, N. Y.	-------	784	488	617	730	631	670	663	834	849	539
Chattanooga, Tenn.	-------	-------	-------	7	13	11	17	13	16	19	20
Chicago, Ill.	6,519	7,784	5,950	7,643	7,572	5,870	5,977	6,323	8,092	7,451	5,601
Cincinnati, Ohio	656	601	688	706	823	789	898	669	784	854	755
Cleveland, Ohio	826	776	578	850	729	610	688	750	927	987	547
Dallas, Tex.	-------	101	87	62	45	56	52	71	111	108	54
Dayton, Ohio	83	67	57	60	61	76	83	99	101	102	92
Denver, Colo.	331	444	327	366	336	310	311	367	394	459	344
Detroit, Mich.	-------	561	297	287	336	360	269	279	358	350	311
East St. Louis, Ill.	1,600	1,987	1,680	2,276	2,231	1,678	1,289	1,229	1,842	1,570	1,138
El Paso, Tex.	-------	-------	15	7	9	11	14	17	22	25	23
Evansville, Ind.	-------	24	36	40	31	80	73	65	78	52	19
Fort Wayne, Ind.	-------	-------	-------	-------	-------	-------	-------	-------	18	19	20
Fort Worth, Tex.	392	860	797	568	464	322	277	416	377	349	295
Fostoria, Ohio	-------	1	27	13	10	10	11	7	9	11	7
Indianapolis, Ind.	1,496	1,511	1,326	1,394	1,434	1,359	1,377	1,528	1,792	1,577	1,131
Jacksonville, Fla.	-------	-------	15	68	66	72	47	26	26	19	21
Jersey City, N. J.	1,175	1,137	744	566	468	629	509	458	513	535	467
Kansas City, Mo.	2,114	2,527	1,978	2,655	2,600	1,838	1,713	2,052	2,721	1,872	1,237
Knoxville, Tenn.	1	4	6	1	3	2	9	18	22	26	25
Lafayette, Ind.	-------	57	39	33	37	40	44	56	61	68	60
Lancaster, Pa.	-------	-------	-------	8	13	11	17	20	20	27	29
Laredo, Tex.	-------	-------	-------	-------	-------	-------	-------	-------	2	2	3
Los Angeles, Calif.	-------	-------	-------	-------	-------	-------	-------	-------	211	268	211
Louisville, Ky.	129	168	132	138	173	156	180	231	365	323	234
Marion, Ohio	-------	-------	-------	2	10	13	16	29	28	25	16
Memphis, Tenn.	-------	-------	-------	-------	2	1	4	6	65	69	56
Milwaukee, Wis.	566	529	394	463	534	509	482	459	548	515	453
Montgomery, Ala.	-------	-------	-------	-------	3	5	2	3	5	3	2
Moultrie, Ga.	-------	-------	-------	-------	-------	-------	26	45	26	19	30
Muncie, Ind.	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	31
Nashville, Tenn.	-------	29	46	57	67	82	113	125	180	186	154
Newark, N. J.	-------	-------	-------	-------	-------	-------	-------	-------	576	605	533
New Orleans, La.	-------	52	41	36	43	45	40	34	42	42	25
New York, N. Y.	363	349	552	651	677	755	902	1,091	1,160	1,199	928
North Salt Lake, Utah	-------	1	31	39	39	25	36	42	51	69	50
Ogden, Utah	-------	-------	3	52	67	47	47	47	66	68	64
Oklahoma City, Okla.	476	732	530	504	360	288	331	449	419	274	240
Omaha, Nebr.	2,012	2,391	2,001	2,541	2,531	1,998	1,971	2,226	2,780	3,109	2,416
Pasco, Wash.	-------	-------	-------	(1)	(1)	(1)	-------	-------	-------	-------	-------
Peoria, Ill.	125	132	96	143	153	135	164	105	118	136	109
Philadelphia, Pa.	-------	-------	202	264	329	457	457	439	331	355	265
Pittsburgh, Pa.	157	155	290	279	279	413	505	507	597	674	520
Portland, Oreg.	173	189	129	137	103	91	112	158	187	180	165
Pueblo, Colo.	-------	-------	-------	(1)	-------	-------	1	(1)	(1)	(1)	(1)
Richmond, Va.	70	5	74	58	154	210	169	216	260	311	194
South St. Joseph, Mo.	1,524	2,107	1,833	2,064	1,919	1,584	1,517	1,706	2,001	1,605	1,196
South St. Paul, Minn.	1,370	1,499	1,068	1,307	1,317	1,905	1,668	2,039	2,728	2,919	2,824
San Antonio, Tex.	-------	-------	28	15	7	16	33	41	45	50	41
Seattle, Wash.	-------	179	130	125	124	92	132	149	214	270	249
Sioux City, Iowa	1,189	1,307	1,257	1,511	1,411	1,296	1,047	1,194	1,781	2,227	2,076
Sioux Falls, S. Dak.	-------	-------	(1)	(1)	(1)	5	57	74	69	58	59
Spokane, Wash.	3	18	25	34	42	32	21	32	58	94	103
Springfield, Ohio	-------	-------	-------	-------	-------	-------	-------	-------	5	8	3
Toledo, Ohio	-------	102	53	46	53	86	24	14	21	26	14
Washington, D. C.	-------	82	55	54	71	101	112	129	165	193	140
Wichita, Kans.	471	564	392	503	469	356	348	527	623	689	597
Discontinued [2]	346	421	350	649	365	370	392	403	23	6	(1)
Total	24,893	30,984	25,440	30,441	30,018	26,761	26,335	28,737	36,172	35,188	27,665

[1] Not over 500.

[2] Includes only those markets which have been totally discontinued.

[3] Compiled from reports of stock sold or driven out for local slaughter, made by stockyards to the Division of Livestock, Meats, and Wool.

TABLE 529.—*Hogs: Receipts, local slaughter, and stocker and feeder shipments, public stockyards, 1915–1925*—Continued

[Thousands—i. e., 000 omitted]

STOCKER AND FEEDER SHIPMENTS

Market	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Amarillo, Tex.			(1)	(1)	1					
Atlanta, Ga.			4	4	8	5		1	1	(1)
Augusta, Ga.		(1)	1	1	(1)	(1)	1	(1)	(1)	(1)
Buffalo, N. Y.		2	1	(1)	(1)	(1)				(1)
Chattanooga, Tenn.			2	1						
Chicago, Ill.		45	25	14	1	2	3	2	1	(1)
Cincinnati, Ohio			2	1	3	4	2	4	2	2
Dayton, Ohio			(1)							
Denver, Colo.	9	22	17	32	30	22	26	93	54	40
Detroit, Mich.	(1)	1	2	8	5	5	(1)	(1)	1	1
East St. Louis, Ill.	13	12	77	98	47	44	63	41	11	14
El Paso, Tex.		(1)	8	4	3	8	5	2	1	2
Evansville, Ind.		12	10	10	4	4	9	6	3	5
Fort Wayne, Ind.								1	5	7
Fort Worth, Tex.		27	89	55	24	52	34	22	6	11
Fostoria, Ohio		2	5	3	1	2	4	4	3	3
Indianapolis, Ind.		35	45	41	17	21	17	18	15	13
Jacksonville, Fla.	1	(1)	3	1	2		(1)		1	1
Kansas City, Mo.	22	18	175	244	200	94	162	283	134	67
Knoxville, Tenn.		(1)	1	1	(1)	1	2			
Lafayette, Ind.	(1)	5	1	3	5	7	5	3	1	2
Laredo, Tex.									(1)	(1)
Los Angeles, Calif.								17	2	6
Louisville, Ky.			17	28	11	8	19	2	2	2
Marion, Ohio			1	4	2	2	3	2	2	1
Memphis, Tenn.	(1)			(1)	4	1	2	6	5	7
Milwaukee, Wis.		(1)	(1)	(1)						
Montgomery, Ala.		1	1	22	15	9	12	10	1	4
Moultrie, Ga.						3	1	1	4	1
Muncie, Ind.										2
Nashville, Tenn.	23		36	28	18	2	1	1	1	1
Newark, N. J.								(1)	(1)	
New Orleans, La.		4	3	3	3	1	1	3	2	4
North Salt Lake, Utah	1	5	1	4	3	2	1	1	1	2
Ogden, Utah		1	1	13	11	2	5	4	6	3
Oklahoma, Okla.	18	70	69	43	21	13	9	17	7	1
Omaha, Nebr.	26	73	13	8	7	4	6	14	10	3
Pasco, Wash.			1							
Peoria, Ill.		1	4	(1)	3	8	5	7	4	4
Philadelphia, Pa.			1							
Portland, Oreg.	3	14	18	15	17	11	17	18	20	19
Pueblo, Colo.			(1)		(1)	(1)				
Richmond, Va.			(1)	1	(1)	(1)	(1)	2	1	1
St. Joseph, Mo.	11	33	34	27	24	9	11	17	13	30
St. Paul, Minn.	23	232	173	103	161	104	109	151	127	160
San Antonio, Tex.	29	1	2	2	2	4	13	10	7	9
Seattle, Wash.			2	2	3	1	1	3	3	7
Sioux City, Iowa	8	109	41	33	28	19	9	9	(1)	66
Sioux Falls, S. Dak.		5	3	2	2	3	4	4	1	1
Spokane, Wash.		8	9	15	12	6	7	9	12	10
Springfield, Ohio										5
Toledo, Ohio			1	2	2	(1)		(1)		(1)
Wichita, Kans.	6	44	87	20	23	13	20	32	26	15
Discontinued [2]	1	6	3	6	5	3	4	(1)		
Total	194	788	989	902	728	499	593	820	496	532

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

No stocker and feeder shipments for 1915.

[1] Not over 500.

[2] Includes only those markets which have been totally discontinued.

TABLE 530.—*Feeding swine: Inspected shipments from public stockyards, 1925*

Origin and destination	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
MARKET ORIGIN	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Denver, Colo.	755	334	1,017	994	467	1,272	284	251	330	684	408	382	7,178
Fort Worth, Tex.	1,251	1,065	1,057	1,120	709	1,678	2,031	1,211	809	583	656	661	12,831
Indianapolis, Ind.	1,272	1,092	1,025	649	945	1,609	1,072	1,200	1,002	1,165	1,000	1,875	13,906
Kansas City, Kans.	5,006	3,493	7,185	5,266	4,280	5,017	4,965	1,942	4,747	4,653	3,198	5,472	55,224
Los Angeles, Calif.	------	------	857	------	184	183	253	946	801	456	791	------	4,471
National Stockyards, Ill.	1,670	919	3,077	2,887	1,461	2,644	3,969	1,377	1,512	1,186	936	2,286	23,924
Oklahoma, Okla.	532	1,032	1,831	1,056	688	936	1,283	841	840	310	331	671	10,321
Omaha, Nebr.	4,625	2,277	1,453	1,065	555	1,150	679	922	720	539	994	454	15,433
Portland, Oreg.	1,571	2,040	1,912	1,527	1,110	1,125	1,461	1,017	616	2,081	2,151	1,358	17,969
Sioux City, Iowa	453	159	392	266	258	258	270	308	376	491	791	505	4,527
South St. Joseph, Mo.	179	1,121	1,167	294	459	2,264	790	1,028	1,072	3,485	2,037	946	14,842
South St. Paul, Minn.	11,839	7,791	11,889	12,517	12,341	11,574	6,691	4,638	5,896	13,271	24,896	33,809	157,152
Wichita, Kans.	1,099	847	887	1,040	610	1,717	773	563	2,343	1,934	1,861	249	13,923
All other inspected	3,216	2,952	7,514	4,368	2,356	2,649	3,449	2,431	3,162	4,314	3,483	3,963	43,857
Total	33,468	25,122	41,263	33,049	26,423	34,076	27,940	18,675	24,226	35,152	43,533	52,631	395,558
STATE DESTINATION													
California	------	------	857	------	184	183	253	946	801	456	291	------	3,971
Colorado	404	334	871	994	467	1,272	284	251	149	684	408	338	6,456
Illinois	1,939	1,488	5,534	3,852	2,400	2,392	5,481	1,287	2,704	3,835	6,751	9,401	47,064
Indiana	1,517	1,976	2,161	2,327	3,517	2,864	2,766	2,549	1,476	2,618	2,880	7,136	33,787
Iowa	3,659	3,545	3,756	3,674	1,993	1,334	1,222	1,838	1,588	2,255	2,490	5,205	32,559
Kansas	2,509	197	1,538	1,909	849	2,697	1,270	916	1,520	1,028	2,163	1,129	17,725
Michigan	1,169	271	1,767	1,729	1,516	1,536	721	704	1,696	3,704	2,418	2,936	20,167
Minnesota	4,353	2,619	3,255	3,687	4,177	4,099	2,345	1,221	2,185	3,185	4,470	4,509	40,105
Missouri	1,897	2,055	3,817	2,779	1,304	4,577	3,986	2,114	2,289	2,652	1,486	2,725	31,681
Nebraska	5,055	2,871	2,232	1,561	2,310	1,863	1,003	792	1,752	1,138	2,237	1,074	23,888
Ohio	326	263	545	869	1,032	3,742	623	162	490	779	5,228	9,131	23,190
Oklahoma	852	1,032	2,125	769	567	1,061	1,043	559	690	401	331	641	10,071
Oregon	1,461	2,040	1,690	1,398	1,033	1,108	1,424	1,001	603	1,991	2,144	1,439	17,332
Tennessee	658	414	920	604	290	442	943	244	682	74	616	489	6,376
Texas	2,786	2,073	1,895	2,306	1,596	1,782	1,538	1,119	2,227	2,555	2,334	806	23,017
All other	4,883	3,944	8,300	4,591	3,188	3,124	3,038	2,972	3,374	7,797	7,286	5,672	58,169
Total	33,468	25,122	41,263	33,049	26,423	34,076	27,940	18,675	24,226	35,152	43,533	52,631	395,558

Division of Statistical and Historical Research. Compiled from Bureau of Animal Industry Inspection records.

TABLE 531.—*Hogs: Receipts, local slaughter, and stocker and feeder shipments at certain public stockyards, 1925*

[Thousands—i. e., 000 omitted]

Stockyard	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Baltimore, Md.:													
Receipts	129	98	84	78	82	65	57	56	66	92	103	97	1,007
Local slaughter	102	78	67	65	72	55	50	47	56	78	86	80	836
Buffalo, N. Y.:													
Receipts	150	103	82	93	83	75	58	84	80	111	114	98	1,131
Local slaughter	78	55	35	44	35	44	27	42	45	51	44	39	539
Stocker and feeder shipments	0	0	0	0	0	(1)	0	0	(1)	(1)	0	0	(1)
Chicago, Ill.:													
Receipts	1,281	920	598	538	530	633	512	448	449	570	677	840	7,996
Local slaughter	873	631	388	378	358	470	364	341	335	414	469	580	5,601
Stocker and feeder shipments	0	0	0	0	0	(1)	(1)	0	(1)	(1)	0	0	(1)
Cincinnati, Ohio													
Receipts	121	93	75	86	81	80	71	70	79	97	90	97	1,040
Local slaughter	83	66	56	62	58	62	56	52	57	67	63	73	755
Stocker and feeder shipments	0	(1)	1	1	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	2
Cleveland, Ohio:													
Receipts	119	84	65	63	57	50	38	45	55	69	63	77	785
Local slaughter	83	59	45	43	38	37	26	31	37	45	45	58	547

[1] Not over 500.

TABLE 531.—*Hogs: Receipts, local slaughter, and stocker and feeder shipments at certain public stockyards, 1925*—Continued

[Thousands—i. e., 000 omitted]

Stockyard	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Denver, Colo.:													
Receipts	62	49	44	43	38	39	25	23	26	26	41	51	467
Local slaughter	48	36	30	32	28	30	19	15	20	17	26	43	344
Stocker and feeder shipments	3	4	5	1	4	4	4	3	3	4	2	3	40
Detroit, Mich.:													
Receipts	47	30	34	43	33	35	20	21	33	43	49	51	439
Local slaughter	31	19	29	26	22	26	14	15	21	30	38	40	311
Stocker and feeder shipments	0	0	(1)	(1)	0	1	(1)	0	(1)	0	0	0	1
East St. Louis, Ill.:													
Receipts	396	284	265	262	294	264	242	245	300	307	309	344	3,512
Local slaughter	136	112	96	70	64	83	89	79	91	90	102	126	1,138
Stocker and feeder shipments	1	(1)	1	1	(1)	6	1	(1)	1	1	1	1	14
Fort Worth, Tex.:													
Receipts	51	40	47	29	22	25	18	13	16	15	20	16	312
Local slaughter	49	39	45	29	21	23	17	12	14	13	18	15	295
Stocker and feeder shipments	1	1	1	1	1	1	1	1	1	(1)	1	1	11
Indianapolis, Ind.:													
Receipts	305	170	117	140	147	173	154	149	146	182	184	200	2,067
Local slaughter	170	97	66	72	68	105	88	81	76	86	97	125	1,131
Stocker and feeder shipments	1	1	1	1	1	2	1	1	1	(1)	1	2	13
Jersey City, N. J.:													
Receipts	77	55	45	49	39	21	19	25	22	40	37	38	467
Local slaughter	77	55	45	49	39	21	19	25	22	40	37	38	467
Kansas City, Mo.:													
Receipts	268	210	161	148	168	192	128	129	161	160	170	172	2,067
Local slaughter	186	142	105	88	90	110	77	77	72	87	89	114	1,237
Stocker and feeder shipments	6	4	8	6	5	6	7	4	5	6	4	6	67
Los Angeles, Calif.:													
Receipts	30	26	26	15	18	17	14	12	13	11	18	17	217
Local slaughter	30	26	23	16	18	16	15	10	12	11	16	18	211
Stocker and feeder shipments	(1)	(1)	1	1	(1)	(1)	(1)	1	1	1	1	(1)	6
Milwaukee, Wis.:													
Receipts	45	33	31	35	26	27	25	17	30	69	58	63	459
Local slaughter	45	32	31	34	25	26	24	17	30	69	58	62	453
Oklahoma City, Okla.:													
Receipts	38	36	33	26	21	19	14	15	22	16	19	17	276
Local slaughter	35	32	30	23	18	17	11	12	20	14	15	13	240
Stocker and feeder shipments	0	(1)	1	(1)	0	0	(1)	0	(1)	(1)	0	(1)	1
Omaha, Nebr.:													
Receipts	455	407	315	255	279	379	246	207	188	164	199	261	3,355
Local slaughter	343	327	245	192	192	265	174	142	125	112	132	167	2,416
Stocker and feeder shipments	(1)	1	1	1	0	(1)	(1)	0	0	(1)	(1)	0	3
Pittsburgh, Pa.:													
Receipts	317	223	171	165	190	137	134	136	159	232	237	211	2,312
Local slaughter	72	47	32	38	40	35	31	29	34	50	54	58	520
Portland, Oreg.:													
Receipts	39	27	21	18	18	24	17	13	17	21	25	25	265
Local slaughter	27	20	12	14	11	17	12	7	6	10	12	17	165
Stocker and feeder shipments	3	2	2	2	1	1	1	1	1	2	2	1	19
South St. Joseph, Mo.:													
Receipts	252	183	117	105	126	158	119	101	105	115	124	168	1,673
Local slaughter	199	151	78	61	78	106	87	67	60	79	94	137	1,196
Stocker and feeder shipments	2	2	3	2	2	2	1	2	2	4	4	4	30
South St. Paul, Minn.:													
Receipts	494	347	308	269	245	246	209	122	159	332	424	482	3,637
Local slaughter	392	288	245	227	190	202	175	99	132	257	269	348	2,824
Stocker and feeder shipments	12	8	12	11	12	13	8	5	6	14	25	34	160
Sioux City, Iowa:													
Receipts	534	449	336	268	257	292	247	198	164	159	203	289	3,396
Local slaughter	289	270	230	155	145	206	162	133	96	109	128	153	2,076
Stocker and feeder shipments	0	5	5	5	4	4	4	7	5	4	11	12	66
Wichita, Kans.:													
Receipts	65	60	45	60	68	79	51	33	41	36	42	51	631
Local slaughter	63	58	42	58	65	75	49	31	37	33	39	47	597
Stocker and feeder shipments	1	1	1	1	1	1	1	1	2	2	1	2	15

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool. Local slaughter data from stockyards.

[1] Not over 500.

TABLE 532.—*Hogs: Monthly average live weight at Chicago, East St. Louis, Kansas City, and Omaha, 1909–1925*

CHICAGO

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
1909	203	204	206	212	216	219	225	232	232	227	225	214
1910	210	213	218	227	239	242	246	255	259	253	232	224
1911	226	230	239	241	242	236	233	239	224	212	208	213
1912	212	217	218	227	232	235	239	240	235	226	222	223
1913	226	230	240	242	242	244	243	233	222	209	207	213
Av. 1909–1913	215	219	224	230	234	235	237	240	234	225	219	217
1914	216	224	233	233	236	237	244	248	242	229	218	226
1915	223	224	231	233	233	231	238	246	235	204	187	190
1916	195	204	214	219	220	226	231	232	223	210	195	193
1917	199	204	209	213	217	225	232	233	231	212	209	211
1918	216	231	238	242	238	235	243	243	247	233	226	223
1919	228	232	230	230	232	233	242	251	254	237	226	224
1920	239	239	244	248	245	243	252	258	258	247	234	230
Av. 1914–1920	217	223	228	231	232	233	240	244	241	225	214	214
1921	234	234	241	242	239	241	250	259	262	243	225	226
1922	231	236	244	246	244	247	259	268	265	243	231	234
1923	239	241	247	249	242	242	250	253	254	247	234	231
1924	227	229	237	239	239	241	251	255	254	235	220	214
1925	220	222	229	235	236	238	249	256	253	242	228	225
Av. 1921–1925	230	232	240	242	240	242	252	258	258	242	228	226

EAST ST. LOUIS

1910	178	165	171	176	198	206	184	193	215	205	205	191
1911	188	195	202	197	170	180	190	185	186	173	169	159
1912	158	162	167	165	191	196	174	181	196	182	178	176
1913	182	180	170	179	181	183	185	183	182	182	178	169
1914	169	177	174	180	174	177	174	174	173	169	175	166
1915	170	174	176	175	175	180	180	186	183	165	169	174
1916	172	173	171	171	178	180	181	176	168	162	184	172
1917	175	179	175	171	175	173	177	175	182	181	181	185
1918	190	190	189	186	181	180	182	174	174	178	182	188
1919	189	184	173	176	182	182	181	183	181	176	183	181
1920	186	188	182	190	185	180	182	186	184	177	176	181
Av. 1914–1920	179	181	177	178	179	179	180	179	178	173	179	178
1921	211	210	200	198	198	201	204	206	196	196	205	207
1922	209	198	197	188	194	190	200	196	170	189	193	203
1923	211	206	198	197	193	200	203	205	201	192	200	207
1924	211	213	215	220	208	212	212	213	210	201	205	206
1925	212	218	214	208	206	204	210	217	217	204	207	214
Av. 1921–1925	211	209	205	202	200	201	206	207	199	196	202	207

Division of Statistical and Historical Research. Figures prior to 1921 compiled from yearbooks of stockyard companies. Subsequent figures compiled from reports of packer and shipper purchases, reporting service of the Division of Livestock, Meats, and Wool.

TABLE 532.—*Hogs: Monthly average live weight at Chicago, East St. Louis, Kansas City, and Omaha, 1909–1925*—Continued

KANSAS CITY

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Lbs.	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*	*Lbs.*
1909	202	204	199	201	198	198	200	203	192	194	198	198
1910	205	202	208	209	210	209	206	206	217	213	217	223
1911	226	225	225	223	213	197	188	201	195	185	182	182
1912	189	199	193	205	203	203	205	204	199	198	206	205
1913	213	212	213	216	208	206	202	193	190	185	178	178
Av. 1909–1913	207	208	208	211	206	203	200	201	199	195	196	197
1914	183	193	200	195	197	193	196	192	192	191	186	188
1915	201	204	201	204	204	197	199	202	198	192	194	203
1916	204	199	203	204	202	202	204	188	181	171	172	183
1917	189	189	192	191	193	196	190	180	183	195	198	206
1918	218	221	213	218	213	208	206	191	172	173	185	194
1919	200	201	191	194	193	194	194	193	181	175	187	189
1920	223	227	229	228	211	213	221	226	222	216	218	225
Av. 1914–1920	203	205	204	205	202	200	201	196	190	188	191	198
1921	236	236	233	229	224	211	223	225	216	222	216	223
1922	226	215	213	220	215	211	216	217	211	206	208	212
1923	222	221	221	215	207	216	222	228	225	206	212	218
1924	222	224	229	229	226	221	227	237	234	220	219	221
1925	229	232	238	235	234	230	233	242	233	229	226	237
Av. 1921–1925	227	226	227	226	221	218	224	230	224	217	216	222

OMAHA

1909	231	223	227	233	232	229	236	239	240	242	248	234
1910	229	226	231	235	249	249	250	259	278	284	274	262
1911	245	243	254	255	254	245	242	253	265	265	243	225
1912	217	222	222	231	233	234	232	238	241	235	235	238
1913	234	229	238	241	244	245	247	244	249	233	219	218
Av. 1909–1913	231	229	234	239	242	240	241	247	255	252	244	235
1914	224	232	238	242	247	250	255	261	268	265	253	242
1915	241	238	244	252	256	248	249	264	274	265	252	230
1916	216	216	224	228	232	236	243	247	249	249	224	211
1917	218	223	226	229	233	239	245	245	256	257	260	243
1918	240	243	249	242	246	248	261	260	264	264	240	227
1919	229	235	236	245	238	244	245	255	275	281	271	249
1920	242	242	250	251	247	247	256	263	272	271	260	248
Av. 1914–1920	230	233	238	241	243	245	251	256	265	265	251	236
1921	248	246	252	260	259	255	260	274	288	274	244	232
1922	235	238	247	255	257	258	267	280	286	276	249	238
1923	241	244	253	260	255	256	260	263	269	272	262	247
1924	239	239	245	249	250	250	255	266	264	259	238	217
1925	216	221	232	242	248	246	255	263	265	255	244	239
Av. 1921–1925	235	238	246	253	254	253	259	269	274	267	247	235

Division of Statistical and Historical Research. Figures prior to 1920 (East St. Louis, 1921), compiled from yearbooks of stockyard companies. Subsequent figures compiled from reports of packer and shipper purchases, reporting service of the Division of Livestock, Meats, and Wool.

TABLE 533.—*Lard and lard substitutes: Production in factories of the United States, by three-month periods, 1919–1925*

[Thousand pounds—i. e., 000 omitted]

LARD

Year	Jan. 1 to Mar. 31	Apr. 1 to June 30	July 1 to Sept. 30	Oct. 1 to Dec. 31	Total
1919	300,954	294,572	196,080	292,430	1,084,036
1920	356,315	332,870	262,498	305,775	1,257,458
1921	410,074	377,753	315,653	351,375	1,454,855
1922	416,049	397,424	341,348	420,819	1,575,640
1923	526,912	488,920	430,207	498,814	1,944,862
1924	590,760	508,886	402,365	432,534	1,934,545
1925	465,614	358,571	294,489	380,810	1,499,484

NEUTRAL LARD

1919	25,186	32,914	11,332	20,600	90,032
1920	25,250	23,167	12,656	16,617	77,690
1921	20,246	19,315	11,846	11,703	63,110
1922	11,717	8,943	11,034	17,738	49,432
1923	17,972	15,194	9,876	17,919	60,961
1924	20,745	16,671	12,886	18,022	68,324
1925	13,695	11,306	9,844	11,784	46,629

COMPOUND AND OTHER SUBSTITUTES

1922	187,636	146,382	207,349	242,813	784,180
1923	208,041	134,738	192,822	214,921	750,522
1924	178,146	181,023	192,377	278,889	830,435
1925	237,693	248,855	300,878	330,547	1,117,973

Division of Statistical and Historical Research. Compiled from quarterly reports of the Bureau of the Census on Animal and Vegetable Fats and Oils.

TABLE 534.—*Hogs: Corn and hog ratios,*[1] *United States, 1910–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Bush.	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*	*Bush.*
1910	12.2	12.0	13.6	14.4	13.3	12.9	12.2	11.7	13.0	14.2	15.1	14.9	13.3
1911	15.3	14.4	13.7	12.1	10.7	9.8	9.4	9.9	9.9	9.3	9.3	9.2	11.1
1912	9.1	8.8	8.6	9.0	8.4	8.1	8.3	9.1	10.1	12.0	13.2	14.1	9.9
1913	13.6	13.9	14.4	14.4	12.7	12.3	12.1	11.1	10.2	10.4	10.5	10.3	12.2
1914	10.8	11.3	11.2	10.9	10.3	9.9	10.1	10.3	10.2	10.0	10.4	10.2	10.5
1915	9.5	8.6	8.4	8.5	8.7	8.7	8.7	8.5	9.2	10.8	10.6	10.1	9.2
1916	9.8	10.5	11.4	11.5	11.4	11.0	10.9	10.6	11.1	10.4	10.1	9.8	10.7
1917	9.9	10.5	11.5	10.3	8.8	8.3	7.4	7.7	9.0	10.1	11.2	12.0	9.7
1918	11.2	10.3	10.1	10.2	10.3	10.0	9.9	10.1	10.8	11.0	11.5	11.3	10.6
1919	11.1	11.3	11.2	11.1	10.8	10.2	10.5	10.2	9.3	9.7	9.2	9.2	10.3
1920	9.3	9.2	8.9	8.4	7.6	7.1	7.8	8.5	10.1	13.0	15.0	13.2	9.8
1921	13.5	13.5	14.3	13.0	12.5	11.0	13.1	14.8	14.0	15.9	16.0	15.2	14.0
1922	15.4	16.5	15.8	15.7	15.0	14.7	14.7	13.7	13.4	13.4	12.8	11.7	14.4
1923	11.1	10.9	10.2	9.8	8.8	7.9	7.5	7.7	8.5	8.8	8.2	9.0	9.0
1924	9.0	8.5	8.6	8.6	8.5	8.1	6.7	8.0	7.7	8.7	8.7	7.9	8.2
1925	8.3	8.4	10.6	11.2	10.0	9.7	11.5	11.4	11.6	13.4	14.3	14.9	11.3

Division of Crop and Livestock Estimates.

[1] Number of bushels of corn required to buy 100 pounds of live hogs, based on averages of farm prices of corn and of hogs for the month.

TABLE 535.—*Hogs: Estimated price per 100 pounds, received by producers in the United States, 1910–1925*

Year beginning November	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	7.61	7.16	7.44	7.04	6.74	6.17	5.72	5.66	5.92	6.54	6.53	6.09	6.61
1911	5.86	5.72	5.74	5.79	5.94	6.78	6.79	6.65	6.64	7.11	7.47	7.70	6.43
1912	7.05	6.89	6.77	7.17	7.62	7.94	7.45	7.61	7.81	7.79	7.68	7.60	7.39
1913	7.33	7.16	7.45	7.75	7.80	7.80	7.60	7.43	7.72	8.11	8.11	7.43	7.60
Av. 1910–1913	6.96	6.73	6.85	6.94	7.02	7.17	6.89	6.84	7.02	7.39	7.45	7.20	7.01
1914	7.00	6.67	6.57	6.34	6.33	6.48	6.77	6.80	6.84	6.61	6.79	7.18	6.69
1915	6.35	6.02	6.32	7.07	7.86	8.21	8.37	8.21	8.40	8.61	9.22	8.67	7.61
1916	8.74	8.76	9.16	10.33	12.32	13.61	13.72	13.50	13.35	14.24	15.69	16.15	12.10
1917	15.31	15.73	15.26	15.03	15.58	15.76	15.84	15.37	15.58	16.89	17.50	16.50	15.78
1918	15.92	15.82	15.69	15.53	16.13	17.39	18.00	17.80	19.22	19.30	15.81	13.88	16.60
1919	13.36	12.66	13.36	13.62	13.59	13.73	13.44	13.18	13.65	13.59	13.98	13.57	13.43
1920	11.64	8.90	8.72	8.58	9.13	7.96	7.62	7.22	8.09	8.73	7.51	7.31	8.52
Av. 1914–1920	11.19	10.65	10.73	10.93	11.56	11.88	11.97	11.73	12.16	12.57	12.36	11.89	11.53
1921	6.66	6.52	6.89	8.24	9.08	8.83	9.05	9.11	9.12	8.54	8.23	8.33	8.10
1922	7.78	7.63	7.77	7.65	7.52	7.45	7.13	6.37	6.68	6.85	7.81	7.23	7.34
1923	6.66	6.39	6.59	6.54	6.63	6.70	6.68	6.55	6.60	8.54	8.50	9.45	7.06
1924	8.62	8.39	9.31	9.62	11.83	11.64	10.78	10.82	12.02	12.19	11.50	11.16	10.46
1925	10.66	10.51	------	------	------	------	------	------	------	------	------	------	------

Division of Crop and Livestock Estimates.

TABLE 536.—*Hogs: Average price per 100 pounds at Chicago, by months, 1901–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	6.10	6.35	6.70	7.20	7.30	7.65	7.85	7.75	8.20	7.75	8.00	8.35	7.35
1910	8.55	9.05	10.55	9.90	9.55	9.45	8.75	8.35	8.90	8.50	7.60	7.65	8.90
1911	7.95	7.40	6.85	6.25	6.00	6.25	6.70	7.30	6.90	6.45	6.30	6.40	6.70
1912	6.25	6.20	7.10	7.80	7.65	7.50	7.65	8.25	8.45	8.75	7.75	7.40	7.55
1913	7.45	8.15	8.90	9.05	8.55	8.65	9.05	8.35	8.30	8.20	7.75	7.70	8.35
Av. 1909–1913	7.26	7.43	8.02	8.04	7.81	7.90	8.00	8.00	8.15	7.93	7.48	7.50	7.77
1914	8.30	8.60	8.70	8.65	8.45	8.20	8.70	9.00	8.85	7.65	7.50	7.10	8.30
1915	6.90	6.80	6.75	7.30	7.60	7.60	7.75	6.90	7.25	7.90	6.65	6.40	7.10
1916	7.20	8.20	9.65	9.75	9.85	9.70	9.80	10.30	10.70	9.80	9.60	9.95	9.60
1917	10.90	12.45	14.80	15.75	15.90	15.50	15.20	16.90	18.20	17.15	17.40	16.85	15.10
1918	16.30	16.65	17.10	17.45	17.45	16.60	17.75	19.00	19.65	17.70	17.70	17.55	17.45
1919	17.60	17.65	19.10	20.40	20.60	20.40	21.85	20.90	17.45	14.35	14.20	13.60	17.85
1920	14.97	14.55	14.94	14.79	14.28	14.68	14.84	14.74	15.88	14.17	11.83	9.55	13.91
Av. 1914–1920	11.74	12.13	13.01	13.44	13.45	13.24	13.70	13.83	14.00	12.67	12.13	11.57	12.76
1921	9.41	9.42	10.00	8.50	8.35	8.19	9.69	9.26	7.61	7.72	7.01	6.92	8.51
1922	8.02	9.90	10.43	10.31	10.48	10.33	9.70	8.01	8.75	8.80	8.07	8.18	9.22
1923	8.29	8.02	8.18	8.08	7.53	6.92	7.04	7.65	8.35	7.42	6.85	6.87	7.55
1924	7.10	7.06	7.35	7.36	7.34	7.04	7.68	9.38	9.57	9.91	8.97	9.38	8.11
1925	10.38	11.06	13.55	12.55	12.06	12.57	13.46	12.66	12.52	11.31	11.28	10.97	11.81
Av. 1921–1925	8.64	9.09	9.90	9.36	9.15	9.01	9.51	9.39	9.36	9.03	8.44	8.46	9.04

Division of Statistical and Historical Research. Figures prior to 1920 from Chicago Drovers Journal Yearbook; subsequent figures compiled from reports of packer and shipper purchases of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 537.—*Hogs: Estimated price received by producers per 100 pounds, by States, 1925*

State	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	10.50	11.00	11.80	12.80	11.60	11.60	12.20	12.00	11.80	11.90	11.70	12.10	11.75
New Hampshire	10.50	10.70	11.80	12.80	11.50	12.00	13.20	------	11.60	12.00	11.00	11.60	11.70
Vermont	9.20	9.70	11.20	11.10	11.00	10.20	10.80	11.40	11.00	11.20	10.20	11.90	10.74
Massachusetts	10.30	10.90	12.60	13.00	11.70	12.00	12.90	13.20	12.10	12.20	12.40	11.90	12.10
Rhode Island	10.80	11.30	11.30	13.00	12.00	12.00	13.00	13.60	------	13.50	12.70	12.00	12.29
Connecticut	10.70	11.00	12.00	13.00	11.30	12.10	12.90	14.00	13.20	12.80	11.30	12.00	12.19
New York	10.20	10.50	11.30	12.60	11.90	12.10	12.30	12.00	12.20	12.00	11.80	12.00	11.74
New Jersey	10.50	10.80	12.20	11.80	12.50	10.90	13.00	12.60	13.50	13.50	11.70	12.50	12.12
Pennsylvania	10.30	10.70	12.10	12.50	12.00	12.30	13.20	13.60	13.20	12.90	12.30	12.30	12.28
Ohio	9.90	10.30	12.80	12.80	11.50	11.70	13.20	13.10	12.50	11.40	11.00	10.80	11.75
Indiana	10.00	10.30	12.90	12.50	11.90	11.70	13.20	13.30	12.40	11.60	11.00	10.90	11.81
Illinois	9.50	9.90	12.60	12.00	11.10	11.00	12.60	12.90	12.10	11.50	10.80	10.50	11.38
Michigan	9.30	9.50	11.70	11.40	11.10	11.20	12.10	12.50	12.10	11.60	10.60	10.70	11.13
Wisconsin	9.00	9.40	12.00	11.70	10.50	10.70	12.10	12.00	11.20	11.20	10.40	10.20	10.87
Minnesota	9.00	9.30	12.20	11.90	10.80	10.90	12.00	12.20	11.40	11.00	10.40	10.40	10.96
Iowa	9.50	9.80	12.60	12.20	11.20	11.10	12.50	12.40	11.50	10.90	10.30	10.20	11.18
Missouri	9.50	9.50	12.00	11.30	10.80	10.80	12.40	12.30	11.80	11.20	10.70	10.50	11.07
North Dakota	8.10	8.40	10.50	10.90	9.90	9.80	10.80	11.20	10.60	10.30	9.90	9.60	10.00
South Dakota	8.90	9.50	11.80	11.80	11.00	10.60	12.10	12.10	10.80	10.60	10.30	10.00	10.79
Nebraska	9.10	9.50	12.20	11.80	10.70	10.80	12.30	12.30	11.00	10.80	10.10	9.80	10.87
Kansas	9.30	9.70	12.80	11.80	10.90	10.90	12.50	12.60	11.60	11.40	10.60	10.10	11.18
Delaware	11.20	11.10	11.50	12.20	10.70	11.50	12.00	11.90	12.40	11.30	12.00	12.10	11.66
Maryland	10.60	10.00	12.10	12.10	11.20	11.70	12.90	13.30	12.30	13.00	12.60	12.50	12.02
Virginia	9.90	9.90	10.20	11.40	10.50	10.90	11.20	11.90	12.00	12.20	11.50	11.60	11.10
West Virginia	9.80	9.60	10.50	11.40	10.30	11.50	11.20	11.20	11.80	11.80	11.50	11.60	11.02
North Carolina	10.90	11.00	11.40	11.00	10.10	10.60	11.10	12.60	11.60	11.80	11.70	12.20	11.33
South Carolina	9.20	9.90	9.70	10.00	10.60	9.60	9.50	10.60	10.70	11.50	11.30	11.90	10.38
Georgia	8.90	9.00	9.20	10.00	10.20	10.00	10.50	10.80	11.00	11.20	10.70	10.10	10.13
Florida	8.00	8.80	8.60	9.80	8.30	9.00	9.60	10.50	10.00	9.30	10.40	9.50	9.32
Kentucky	8.90	9.50	11.60	11.60	11.10	11.00	12.40	12.80	12.50	11.80	11.10	11.30	11.30
Tennessee	9.30	9.40	11.90	11.20	10.60	10.60	11.70	11.70	11.40	11.30	11.10	11.00	10.93
Alabama	8.70	8.60	8.90	9.90	9.00	9.90	10.00	10.20	10.50	11.00	11.10	10.50	9.86
Mississippi	8.10	8.50	9.70	9.10	8.60	9.60	10.20	10.20	10.40	10.10	10.40	10.50	9.64
Arkansas	7.40	7.90	8.10	9.60	7.20	8.00	8.50	8.50	8.90	9.50	9.70	9.90	8.60
Louisiana	8.20	8.50	8.90	8.70	8.90	9.20	9.00	8.80	8.00	9.00	9.30	9.70	8.85
Oklahoma	9.00	9.10	11.50	11.30	9.80	10.00	11.40	12.30	10.90	11.00	10.50	9.80	10.55
Texas	8.50	9.40	10.80	10.70	10.10	10.10	10.30	11.00	10.80	10.70	10.40	10.70	10.29
Montana	8.40	8.70	10.30	11.10	10.20	10.10	10.50	11.60	11.20	11.10	10.40	10.40	10.33
Idaho	9.50	9.40	11.00	12.30	11.00	11.30	11.80	12.20	11.90	11.70	10.70	10.90	11.14
Wyoming	8.20	7.60	9.90	10.30	10.20	9.40	11.00	9.70	9.10	10.00	10.10	10.20	9.64
Colorado	8.80	9.30	12.20	11.50	10.60	10.40	12.20	12.10	11.70	11.20	10.60	10.30	10.86
New Mexico	8.00	8.70	------	11.00	9.60	10.40	11.40	10.50	10.60	9.00	10.00	9.90	9.92
Arizona	8.00	10.00	12.30	12.50	11.00	10.60	12.00	13.70	11.00	11.00	12.00	12.10	11.35
Utah	8.90	8.30	10.10	10.50	10.20	9.90	11.00	10.60	10.40	11 90	11.70	11.40	10.41
Nevada	9.00	9.50	11.10	11.60	11.50	10.00	11.60	13.00	11.50	12.00	12.50	12.20	11.29
Washington	10.10	10.00	12.20	12.80	11.40	11.20	12.50	13.30	13.50	12.50	12.00	11.60	11.92
Oregon	9.20	9.00	11.20	10.50	9.40	10.20	11.00	13.50	12.40	12.20	11.60	11.40	10.97
California	10.00	10.60	12.20	12.70	12.10	11.40	12.90	13.80	13.70	13.70	13.10	12.70	12.41
United States	9.31	9.62	11.83	11.64	10.78	10.82	12.02	12.19	11.50	11.16	10.66	10.51	11.00

Division of Crop and Livestock Estimates.

TABLE 538.—*Hogs: Average and top price per 100 pounds, at six markets, by months, 1925*

CHICAGO

Classification	January	February	March	April	May	June	Average, January to June
Butcher, bacon and shipper hogs:							
Medium to choice—							
Heavyweight (250–350 pounds)	10.71	11.26	13.74	12.58	12.15	12.60	12.17
Mediumweight (200–250 pounds)	10.33	11.02	13.68	12.64	12.24	12.56	12.08
Common to choice—							
Lightweight (160–200 pounds)	9.81	10.73	13.46	12.52	12.15	12.26	11.82
Light lights (130–160 pounds)	9.00	10.08	12.75	12.15	11.87	11.78	11.27
Packing hogs:							
Smooth	10.26	10.57	12.92	11.37	11.08	11.60	11.30
Rough	9.88	10.22	12.65	11.03	10.73	11.23	10.96
Slaughter pigs (130 pounds down), medium to choice	7.95	9.18	11.86	11.49	11.50	11.34	10.55
Bulk of sales	10.40	11.12	13.60	12.58	12.16	12.50	12.06
Top	11.25	12.40	14.60	14.00	13.35	13.85	[1] 14.60

Classification	July	August	September	October	November	December	Average, July to December
Butcher, bacon and shipper hogs:							
Medium to choice—							
Heavyweight (250–350 pounds)	13.60	12.99	12.82	11.58	11.37	10.86	12.20
Mediumweight (200–250 pounds)	13.77	13.23	13.11	11.67	11.46	11.09	12.39
Common to choice—							
Lightweight (160–200 pounds)	13.62	12.89	12.64	11.44	11.30	11.14	12.17
Light lights (130–160 pounds)	13.37	12.72	12.40	11.32	11.27	11.31	12.06
Packing hogs; smooth and rough	12.11	11.57	11.18	9.85	10.13	9.31	10.69
Slaughter pigs (90–130 pounds), medium to choice	13.06	13.10	12.57	11.72	11.55	11.88	12.31
Feeder and stocker pigs (70–130 pounds), medium to choice							
Bulk of sales	13.45	12.77	12.44	11.03	11.24	11.00	11.99
Top	14.75	14.55	14.25	13.40	12.00	12.30	[1] 14.75

EAST ST. LOUIS

Classification	January	February	March	April	May	June	Average, January to June
Butcher, bacon and shipper hogs:							
Medium to choice—							
Heavyweight (250–350 pounds)	10.83	11.42	13.90	12.58	12.16	12.72	12.27
Mediumweight (200–250 pounds)	10.75	11.36	13.86	12.65	12.28	12.73	12.27
Common to choice—							
Lightweight (160–200 pounds)	10.16	10.92	13.56	12.57	12.24	12.56	12.00
Light lights (130–160 pounds)	9.32	10.26	12.96	12.14	11.97	12.28	11.49
Packing hogs:							
Smooth	9.82	10.22	12.52	10.98	10.52	11.32	10.90
Rough	9.57	9.92	12.16	10.68	10.17	11.01	10.58
Slaughter pigs (130 pounds down), medium to choice	8.10	9.40	11.89	11.40	11.51	11.80	10.68
Feeder and stocker pigs (70–130 pounds), common to choice	7.43	8.72	10.85	10.55	10.79	11.16	9.92
Bulk of sales	10.57	11.25	13.79	12.66	12.30	12.70	12.21
Top	11.30	12.65	14.60	13.80	13.25	14.05	[1] 14.60

[1] Highest price, not average.

TABLE 538.—*Hogs: Average and top price per 100 pounds, at six markets, by months, 1925*—Continued

EAST ST. LOUIS—Continued

Classification	July	August	September	October	November	December	Average, July to December
Butcher, bacon and shipper hogs:							
Medium to choice—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Heavyweight (250–350 pounds)	14.02	13.21	12.84	11.66	11.53	11.16	12.40
Mediumweight (200–250 pounds)	14.09	13.46	13.21	11.84	11.64	11.33	12.60
Common to choice—							
Lightweight (160–200 pounds)	14.03	13.62	13.31	11.90	11.72	11.56	12.69
Light lights (130–160 pounds)	13.79	13.51	13.14	11.90	11.73	11.62	12.62
Packing hogs, smooth and rough	12.11	11.47	11.11	10.14	10.09	9.58	10.75
Slaughter pigs (90–130 pounds), medium to choice	13.27	13.16	12.80	11.93	11.84	11.67	12.44
Feeder and stocker pigs (70–130 pounds), medium to choice	12.60	12.48	12.21	11.63	11.69	11.28	11.98
Bulk of sales	14.14	13.59	13.26	11.92	11.74	11.52	12.70
Top	14.80	14.60	14.40	13.85	12.25	12.50	[1] 14.80

FORT WORTH

Classification	January	February	March	April	May	June	Average, January to June
Butcher, bacon and shipper hogs:							
Medium to choice—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Heavyweight (250–350 pounds)	10.67	11.32	13.53	12.14	11.63	12.15	11.91
Mediumweight (200–250 pounds)	10.70	11.28	13.49	12.14	11.66	12.22	11.92
Common to choice—							
Lightweight (160–200 pounds)	10.07	10.74	13.03	11.70	11.47	12.10	11.52
Light lights (130–160 pounds)	9.00	9.56	11.58	10.76	10.50	11.42	10.47
Packing hogs:							
Smooth	9.64	10.18	12.64	11.21	10.19	11.08	10.82
Rough	8.54	9.08	11.83	10.70	9.55	10.31	10.00
Slaughter pigs (130 pounds down), medium to choice	7.69	8.20	9.95	9.91	9.61	10.63	9.33
Bulk of sales	10.54	11.17	13.41	12.04	11.69	12.29	11.86
Top	11.25	12.40	14.40	13.25	12.95	13.60	[1] 14.40

Classification	July	August	September	October	November	December	Average, July to December
Butcher, bacon, and shipper hogs:							
Medium to choice—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Heavyweight (250–350 pounds)	13.40	12.86	12.61	11.60	11.10	11.19	12.13
Mediumweight (200–250 pounds)	13.48	12.96	12.88	11.93	11.60	11.49	12.39
Common to choice—							
Lightweight (160–200 pounds)	13.23	12.72	12.54	11.80	11.54	11.42	12.21
Light lights (130–160 pounds)	12.39	12.06	11.98	11.32	10.99	10.92	11.61
Packing hogs, smooth and rough	11.55	11.13	10.60	10.27	10.08	10.07	10.62
Slaughter pigs (90–130 pounds), medium to choice	11.48	11.35	11.58	11.17	11.00	10.44	11.17
Feeder and stocker pigs (70–130 pounds), medium to choice							
Bulk of sales	13.41	12.83	12.74	12.06		11.68	
Top	14.20	14.00	13.90	13.65	12.10	12.50	[1] 14.20

[1] Highest price, not average.

TABLE 538.—*Hogs: Average and top price per 100 pounds, at six markets, by months, 1925*—Continued

KANSAS CITY

Classification	January	February	March	April	May	June	Average, January to June
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Butcher, bacon, and shipper hogs:							
Medium to choice—							
Heavyweight (250–350 pounds)	10.43	11.06	13.49	12.17	11.68	12.34	11.87
Mediumweight (200–250 pounds)	10.38	10.98	13.44	12.24	11.79	12.34	11.86
Common to choice—							
Lightweight (160–200 pounds)	9.84	10.46	13.05	12.10	11.79	12.14	11.56
Light lights (130–160 pounds)	8.84	9.76	12.52	11.54	11.45	11.75	10.98
Packing hogs:							
Smooth	10.04	10.52	12.73	11.35	10.82	11.48	11.16
Rough	9.85	10.35	12.50	11.12	10.58	11.25	10.94
Slaughter pigs (130 pounds down), medium to choice	7.82	8.66	11.34	11.20	11.11	11.27	10.23
Feeder and stocker pigs (70–130 pounds), common to choice	7.02	8.18	10.85	10.92	11.20	11.50	9.94
Bulk of sales	10.26	10.88	13.41	12.17	11.74	12.34	11.80
Top	10.95	12.25	14.30	13.45	12.90	13.55	[1] 14.30

Classification	July	August	September	October	November	December	Average, July to December
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Butcher, bacon, and shipper hogs:							
Medium to choice—							
Heavyweight (250–350 pounds)	13.51	12.82	12.30	11.35	11.13	10.97	12.01
Mediumweight (200–250 pounds)	13.60	13.14	12.67	11.48	11.23	11.12	12.21
Common to choice—							
Lightweight (160–200 pounds)	13.41	13.18	12.76	11.51	11.29	11.23	12.23
Light lights (130–160 pounds)	13.21	13.15	12.76	11.44	11.32	11.37	12.21
Packing hogs, smooth and rough	12.21	11.70	10.91	10.18	10.26	9.72	10.83
Slaughter pigs (90–130 pounds), medium to choice	12.65	12.66	12.33	11.34	11.34	11.39	11.95
Feeder and stocker pigs (70–130 pounds), medium to choice	12.44	12.67	12.29	11.74	11.59	11.59	12.05
Bulk of sales	13.53	12.95	12.46	11.34	11.19	11.05	12.09
Top	14.25	14.15	13.70	13.25	11.85	12.00	[1] 14.25

OMAHA

Classification	January	February	March	April	May	June	Average, January to June
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Butcher, bacon and shipper hogs:							
Medium to choice—							
Heavyweight (250–350 pounds)	10.36	10.93	13.45	12.10	11.70	12.25	11.80
Mediumweight (200–250 pounds)	10.17	10.82	13.38	12.08	11.74	12.21	11.73
Common to choice—							
Lightweight (160–200 pounds)	9.82	10.46	12.99	11.93	11.68	12.07	11.49
Light lights (130–160 pounds)	8.86	9.72	12.50	11.49	11.54	11.70	10.97
Packing hogs:							
Smooth	9.94	10.40	12.87	11.51	11.14	11.47	11.22
Rough	9.72	10.18	12.62	11.26	10.88	11.12	10.96
Slaughter pigs (130 pounds down), medium to choice	7.74	8.70	10.94	10.27	10.65	11.19	9.92
Feeder and stocker pigs (70–130 pounds), common to choice	6.94	7.74	9.61	9.83	10.15	10.81	9.18
Bulk of sales	10.12	10.71	13.29	12.02	11.70	12.05	11.65
Top	10.85	12.25	14.35	13.25	12.85	13.45	[1] 14.35

[1] Highest price, not average.

TABLE 538.—*Hogs: Average and top prices per 100 pounds, at six markets, by months, 1825*—Continued

OMAHA—Continued

Classification	July	August	September	October	November	December	Average, July to December
Butcher, bacon and shipper hogs:							
Medium to choice—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Heavyweight (250–350 pounds)	13.17	12.58	12.23	11.06	11.07	10.67	11.80
Mediumweight (200–250 pounds)	13.21	12.87	12.44	11.23	11.14	10.75	11.94
Common to choice—							
Lightweight (160–200 pounds)	13.09	12.94	12.43	11.19	11.12	10.84	11.94
Light lights (130–160 pounds)	12.86	12.70	11.99	10.90	11.04	10.82	11.72
Packing hogs, smooth and rough	12.00	11.52	11.11	9.80	10.18	9.50	10.68
Slaughter pigs (90–130 pounds), medium to choice	11.66	12.38	11.65	10.68	11.08	-------	-------
Feeder and stocker pigs (70–130 pounds), medium to choice	11.23	-------	-------	-------	10.90	10.87	-------
Bulk of sales	12.82	12.38	11.86	10.60	10.76	10.65	11.51
Top	14.00	13.85	13.60	13.00	11.60	11.50	[1] 14.00

SOUTH ST. PAUL

Classification	January	February	March	April	May	June	Average, January to June
Butcher, bacon andshipper hogs:							
Medium to choice—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Heavyweight (250–350 pounds)	10.11	10.82	13.32	12.17	11.70	12.14	11.71
Mediumweight (200–250 pounds)	9.98	10.71	13.23	12.15	11.73	12.16	11.66
Common to choice—							
Lightweight (160–200 pounds)	9.58	10.46	13.00	12.11	11.74	12.12	11.50
Light lights (130–160 pounds)	8.77	9.93	12.51	11.97	11.69	12.04	11.15
Packing hogs:							
Smooth	9.69	10.24	12.22	10.87	10.53	11.08	10.77
Rough	9.44	9.98	11.94	10.62	10.26	10.80	10.51
Slaughter pigs (130 pounds down), medium to choice	7.49	9.06	11.62	11.69	11.62	11.99	10.58
Feeder and stocker pigs (70–130 pounds), common to choice	7.28	8.75	11.50	11.68	11.62	11.99	10.47
Bulk of sales	9.82	10.52	13.06	12.14	11.76	12.10	11.57
Top	10.60	12.00	14.10	13.25	12.50	13.10	14.10

Classification	July	August	September	October	November	December	Average, July to December
Butcher, bacon and shipper hogs:							
Medium to choice—	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Heavyweight (250–350 pounds)	13.03	12.44	12.12	10.90	10.97	10.72	11.70
Mediumweight (200–250 pounds)	13.15	12.63	12.37	10.99	11.02	10.83	11.83
Common to choice—							
Lightweight (160–200 pounds)	13.10	12.81	12.49	11.03	11.07	10.92	11.90
Light lights (130–160 pounds)	12.93	12.76	12.44	11.01	11.10	11.11	11.89
Packing hogs, smooth and rough	11.84	11.43	10.94	9.60	9.92	9.10	10.47
Slaughter pigs (90–130 pounds), medium to choice	12.80	-------	-------	11.50	11.38	11.79	-------
Feeder and stocker pigs (70–130 pounds), medium to choice	13.00	12.94	12.38	11.50	11.38	11.79	12.16
Bulk of sales	12.67	12.23	11.86	10.37	10.81	10.89	11.47
Top	14.00	14.00	13.75	12.75	11.60	11.75	[1] 14.00

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

Classification changed July 1, 1925.

[1] Highest price, not average.

TABLE 539.—*Swine: Slaughter in United States, by States, 1909, 1914, 1919, 1921 and 1923* [1]

State	1909				1914 [2]
	In wholesale slaughtering and meat packing establishments	Retail slaughter	On farms and ranges	Total slaughter	In wholesale slaughtering and meat packing establishments
	Number	*Number*	*Number*	*Number*	*Number*
California	344,319	134,523	82,270	561,112	400,306
Colorado	276,618	34,340	52,081	363,039	259,821
Illinois	7,293,544	410,221	762,545	8,466,310	7,205,510
Indiana	1,751,454	256,527	646,581	2,654,562	1,840,811
Iowa	2,487,251	139,525	507,167	3,133,943	2,394,061
Kansas	4,191,927	73,184	377,566	4,642,677	2,825,764
Maryland	554,761	110,163	180,406	845,330	622,626
Massachusetts	1,501,456	67,576	27,754	1,596,786	1,263,238
Michigan	444,756	150,426	381,247	976,429	761,380
Minnesota	1,063,655	88,133	314,597	1,466,385	1,559,491
Missouri	2,471,658	128,490	949,318	3,549,466	2,793,439
Nebraska	2,103,602	59,303	261,515	2,424,420	2,105,740
New Jersey	1,210,849	390,730	73,709	1,675,288	1,297,313
New York	1,802,669	214,157	386,264	2,403,090	1,725,488
Ohio	1,725,285	275,983	768,195	2,769,463	1,911,608
Pennsylvania	1,222,880	120,616	675,939	2,019,435	1,573,974
Texas	939,674	135,301	885,260	1,960,235	570,182
Washington	239,352	51,877	92,600	383,829	375,421
West Virginia	124,914	22,383	206,701	353,998	171,807
Wisconsin	1,078,361	114,993	386,243	1,579,597	1,116,449
All other States	1,041,631	991,984	7,360,559	9,394,174	1,675,524
Total	33,870,616	3,970,435	15,378,517	53,219,568	34,441,913

State	1919 [3]			1921 [2]	1923 [2]
	In wholesale slaughtering and meat packing establishments	On farms and ranges	Total wholesale and farm slaughter	In wholesale slaughtering and meat packing establishments	In wholesale slaughtering and meat packing establishments
	Number	*Number*	*Number*	*Number*	*Number*
California	500,123	109,582	609,705	630,512	1,187,767
Colorado	396,876	104,330	501,206	370,532	481,985
Illinois	9,976,191	723,838	10,700,029	7,827,427	10,500,112
Indiana	2,104,268	579,941	2,684,209	1,766,426	2,606,333
Iowa	3,302,333	537,961	3,840,294	3,092,725	4,540,847
Kansas	4,538,052	348,435	4,886,487	3,149,278	5,149,806
Maryland	654,438	189,898	844,336	930,303	1,063,677
Massachusetts	1,422,449	36,413	1,458,862	980,645	1,347,552
Michigan	881,030	348,798	1,229,828	893,399	1,344,472
Minnesota	2,197,152	379,611	2,576,763	2,759,604	4,195,890
Missouri	3,506,211	796,082	4,302,293	3,235,758	4,330,947
Nebraska	2,995,220	268,025	3,263,245	2,032,331	3,052,681
New Jersey	1,242,798	64,745	1,307,543	1,431,551	1,593,570
New York	1,614,479	404,104	2,018,583	1,862,042	2,455,579
Ohio	2,542,304	732,636	3,274,940	2,811,198	3,030,238
Pennsylvania	1,663,910	693,406	2,357,316	2,292,709	2,905,416
Texas	696,255	918,246	1,614,501	449,602	648,286
Washington	301,429	128,467	429,896	395,560	543,409
West Virginia	316,827	245,855	562,682	318,602	352,916
Wisconsin	1,444,115	438,831	1,882,946	1,288,792	2,037,082
All other States	2,224,266	8,751,026	10,975,292	2,207,784	3,649,732
Total	44,520,726	16,800,230	61,320,956	40,726,780	57,018,292

Division of Statistical and Historical Research. Compiled from reports of the Bureau of Census.

[1] In addition there were 2,898,994 hogs slaughtered on a custom basis in 1914 and 2,290,539 for 1919. No corresponding data for 1909, 1921, or 1923.

[2] No data collected by Bureau of the Census for 1914, 1921, or 1923, on farm or retail slaughter.

[3] No data obtainable for retail slaughter in 1919.

TABLE 540.—*Hogs: Prices of live hogs in Chicago, and wholesale and retail prices of certain pork products, 1913–1925*

Year	Price of live hogs, Chicago (Per 100 lbs.)	Hams				Bacon			
		Smoked, wholesale		Retail [1]		Short clear sides, wholesale		Retail	
		Chicago, (Price per pound)	Per cent of live hog price	In leading cities (Price per pound)	Per cent of live hog price	Chicago, (Price per pound)	Per cent of live hog price	In leading cities (Price per pound)	Per cent of live hog price
	Dollars	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*
1913	8.35	16.6	199	26.9	322	12.7	152	27.0	323
1914	8.30	16.7	201	27.3	329	13.2	159	27.5	331
1915	7.10	15.3	215	26.1	368	11.6	163	26.9	379
1916	9.60	18.5	193	29.4	306	14.9	155	28.7	299
1917	15.10	25.2	167	38.2	253	24.8	164	41.0	272
1918	17.45	31.8	182	47.9	274	27.9	160	52.9	303
1919	17.85	34.3	192	53.4	299	29.1	163	55.4	310
1920	13.91	33.4	240	55.5	399	20.7	149	52.3	376
1921	8.51	26.8	315	48.8	573	13.5	159	42.7	502
1922	9.22	26.5	287	48.8	529	14.1	153	39.8	432
1923	7.55	21.2	281	45.5	603	12.0	159	39.1	518
1924	8.11	20.2	249	45.3	559	14.4	178	37.7	465
1925	11.81	27.1	229	52.6	445	22.3	189	46.7	395
1925									
January	10.38	21.9	211	47.6	459	20.4	197	40.3	388
February	11.06	23.1	209	48.1	435	20.6	186	40.6	367
March	13.55	26.9	199	51.2	378	24.2	179	44.4	328
April	12.55	28.2	225	53.5	426	23.5	187	46.6	371
May	12.06	25.6	212	53.0	439	22.1	183	46.4	385
June	12.57	26.3	209	53.0	422	23.2	185	47.0	374
July	13.46	29.3	218	54.4	404	23.8	177	48.7	362
August	12.66	29.8	235	54.9	434	23.5	186	49.3	389
September	12.52	29.2	233	54.9	438	23.2	185	49.4	395
October	11.31	28.3	250	54.3	480	22.5	199	49.6	439
November	11.28	28.2	250	53.5	474	20.8	184	49.2	436
December	10.97	28.0	255	53.1	484	19.7	180	48.6	443

Year	Fresh pork				Lard			
	Pork loins, wholesale		Pork chops, retail		Prime contract, wholesale		Retail	
	Chicago, (Price per pound)	Per cent of live hog price	In leading cities (Price per pound)	Per cent of live hog price	New York (Price per pound)	Per cent of live hog price	In leading cities (Price per pound)	Per cent of live hog price
	Cents	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*	*Cents*	*Per cent*
1913	14.9	178	21.0	251	11.0	132	15.8	189
1914	15.4	186	22.0	265	10.4	125	15.6	188
1915	14.3	201	20.3	286	9.4	132	14.8	208
1916	16.2	169	22.7	236	13.5	141	17.5	182
1917	24.4	162	31.9	211	21.7	144	27.6	183
1918	29.5	169	39.0	223	25.5	146	33.3	191
1919	31.5	176	42.3	237	29.0	162	36.9	207
1920	30.7	221	42.3	304	20.0	144	29.5	212
1921	22.5	264	34.9	410	11.1	130	18.0	212
1922	21.7	235	33.0	358	11.5	125	17.0	184
1923	18.0	238	30.4	403	12.3	163	17.7	234
1924	19.1	236	30.8	380	13.3	164	19.0	234
1925	25.0	212	36.6	310	16.8	142	23.3	197
1925								
January	17.4	168	30.7	296	16.6	160	22.8	220
February	18.0	163	30.3	274	16.1	146	22.8	206
March	27.5	203	37.4	276	17.1	126	23.1	170
April	25.8	206	36.8	293	16.1	128	23.2	185
May	25.1	208	36.0	299	16.3	135	22.6	187
June	24.0	191	36.2	288	17.6	140	22.9	182
July	29.4	218	39.2	291	18.1	134	23.5	175
August	30.0	237	40.0	316	17.9	141	24.3	192
September	31.5	252	40.4	323	17.8	142	24.0	192
October	26.0	230	39.1	346	16.4	145	24.1	213
November	24.3	215	37.5	332	16.2	144	23.3	207
December	21.5	196	35.7	325	15.0	137	22.6	206

Division of Statistical and Historical Research. Wholesale prices of ham, bacon, and pork loins in Chicago and of lard in New York. Retail prices in leading cities throughout the United States. Price of live hogs, Bureau of Agricultural Economics; other prices from Bureau of Labor Statistics.

[1] Mostly on sliced ham.

TABLE 541.—*Hogs: Trend of average farm prices and average market prices per 100 pounds, at Chicago, 1910–1925*

Year	Weighted average farm price	Average market price at Chicago	Price relatives 1913=100		Year	Weighted average farm price	Average market price at Chicago	Price relatives 1913=100	
			Farm price	Market price				Farm price	Market price
	Dollars	*Dollars*				*Dollars*	*Dollars*		
1910	8.12	8.90	109.1	106.6	1918	15.82	17.45	212.6	209.0
1911	6.29	6.70	84.5	80.2	1919	16.04	17.85	215.6	213.8
1912	6.64	7.55	89.2	90.4	1920	12.85	13.91	172.7	166.6
1913	7.44	8.35	100.0	100.0	1921	7.85	8.51	105.5	101.9
1914	7.51	8.30	100.9	99.4	1922	8.32	9.22	111.8	110.4
1915	6.56	7.10	88.2	85.0	1923	7.11	7.55	95.6	90.4
1916	8.11	9.60	109.0	115.0	1924	7.46	8.11	100.3	97.1
1917	13 41	15.10	180.2	180.8	1925	10.88	11.81	146.2	141.4

Division of Statistical and Historical Research. Farm prices from Division of Crop and Livestock Estimates; market prices compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 542.—*Hogs: Monthly slaughter under Federal inspection, 1907–1925*

Year	January	February	March	April	May	June	July
1907	3,409,531	2,920,505	2,665,112	2,667,170	3,317,281	3,240,786	2,928,806
1908	4,961,421	3,889,864	3,111,115	2,304,271	3,087,525	3,093,389	2,415,570
1909	3,875,858	2,653,412	3,012,659	2,342,999	2,629,418	2,718,569	2,097,241
1910	2,692,780	2,323,582	1,891,000	1,778,410	2,206,472	2,612,116	1,988,403
1911	2,742,393	2,632,830	2,972,692	2,589,454	3,007,507	3,462,063	2,560,236
1912	4,146,732	3,301,955	2,700,401	2,411,926	2,843,878	2,835,470	2,353,889
1913	3,708,086	2,843,947	2,333,602	2,486,664	3,045,926	3,056,948	2,557,054
1914	3,489,384	2,722,763	2,547,752	2,311,724	2,569,035	2,925,635	2,259,540
1915	4,273,788	3,885,177	3,445,787	2,563,081	2,868,655	3,245,822	2,493,385
1916	5,387,333	4,275,567	3,430,145	2,853,326	3,274,941	3,162,569	2,530,249
1917	4,628,613	3,484,014	2,984,959	2,645,077	3,083,518	2,684,844	2,411,436
1918	3,960,892	3,998,084	3,925,986	3,290,489	3,092,325	2,782,792	2,940,491
1919	5,846,696	4,266,317	3,443,330	3,207,671	3,743,463	3,728,230	2,884,325
1920	5,078,521	3,103,530	3,481,680	2,590,208	3,584,781	3,566,071	2,643,772
1921	4,347,306	3,798,687	3,047,424	3,003,290	3,274,114	3,618,152	2,820,616
1922	3,984,704	3,479,907	3,350,214	2,945,757	3,716,170	4,046,304	3,104,322
1923	5,134,029	4,230,575	4,837,791	4,179,438	4,325,130	4,302,533	3,983,435
1924	5,911,242	5,006,290	4,536,372	4,073,243	4,277,565	4,287,552	4,113,814
1925	5,978,622	4,446,936	3,299,344	3,036,716	3,186,124	3,731,501	2,819,385

Year	August	September	October	November	December	Total
1907	2,300,785	1,988,210	2,218,979	2,134,622	3,093,590	32,885,377
1908	2,231,182	2,230,684	3,368,060	3,802,740	4,146,780	38,643,101
1909	1,821,934	1,955,445	2,397,039	2,800,080	3,090,242	31,394,896
1910	1,824,006	1,563,846	1,850,765	2,455,654	2,826,749	26,013,783
1911	2,084,911	2,171,798	2,719,927	3,039,269	3,602,875	34,132,955
1912	1,875,336	1,701,088	2,454,031	3,020,326	3,406,795	33,052,727
1913	2,268,333	2,132,735	2,681,399	3,165,206	3,918,685	34,198,585
1914	1,799,032	1,907,397	2,681,852	3,047,127	4,270,600	32,531,841
1915	2,040,506	1,890,484	2,493,831	3,738,879	5,441,833	38,381,228
1916	2,517,259	2,287,330	3,327,029	4,770,913	5,267,042	43,683,703
1917	1,704,852	1,321,674	2,195,291	3,042,827	3,722,599	33,909,704
1918	2,285,083	1,980,008	3,018,084	4,280,126	5,661,890	41,214,250
1919	1,949,413	1,997,149	2,685,711	3,270,172	4,790,353	41,811,336
1920	2,190,821	1,978,602	2,486,940	3,328,633	3,985,125	38,018,684
1921	2,530,459	2,422,350	2,866,133	3,447,027	3,806,797	38,982,355
1922	2,887,755	2,747,467	3,331,587	4,318,005	5,201,437	43,113,629
1923	3,556,030	3,212,350	4,327,951	5,340,678	5,903,759	53,333,708
1924	3,070,206	2,856,960	3,498,135	4,640,944	6,600,306	52,872,634
1925	2,452,825	2,597,887	3,314,353	3,646,155	4,533,019	43,042,867

Bureau of Animal Industry.

TABLE 543.—*Hogs, pork, and pork products: Statement of the livestock and meat situation, by months, 1925*

Item	Unit	January	February	March	April	May	June	July	August	September	October	November	December	Total
Inspected slaughter, hogs	Thousands	5,979	4,447	3,299	3,037	3,186	3,732	2,819	2,453	2,598	3,314	3,646	4,533	43,043
Carcasses condemned	do	20	16	14	12	13	15	11	11	11	11	14	14	159
Average live weight	Pounds	212	216	219	225	229	231	241	246	239	229	222	225	[1] 226
Average dressed weight	do	160	163	167	172	175	175	182	187	178	171	167	171	[1] 170
Total dressed weight (carcass, not including condemned).	1,000 pounds	950,738	723,465	547,771	519,331	555,823	650,452	512,095	457,345	461,253	563,747	600,706	773,924	7,322,710
Lard, per 100 pounds live weight.	Pounds	16	16	16	16	16	16	14	14	14	13	14	15	[1] 15
Storage first of month:														
Fresh pork	1,000 pounds	130,125	199,642	231,234	218,508	201,246	180,645	168,527	131,935	93,078	54,294	29,910	27,153	[2] 138,858
Cured pork	do	517,239	579,150	634,121	611,049	612,943	567,773	570,128	537,601	490,711	413,084	362,695	357,874	[2] 521,197
Lard	do	61,049	112,704	151,927	150,182	151,499	138,295	145,919	145,924	114,724	71,626	37,256	33,710	[2] 109,568
Exports: [3]														
Fresh pork	do	4,564	2,361	2,092	1,880	887	817	566	1,053	1,777	865	1,580	1,379	19,821
Cured pork	do	58,708	50,474	56,611	35,121	35,302	41,678	37,420	34,257	35,586	33,399	33,732	42,624	494,912
Canned pork	do	403	395	469	197	477	460	343	331	383	488	187	569	4,702
Sausage	do	1,174	1,282	1,304	1,333	1,153	353	778	787	797	684	762	830	11,737
Lard	do	80,546	61,476	64,250	46,018	72,408	61,192	51,645	47,585	64,407	46,569	40,918	70,669	707,683
Imports, fresh pork	do	478	391	671	635	470	393	785	1,023	672	666	323	228	7,235
Receipts of hogs [4]	Thousands	6,105	4,558	3,528	3,247	3,283	3,507	2,798	2,549	2,741	3,390	3,843	4,380	43,929
Stocker and feeder shipments.[4]	do	38	35	52	41	36	49	35	30	33	45	61	77	532
Price per 100 pounds:														
Average cost for slaughter.	Dollars	10.15	10.89	13.34	12.45	11.96	12.33	13.31	12.98	12.51	11.64	11.36	11.08	[1] 11.79
At Chicago—Live hogs, medium weight.	do	10.33	11.02	13.68	12.64	12.24	12.56	13.77	13.23	13.11	11.67	11.46	11.09	[2] 12.23
At eastern markets—														
Fresh pork loins, 10–15 pounds.	do	17.64	16.98	24.12	23.50	23.35	22.28	25.20	26.06	28.72	24.87	26.08	21.58	[2] 23.36
Shoulders, skinned	do	14.37	13.68	17.28	18.36	17.01	16.98	18.78	19.46	20.52	20.92	19.44	17.40	[2] 17.85
Picnics, 6–8 pounds	do	12.64	12.64	15.12	15.85	15.17	15.28	18.03	17.93	18.40	18.81	17.63	16.21	[2] 16.14
Butts, Boston style	do	17.32	17.00	20.81	22.14	19.80	20.32	22.67	23.61	24.42	24.10	23.53	21.54	[2] 21.44
Bacon, breakfast	do	23.42	23.08	26.56	29.00	28.01	28.79	31.25	31.61	31.91	32.27	31.79	29.17	[2] 28.90
Hams, smoked, 10–12 pounds.	do	20.58	21.22	25.75	26.98	25.12	25.21	27.26	27.52	26.93	27.00	26.35	25.50	[2] 25.45
Lard, tierces	do	17.67	17.04	18.03	17.77	16.88	17.72	18.72	19.00	19.02	18.10	17.00	16.38	[2] 17.78
Hogs on farms Jan. 1	Thousands	55,769												

Division of Statistical and Historical Research. Inspected slaughter from reports of Bureau of Animal Industry. Weights and storage holdings from reports of the Cold Storage Reports Section; receipts, shipments, and prices compiled from data of the reporting service of the Division of Livestock, Meats, and Wool, and number on farm from Division of Crop and Livestock Estimates. Exports and imports from Bureau of Foreign and Domestic Commerce.

[1] Weighted average, not total. [2] Simple average, not total. [3] Including reexports. [4] At public stockyards.

TABLE 544.—*Pork: Stocks in cold storage warehouses and meat-packing establishments, United States, 1916–1925*

[Thousand pounds—i. e., 000 omitted]

DRY SALT CURED AND IN PROCESS OF CURE

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1916	145,661	194,053	226,910	206,703	202,392	206,008	202,088	205,251	183,194	140,908	118,958	142,858
1917	200,998	228,424	259,059	234,396	219,819	213,802	224,813	231,905	195,678	143,319	110,652	150,882
1918	252,934	341,422	402,784	448,114	471,809	493,795	402,549	370,203	333,472	283,572	247,194	283,002
1919	357,254	471,747	435,661	430,205	425,411	402,652	381,736	366,547	338,270	332,786	281,930	242,224
1920	262,620	332,848	402,229	457,745	462,389	430,782	408,681	381,328	316,433	233,389	150,812	114,400
1921	144,997	202,909	251,893	255,390	246,443	240,610	250,752	231,511	200,291	149,974	108,611	96,731
1922	111,071	128,690	139,281	145,183	142,030	157,689	186,948	179,356	165,668	122,783	85,671	83,017
1923	121,125	155,922	178,024	206,429	227,728	214,453	217,862	221,716	191,711	146,974	108,850	110,824
1924	148,121	167,597	178,258	192,934	191,882	206,009	212,158	202,618	180,127	135,702	81,460	78,871
1925	118,718	136,125	150,819	142,950	145,548	142,292	162,518	164,374	152,555	128,599	106,011	96,746
Average 1921–1925	128,806	158,231	179,655	188,577	190,726	192,211	206,048	200,015	178,070	136,806	98,121	93,238

PICKLED,[1] CURED AND IN PROCESS OF CURE

1916	230,881	298,939	350,750	351,051	337,464	326,183	359,300	350,570	303,399	251,004	209,061	251,519
1917	307,178	348,269	378,847	362,931	381,236	403,185	412,810	403,704	328,943	252,152	192,884	204,907
1918	269,003	322,004	369,014	402,377	406,191	397,486	372,347	365,944	315,517	249,827	233,148	242,976
1919	303,763	392,260	435,197	431,714	434,671	440,989	422,387	384,764	341,724	297,712	239,719	226,893
1920	279,467	337,238	369,026	361,973	353,864	371,593	403,719	389,896	361,381	295,460	254,838	252,270
1921	294,993	316,328	376,376	367,553	355,041	366,291	366,346	346,623	320,190	257,244	212,528	221,345
1922	252,822	284,487	321,950	347,276	348,305	363,395	391,474	385,692	369,187	313,517	278,812	302,708
1923	377,107	412,806	451,279	469,130	499,119	483,673	473,569	449,441	413,798	367,374	325,456	384,604
1924	434,030	468,892	500,784	512,190	500,683	483,372	473,914	443,918	408,928	351,485	283,710	299,868
1925	398,521	443,025	483,302	468,099	467,395	425,481	407,610	373,227	338,156	284,485	256,684	261,128
Average 1921–1925	351,495	385,108	426,738	432,850	434,109	424,442	422,583	399,780	370,052	314,821	271,438	293,931

1916	44,194	63,376	88,604	88,344	77,812	83,195	82,571	85,845	63,420	38,851	23,988	32,015
1917	50,564	66,052	63,352	64,996	74,728	77,534	91,362	96,648	72,286	39,767	25,347	23,504
1918	41,663	61,659	104,630	116,548	117,786	118,601	117,976	108,220	71,385	46,593	36,968	34,750
1919	64,539	104,708	128,897	142,189	139,205	144,212	155,263	131,137	90,510	61,417	47,271	44,864
1920	55,551	106,677	132,095	148,922	144,453	156,963	170,054	161,804	129,197	87,592	67,148	60,007
1921	93,990	150,594	208,889	219,964	200,706	194,486	182,163	149,435	103,486	64,682	38,517	37,513
1922	51,203	71,722	86,219	98,765	103,907	114,571	128,962	117,903	84,815	46,796	30,688	33,774
1923	72,278	120,196	154,377	189,115	213,224	210,645	217,074	195,002	148,753	98,795	71,640	82,068
1924	126,718	164,491	199,044	227,284	215,767	201,728	186,566	164,049	121,816	77,986	42,561	48,781
1925	130,125	199,642	231,234	218,508	201,246	180,645	168,527	131,935	93,078	54,294	29,910	27,153
Average 1921–1925	94,863	141,329	175,953	190,727	186,970	180,415	176,658	151,665	110,390	68,511	42,663	45,858

Cold storage report section.

[1] Pickled pork includes sweet pickled, plain brine, and barreled pork.

TABLE 545.—*Lard: Total stocks in cold-storage warehouses and meat-packing establishments, United States, 1916–1925* [1]

[Thousand pounds—i. e. 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1916	63,304	92,342	111,897	97,237	108,731	85,113	87,127	95,991	82,028	71,570	56,929	58,950
1917	80,977	86,208	88,460	65,179	61,640	72,365	95,197	112,249	102,172	69,929	37,095	44,367
1918	54,539	59,310	65,355	89,854	103,373	106,194	107,871	102,411	104,668	90,398	76,124	81,676
1919	104,274	138,353	125,410	112,469	112,409	83,096	92,132	100,478	87,947	76,456	66,036	49,147
1920	62,614	97,649	111,975	132,993	141,819	152,307	193,316	191,531	170,774	109,258	47,329	36,683
1921	59,319	83,549	117,690	128,614	152,428	181,992	204,301	194,490	149,886	85,115	48,850	42,001
1922	47,541	61,202	61,297	86,031	96,055	123,798	154,254	143,084	119,755	75,338	36,750	32,506
1923	48,808	56,266	59,101	66,743	85,251	84,530	123,896	143,579	115,860	72,608	35,225	35,327
1924	49,340	54,130	68,610	85,722	102,317	127,949	152,520	149,672	124,676	84,198	31,706	35,713
1925	61,049	112,704	151,927	150,182	151,499	138,295	145,919	145,924	114,724	71,626	37,256	33,710
Average 1921–1925	53,211	73,570	91,725	103,458	117,510	131,313	156,178	155,350	124,980	77,777	37,957	35,851

Cold Storage Report Section.

[1] Lard includes all prime steam, kettle-rendered, neutral, and other pure lards. It does not include lard substitutes nor compounds.

TABLE 546.—*Pork and pork products: International trade, average 1911–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1911–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	1,977	9	24	19,202	89	4,841	200	579
Australia	923	6,294	[1] 1,025	[1] 3,367	[1] 2,574	[1] 2,243		
Brazil	3,767	278	13	6,428	183	44,693		2,183
Canada	29,189	47,694	62,767	103,915	54,602	108,273	28,365	139,295
China		7,679		9,828		8,515		10,110
Denmark	7,124	298,086	8,633	264,657	4,758	426,353	4,095	475,551
Irish Free State							59,303	104,963
Netherlands	88,143	139,916	23,508	119,099	33,230	133,661	24,718	225,747
New Zealand	248	1,049	46	2,040	3	4,562	46	3,438
Russia		28,871						
Sweden	6,736	19,445	19,560	24,470	19,712	33,588	14,691	41,797
United States	171	1,019,561	818	1,503,929	1,101	1,935,920	5,083	1,681,654
PRINCIPAL IMPORTING COUNTRIES								
Austria			94,502	681	102,100	618	74,890	1,780
Austria-Hungary	14,338	3,343						
Belgium	22,232	16,254	48,983	10,210	44,331	12,126	28,134	10,044
Chile	3,195	9	94	54	264	282		
Cuba	85,973		130,840		145,847		170,173	
Czechoslovakia			106,123	184	140,229	562	127,407	2,196
Finland	[2]	[2]	12,264	2,385	15,724	275	15,745	325
France	59,824	24,668	87,869	6,561	146,781	5,511	161,341	4,752
Germany	265,669	3,532	243,660	1,168	419,087	1,112	438,446	1,189
Italy	74,861	[3]	5,079	4,527	28,333	3,230	38,476	1,503
Norway	9,751	26	20,906	60	25,507	16	17,201	
Peru	[2]	[2]	9,388	[3]	9,361	18	15,432	
Philippine Islands	4,414		6,684		6,207		6,498	
Spain	553	641	429	1,197	3,877	797	[4] 5,939	[4] 460
Switzerland	21,976	105	13,086	1,102	15,922	40	13,170	69
Union of South Africa	8,249	30	775	474	1,378	184	1,863	140
United Kingdom	875,929	15,820	1,165,248	2,834	1,435,996	5,928	1,420,893	6,193
Other countries	47,140	4,835	71,307	14,868	73,547	11,329	67,706	24,394
Total	1,632,382	1,638,145	2,183,531	2,103,750	2,725,779	2,798,382	2,739,455	2,741,282

Division of Statistical and Historical Research. Official sources.

[1] Year beginning July 1. [2] Not separately stated. [3] Less than 500 pounds. [4] Six months.

TABLE 547.—*Pork: Exports from the United States, by months, 1910–1926*

[Thousand pounds—i. e., 000 omitted]

Year ended June 30—	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1910	65,364	68,289	60,183	55,362	62,726	65,638	75,401	66,675	60,599	34,227	42,229	50,415	707,108
1911	60,183	67,351	56,685	49,280	50,136	71,512	75,067	79,351	85,076	87,486	100,768	96,562	879,457
1912	83,514	82,387	107,082	79,551	77,114	97,067	93,601	102,591	104,742	85,895	92,609	65,800	1,071,953
1913	72,295	77,105	77,964	64,987	65,696	79,611	91,808	106,956	96,771	82,836	83,993	76,476	976,498
1914	81,962	82,726	73,628	77,309	79,717	86,597	101,683	73,958	70,046	60,785	66,067	67,436	921,912
1915	53,086	54,215	59,388	73,414	73,756	73,691	105,325	118,687	169,112	113,501	89,263	121,772	1,106,180
1916	95,029	90,128	100,207	113,464	107,744	143,262	135,292	162,376	149,983	153,534	148,245	112,360	1,511,535
1917	76,567	93,161	106,329	95,287	113,579	156,735	190,487	122,571	167,861	137,772	127,193	103,336	1,490,473
1918	45,502	71,295	79,460	54,037	99,189	90,338	92,864	114,347	308,011	285,763	281,337	162,305	1,691,441
1919	252,767	170,047	114,555	132,237	123,266	205,601	197,965	236,421	341,295	348,040	180,890	400,393	2,704,077
1920	240,961	179,503	117,762	117,943	131,663	144,799	137,438	147,133	185,348	87,591	134,208	137,330	1,761,679
1921	94,117	67,701	102,470	123,102	132,698	187,091	161,695	151,381	143,085	118,192	111,040	128,941	1,521,493
1922	171,555	174,916	173,989	99,186	90,240	106,449	127,613	138,047	124,411	90,125	99,440	119,855	1,515,826
1923	133,426	127,667	120,124	125,718	124,574	155,944	196,139	163,745	183,197	164,288	165,543	131,780	1,794,143
1924	141,665	162,948	170,631	158,195	158,908	188,695	224,658	190,690	178,420	137,570	114,758	109,335	1,935,474
1925	147,334	135,085	114,656	111,952	91,730	120,607	144,221	114,706	123,423	83,216	109,073	104,146	1,400,149
1926	89,975	83,226	100,152	81,321	76,418	115,241							

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States.

These figures include exports of fresh, canned, and pickled pork, cured hams and shoulders, bacon, lard, neutral lard, Wiltshire sides, and Cumberland sides.

TABLE 548.—*Bacon:*[1] *Exports from the United States, by months, 1910–1926*

[Thousand pounds—i. e., 000 omitted]

Year ended June 30—	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1910	18,112	15,061	15,535	13,422	16,585	14,978	16,343	11,474	10,755	6,342	5,528	8,028	152,163
1911	10,894	13,746	12,642	9,437	8,646	14,435	12,876	10,752	11,038	16,091	17,008	19,110	156,675
1912	17,006	18,857	25,088	16,368	15,864	18,104	18,152	16,954	17,468	17,934	16,270	10,559	208,574
1913	16,518	18,688	15,360	13,681	13,870	16,567	19,819	20,325	20,880	17,051	14,423	13,812	200,994
1914	16,555	19,551	16,358	17,968	16,688	19,367	20,814	17,518	13,618	12,603	11,618	11,306	193,964
1915	10,905	14,405	17,596	13,838	18,825	21,221	27,156	37,177	66,828	41,692	33,598	43,477	346,718
1916	38,503	37,579	43,371	53,410	45,876	55,472	59,087	63,810	41,892	53,443	58,343	38,023	579,809
1917	39,074	43,954	49,223	41,284	48,785	73,932	91,812	51,993	67,502	57,310	60,676	50,606	667,151
1918	19,462	28,311	35,501	29,363	43,571	42,021	53,851	50,904	155,604	127,400	142,012	87,294	815,294
1919	119,894	68,858	41,540	58,132	72,862	126,437	102,679	114,840	151,086	141,814	67,664	172,441	1,238,247
1920	117,679	84,151	57,209	56,462	65,288	58,985	77,501	75,891	75,003	24,356	50,413	60,731	803,667
1921	31,523	23,353	41,372	49,839	57,931	68,784	43,202	31,637	35,349	32,852	38,464	35,012	439,298
1922	48,172	45,340	44,719	23,001	15,642	24,366	26,168	30,794	31,180	20,490	19,070	24,067	350,549
1923	32,584	32,591	30,446	28,850	26,170	39,486	45,352	36,296	40,549	34,790	34,577	28,641	408,334
1924	27,582	33,004	45,161	46,689	39,027	47,131	46,014	43,771	34,002	29,533	16,942	14,645	423,500
1925	23,794	26,489	24,455	22,844	15,200	16,413	24,795	20,204	22,680	12,958	12,555	13,876	236,263
1926	14,155	14,429	17,665	15,411	14,660	18,188							

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States.

[1] Includes Cumberland sides.

TABLE 549.—*Lard: Exports from the United States, by months, 1910–1926*

[Thousand pounds—i. e., 000 omitted]

Year ended June 30—	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1910	28,639	33,906	26,263	27,287	27,529	34,619	39,686	38,878	32,574	17,213	26,418	29,976	362,928
1911	31,658	34,171	28,957	24,625	27,856	38,709	40,688	47,595	55,043	48,726	54,685	45,284	476,108
1912	35,446	34,912	53,670	43,003	40,829	52,548	45,465	54,143	54,797	40,179	44,900	32,364	532,256
1913	32,536	33,142	43,273	36,746	40,157	45,591	44,281	61,211	49,226	42,114	48,787	41,961	519,025
1914	39,567	41,025	37,383	34,466	42,661	48,497	56,432	35,916	38,001	29,890	35,101	37,519	481,458
1915	24,987	25,292	28,538	48,241	42,053	36,046	55,520	56,133	67,259	38,336	22,293	30,834	475,532
1916	24,555	25,146	28,774	28,256	30,776	46,404	34,040	41,262	37,146	39,017	48,773	45,862	427,011
1917	26,088	22,891	32,707	21,242	31,470	46,162	65,091	39,558	59,081	45,602	30,621	24,257	444,770
1918	9,364	23,553	22,145	9,639	30,742	13,069	20,706	31,683	68,721	53,885	79,751	29,248	392,506
1919	68,600	51,921	33,268	46,025	27,285	37,724	37,850	68,973	97,239	86,556	55,001	114,329	724,771
1920	98,192	49,033	36,960	41,017	42,106	63,646	38,824	36,645	69,430	40,758	55,544	45,070	587,225
1921	47,061	31,021	46,326	54,174	57,316	90,080	76,185	91,841	82,617	53,276	48,604	67,656	746,157
1922	83,329	87,411	104,741	56,886	51,854	64,542	73,194	75,520	64,377	42,459	50,817	57,249	812,379
1923	66,058	68,907	61,120	66,333	62,321	78,596	107,786	89,055	109,187	85,475	93,199	64,695	952,642
1924	69,479	83,758	83,630	76,378	74,251	98,578	132,758	99,910	100,726	73,307	62,648	59,475	1,014,898
1925	86,788	75,937	65,810	60,813	49,119	76,893	78,440	60,363	63,281	44,447	71,135	59,799	792,735
1926	49,414	45,740	62,646	44,745	39,979	68,840							

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States.

TABLE 550.—*Bacon:*[1] *Exports from the United States, by countries, 1910–1925*

[Thousand pounds—i. e., 000 omitted]

Year ended June 30—	Belgium	France	Italy	Netherlands	Norway	United Kingdom	Other Europe	Total Europe	Canada	Cuba	Other countries	Total
1910	2,206	23	1,605	1,065	330	133,995	956	140,180	1,838	7,046	3,099	152,163
1911	3,547	1,711	6,529	4,351	3,784	116,405	9,750	146,077	1,691	6,224	2,683	156,675
1912	4,503	9,418	8,156	7,271	4,560	147,449	15,598	196,955	3,342	4,823	3,454	208,574
1913	9,141	2,097	11,781	7,639	4,054	138,133	11,426	184,271	6,868	6,658	3,197	200,994
1914	5,110	197	9,732	1,718	5,459	132,820	11,881	166,917	11,083	13,734	2,230	193,964
1915	5,737	44,712	1,629	8,285	11,518	201,043	48,896	321,820	10,025	13,360	1,513	346,718
1916	60,161	52,501	10,532	12,846	22,387	339,341	26,611	524,379	39,591	13,543	2,296	579,809
1917	65,220	77,036	19,378	10,625	8,296	346,758	3,952	531,265	118,710	14,915	2,262	667,152
1918	68,670	73,532	74,460	-------	25	533,135	1,057	750,879	42,837	20,294	1,284	815,294
1919	109,591	220,391	80,552	22,477	18,182	657,048	93,630	1,201,871	26,186	9,154	1,036	1,238,247
1920	37,654	27,997	13,398	122,984	12,869	411,235	134,116	760,303	21,639	19,567	2,158	803,667
1921	29,448	5,369	14,991	43,421	6,684	244,716	104,912	449,538	12,718	25,302	1,740	489,298
1922	16,743	9,363	2,481	20,847	9,147	184,703	69,993	313,277	11,022	23,462	2,788	350,549
1923	23,215	7,758	9,259	30,972	12,269	188,274	99,009	370,756	9,925	24,830	2,823	408,334
1924	16,089	14,941	38,399	37,112	10,427	161,028	105,988	383,984	9,976	26,055	3,485	423,500
1925[2]	6,402	3,250	7,357	7,995	8,775	128,745	34,969	197,493	2,902	27,332	8,536	236,263

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1910–1918; Monthly Summary of Foreign Commerce of the United States, June issues, 1921–1925, and official records of the Bureau of Foreign and Domestic Commerce.

[1] Includes Cumberland sides. [2] Preliminary.

TABLE 551.—*Hams and shoulders:*[1] *Exports from the United States, by countries, 1910–1925*

[Thousand pounds—i. e., 000 omitted]

Year ended June 30—	Belgium	France	Netherlands	United Kingdom	Other Europe	Total Europe	Canada	Cuba	Mexico	Panama	Other countries	Total
1910	5,305	8	109	130,303	364	136,089	2,357	2,879	903	940	3,517	146,885
1911	9,092	26	226	135,433	720	145,497	2,918	3,876	640	1,103	3,675	157,709
1912	15,018	258	256	169,675	1,295	186,502	6,282	5,085	938	1,088	4,149	204,044
1913	5,822	316	131	134,017	560	140,846	6,785	6,002	782	1,029	4,101	159,545
1914	4,081	122	95	146,007	412	150,717	4,007	5,688	350	761	4,409	165,882
1915	6,596	609	1,689	179,377	2,839	191,110	1,515	6,842	249	623	3,362	203,701
1916	2,793	7,898	570	251,026	591	262,878	2,674	11,493	463	976	3,725	282,209
1917	-------	25,864	1	217,435	2,028	245,328	5,617	9,868	821	630	4,393	266,657
1918	-------	18,436	-------	372,723	842	392,001	14,287	9,980	465	221	2,608	419,572
1919	32,583	112,813	4,020	415,620	83,703	648,739	6,974	7,641	951	181	2,754	667,240
1920	6,489	29,870	6,112	182,563	25,146	250,180	5,669	14,185	833	332	4,257	275,456
1921	6,891	1,473	1,832	134,038	1,662	145,896	8,441	12,489	1,055	434	3,697	172,012
1922	9,690	894	196	233,566	2,438	246,784	10,604	9,071	890	473	3,760	271,642
1923	13,979	2,142	937	259,353	4,259	280,670	19,536	12,784	1,028	631	4,620	319,269
1924	21,185	4,587	3,799	307,771	5,920	343,262	16,779	14,219	1,063	984	5,227	381,564
1925[2]	13,400	1,113	2,223	241,150	3,040	260,926	8,174	15,743	1,098	861	5,412	292,214

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1910–1918; Monthly Summary of Foreign Commerce of the United States, June issues, 1921–1925, and official records of the Bureau of Foreign and Domestic Commerce.

[1] Includes Wiltshire sides. [2] Preliminary.

TABLE 552.—*Lard: Exports from the United States, by countries, 1910–1925*

[Thousand pounds—i. e., 000 omitted]

Year ended June 30—	Belgium	Denmark	Germany	Italy	Netherlands	United Kingdom	Other Europe	Total Europe	Canada	Cuba	Other countries	Total
1910	9,060	4,503	93,393	2,263	23,758	161,331	3,742	298,050	9,310	33,239	22,329	362,928
1911	19,900	1,496	151,620	5,781	33,221	165,412	25,083	402,513	6,556	34,969	32,070	476,108
1912	21,744	3,130	159,474	3,171	38,675	186,125	32,764	445,083	7,968	42,549	36,656	532,256
1913	18,762	1,812	160,862	6,106	43,384	168,380	21,178	420,484	11,080	46,526	40,935	519,025
1914	15,915	1,464	146,209	5,959	43,470	164,633	8,067	385,717	15,996	49,610	30,135	481,458
1915	5,129	72,057	3,878	4,123	22,245	189,350	98,640	395,422	7,722	45,349	27,039	475,532
1916	70,132	2,874	.....	3,488	13,282	192,076	48,903	330,755	6,330	53,812	36,114	427,011
1917	96,761	841	.....	4,982	20,446	178,111	57,559	358,700	5,376	48,733	31,961	444,770
1918	116,154	75	.....	2,137	.....	159,959	46,471	324,796	894	52,574	14,242	392,506
1919	190,770	22,256	9,579	1	17,683	286,451	145,016	671,756	3,565	25,572	23,878	724,771
1920	55,970	13,528	49,733	16,502	78,354	165,374	160,058	479,519	11,618	68,734	27,354	587,225
1921	57,963	9,527	231,528	14,172	113,868	169,464	36,415	632,937	12,226	59,939	41,055	746,157
1922	43,591	6,923	260,716	9,051	42,831	244,465	59,300	666,877	8,852	73,926	62,724	812,379
1923	50,472	5,700	328,112	29,571	47,802	241,144	53,396	756,197	14,318	87,898	94,229	952,642
1924	40,634	7,365	329,793	77,210	71,570	240,017	57,829	824,418	15,231	92,083	83,166	1,014,898
1925[1]	22,538	4,692	251,983	41,145	50,369	223,011	30,137	623,875	9,811	86,480	72,569	792,735

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1910–1918; Monthly Summary of Foreign Commerce of the United States, June issues, 1921–1925, and official records of the Bureau of Foreign and Domestic Commerce.

[1] Preliminary.

TABLE 553.—*Lard, pure: Average price per 100 pounds, Chicago, by months, 1905–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Dolls.	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
1905	6.73	6.74	6.92	7.12	7.18	7.20	7.09	7.70	7.51	7.12	7.08	7.51	7.16
1906	7.44	7.55	8.03	8.59	8.49	8.74	8.93	8.66	7.79	9.33	9.36	8.75	8.47
1907	9.29	9.70	9.03	8.68	8.95	8.69	8.91	8.89	8.98	8.86	8.16	7.98	8.84
1908	7.70	7.21	7.67	8.19	8.42	8.66	9.30	9.33	9.94	9.62	9.31	9.23	8.72
1909	9.57	9.52	10.05	10.32	10.60	11.54	11.52	11.66	12.23	12.17	12.93	13.12	11.27
1910	12.43	12.50	14.08	12.33	12.95	12.27	11.85	11.82	12.44	12.93	10.82	10.31	12.23
1911	10.32	9.50	8.83	7.93	8.03	8.17	8.30	8.97	9.32	8.85	9.07	9.00	8.86
1912	9.24	8.90	9.37	10.06	10.77	10.87	10.57	10.73	11.08	11.47	11.15	10.46	10.39
1913	9.88	10.50	10.66	11.00	11.05	10.99	11.53	11.28	11.15	10.60	10.63	10.68	10.83
Av. 1909–1913	10.29	10.18	10.60	10.33	10.68	10.77	10.75	10.89	11.24	11.20	10.92	10.71	10.72
1914	10.89	10.67	10.52	10.23	9.95	10.03	10.08	9.69	9.68	10.22	10.89	10.05	10.24
1915	10.69	10.53	9.84	9.95	9.71	9.39	8.05	7.92	8.13	9.07	8.94	9.47	9.31
1916	10.32	9.99	10.79	11.77	12.80	12.87	13.12	13.44	14.47	15.34	16.91	16.66	13.21
1917	15.66	17.00	19.30	21.00	22.30	21.41	20.77	22.40	24.03	24.29	27.13	25.46	21.73
1918	24.39	26.05	26.07	25.44	24.53	24.50	26.09	26.78	26.98	26.66	26.69	25.31	25.79
1919	23.46	24.83	27.35	30.09	33.58	34.15	34.76	30.01	26.19	27.41	25.86	23.11	28.40
1920	23.52	23.14	22.93	22.71	22.75	22.98	21.71	21.16	22.58	23.28	22.07	18.15	22.25
Av. 1914–1920	16.99	17.46	18.11	18.74	19.37	19.33	19.23	18.77	18.87	19.47	19.78	18.32	18.70
1921	16.03	14.91	14.48	13.07	11.88	12.03	13.94	13.65	13.51	12.16	11.62	11.25	13.21
1922	11.19	12.59	13.50	12.62	13.15	13.22	13.06	13.30	13.00	14.12	13.78	13.31	13.07
1923	13.20	13.25	13.87	13.42	13.12	13.18	12.84	12.83	15.06	15.22	15.72	15.04	13.90
1924	14.52	13.03	12.84	12.50	12.19	12.13	13.65	15.94	16.25	18.05	16.68	18.00	14.65
1925	17.59	17.03	18.25	17.07	16.50	18.13	18.42	18.94	18.95	18.75	18.50	16.67	17.90
Av. 1921–1925	14.51	14.16	14.59	13.74	13.37	13.74	14.38	14.93	15.35	15.66	15.26	14.85	14.55

Division of Statistical and Historical Research. Prior to February, 1920, figures compiled from the National Provisioner; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 554.—*Pork, carcass: Average prices per pound in Great Britain, 1909–1925*

FIRST QUALITY FRESH BRITISH PORK

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	12.8	12.8	12.9	13.0	12.7	12.9	13.2	13.2	13.5	14.2	14.8	15.2	13.5
1910	15.1	15.0	15.0	14.8	14.7	14.1	13.9	14.6	15.0	15.4	15.3	14.9	14.8
1911	14.5	14.2	14.2	14.0	13.2	14.6	12.2	12.2	12.7	13.2	12.8	12.5	13.2
1912	12.7	12.7	12.8	12.8	12.5	12.6	12.8	13.0	14.4	15.1	15.1	15.7	13.5
1913	16.1	16.3	16.3	16.1	15.8	15.5	15.5	15.6	16.0	16.4	16.7	17.1	16.1
Av. 1909–1913	14.2	14.2	14.2	14.1	13.8	13.9	13.5	13.7	14.3	14.9	14.9	15.1	14.2
1914	16.8	16.2	16.2	15.8	14.5	13.9	13.3	14.5	15.1	16.5	16.4	16.3	15.5
1915	15.8	15.9	16.4	17.2	17.0	16.8	16.7	16.9	18.8	20.0	21.4	21.1	17.9
1916	20.1	21.6	21.6	23.6	21.9	21.7	21.7	21.7	23.8	25.4	25.0	26.1	22.8
1917	26.9	27.2	27.7	28.2	26.4	27.2	28.6	25.5	29.1	28.2	28.2	28.2	27.6
1918	28.2	28.2	28.2	31.8	31.8	31.7	31.7	31.8	31.8	34.2	35.7	35.7	31.7
1919	32.1	31.8	31.2	31.0	31.1	30.8	29.5	28.5	27.9	27.8	27.2	26.3	29.6
1920	26.8	[1]31.0	[1]36.0	41.0	37.2	36.1	37.6	35.4	36.3	36.4	34.9	34.2	35.2
Av. 1914–1920	23.8	24.6	25.3	25.9	25.7	25.5	25.6	24.9	26.1	26.9	27.0	26.9	25.8
1921	32.5	29.7	29.7	30.5	29.0	24.9	22.9	23.5	24.5	22.8	22.5	23.2	26.3
1922	22.5	23.9	24.4	25.3	25.0	23.0	23.9	24.7	26.6	27.3	28.5	30.3	24.5
1923	29.6	28.0	27.0	26.8	50.7	24.5	20.7	20.4	22.4	23.9	22.3	21.5	24.7
1924	20.4	19.2	18.5	19.2	18.1	16.6	14.1	18.1	19.0	20.2	20.5	21.0	18.7
1925	23.0	22.0	22.9	23.6	22.3	20.4	20.6	21.4	24.8	26.5	27.3	28.9	23.6
Av. 1921–1925	25.6	24.6	24.5	25.1	25.0	21.9	20.4	21.6	23.5	24.0	24.8	25.6	23.6

FIRST QUALITY FROZEN PORK [2]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
1909	12.7	11.7	11.9	12.0	11.9	12.1	12.6	12.7	13.5	14.5	14.7	13.4	12.8
1910	14.5	14.0	14.9	15.2	14.7	14.2	14.2	14.3	14.7	14.9	14.5	14.2	14.6
1911	13.7	13.2	14.0	13.6	12.5	11.4	11.2	11.3	12.4	11.9	11.9	12.1	12.4
1912	11.7	12.2	12.5	13.2	12.9	13.2	13.4	13.0	13.4	14.7	14.3	15.1	13.5
1913	15.0	15.4	15.8	15.3	15.0	15.0	14.6	14.8	14.9	14.5	14.2	14.5	14.9
Av. 1909–1913	13.5	13.3	13.8	13.9	13.4	13.2	13.2	13.2	14.2	14.1	14.0	13.9	13.6
1914	15.1	14.3	14.5	14.1	13.6	13.3	11.8	13.5	12.8	14.8	14.6	14.9	13.9
1915	15.0	15.8	16.7										
1916	15.8	16.3	16.6	18.6	17.6	18.4	17.9	18.1	19.8	21.0	20.2	20.6	18.4
1917	20.5	21.6	21.8	22.2	21.4	20.8	22.1	23.7	25.2	25.2	25.2	25.2	22.9
1918	[1]25.2	25.2	26.9	31.8	31.8	31.7	31.7	31.8	[1]31.8	35.7	[1]35.7	[1]35.7	31.3
1919	32.1	31.8	[1]31.2	31.0	[1]31.1	[1]30.8	26.3	[1]25.3	24.8	24.8	24.2	22.4	28.0
1920	21.8	20.0	23.4	23.2	22.8	23.4	24.3	25.0	28.8	28.7	28.4	27.3	24.6
1921	24.2	24.3	20.2	20.0	19.6	18.2	[1]17.2	[1]16.2	16.2	16.2	14.4	13.8	18.1
1922	13.4	13.7	13.7	13.8	13.9	13.9	16.7	16.8	18.4	[1]18.8	19.2	19.5	16.0
1923	18.1	16.1	14.7	15.2	14.3	14.7	15.6	15.1	14.8	15.7	16.2	15.2	15.5
1924	14.4	14.5	13.3	13.6	13.6	13.3	[3]	[3]	[3]	[3]	[3]	[3]	
1925	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	

Division of Statistical and Historical Research. Compiled from Agricultural Statistics 1909–1922, and Agricultural Market Report, 1923–1924 and 1925, Ministry of Agriculture and Fisheries, Great Britain. Converted to cents per pound on the basis of the monthly average rate of exchange as given in Federal Reserve Bulletins.

[1] Interpolated. [2] Designated "Foreign" prior to 1917. [3] No quotations.

TABLE 555.—*Hams: Price per pound in Liverpool, 1909–1925*

AMERICAN, SHORT CUT, GREEN, FIRSTS [1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	11.2	10.8	11.3	12.4	12.7	12.9	12.7	14.0	12.9	13.9	14.8	14.1	12.8
1910	14.9	14.9	16.6	15.7	17.0	17.5	17.3	16.0	16.0	14.7	15.5	14.9	15.9
1911	14.2	12.6	12.6	12.4	13.3	15.9	16.1	16.7	13.3	12.4	12.8	12.0	13.7
1912	12.5	11.6	12.7	13.8	14.0	12.9	14.3	14.3	14.3	15.2	15.2	15.4	13.8
1913	15.5	15.3	15.7	16.0	17.0	17.7	18.6	17.5	16.0	15.3	15.3	15.2	16.3
Av. 1909–1913	13.7	13.0	13.8	14.1	14.8	15.4	15.8	15.7	14.5	14.3	14.7	14.3	14.5
1914	15.2	14.4	15.1	14.9	14.5	16.2	16.5	18.3	17.2	15.6	16.3	16.1	15.9
1915	15.8	14.2	13.7	13.5	15.4	15.6	14.9	15.1	16.1	17.3	19.2	21.1	16.0
1916	20.1	18.1	19.4	19.8	19.4	19.5	20.4	22.5	22.5	22.9	22.3	21.2	20.7
1917	24.0	27.4	27.6	28.2	28.9	27.4	28.2	29.1	29.1	29.1	34.4	35.4	29.1
1918	35.4	35.4	35.4	35.5	35.5	35.4	37.9	37.9	37.9	37.9	37.9	37.9	36.7
1919	37.9	37.9	37.5	37.6	37.8	39.3	38.1	36.8	36.4	36.3	37.5	32.8	37.2
1920	31.9	29.4	31.1	34.1	32.5	33.3	38.1	35.8	34.9	34.5	34.3	35.0	33.8
Av. 1914–1920	25.8	25.3	25.7	26.2	26.3	26.7	27.7	27.9	27.7	27.7	28.8	28.5	27.0
1921	30.2	31.2	31.5	27.6	23.1	28.6	34.9	30.0	21.1	20.4	25.7	24.1	27.3
1922	24.5	26.5	25.4	26.0	28.4	29.4	27.8	23.3	20.4	21.0	21.6	20.2	24.5
1923	19.9	18.9	19.1	18.7	19.4	20.7	24.1	22.2	20.3	20.5	22.1	19.5	20.4
1924	18.9	17.9	16.8	16.8	17.7	18.0	19.9	20.7	18.8	21.9	22.7	23.1	19.4
1925	24.8	21.6	22.8	23.9	23.2	26.2	27.7	28.0	27.7	28.4	28.6	29.1	26.0
Av. 1921–1925	23.7	23.2	23.1	22.5	22.4	24.6	26.9	24.8	21.7	22.4	24.1	23.2	23.5

AMERICAN, LONG CUT, GREEN, FIRSTS [1]

1909	10.5	10.3	11.4	12.4	13.1	13.8	13.6	14.9	14.2	15.1	14.4	14.4	13.2
1910	14.5	14.9	17.7	17.0	17.7	18.6	18.3	17.0	17.3	17.6	16.1	14.3	16.8
1911	14.1	12.6	12.6	12.7	13.9	15.9	15.9	16.7	13.3	13.5	13.3	12.0	13.9
1912	11.6	11.6	12.3	13.6	14.7	14.0	13.9	13.9	14.1	15.2	14.9	15.1	13.8
1913	15.5	15.7	16.6	16.8	18.1	18.6	18.8	18.1	16.4	15.2	15.2	14.8	16.6
Av. 1909–1913	13.2	13.0	14.2	14.5	15.5	16.2	16.1	16.1	15.1	15.3	14.8	14.1	14.9
1914	14.8	14.5	15.1	15.1	15.0	16.5	16.9	18.5	16.9	15.6	16.9	16.1	16.6
1915	13.6	14.2	13.9	13.7	16.0	16.6	15.7	15.1	16.1	18.4	19.6	20.7	16.3
1916	19.1	18.1	18.6	19.4	18.8	19.1	19.8	22.3	22.9	23.8	24.4	22.0	20.7
1917	23.7	25.9	27.2	27.8	28.7	26.7	28.2	29.1	29.1	29.1	35.0	36.1	28.8
1918	36.1	36.1	36.1	36.1	36.1	36.1	37.9	37.9	37.9	37.9	37.9	37.9	37.0
1919	37.9	37.9	37.5	38.0	38.2	39.5	38.1	36.8	36.4	36.3	37.5	32.8	37.2
1920	31.9	29.4	31.1	34.1	32.5	33.3	38.1	35.8	34.9	34.5	34.3	35.0	33.7
Av. 1914–1920	25.4	25.2	25.6	26.3	26.5	26.8	27.8	27.9	27.7	27.9	29.4	28.7	27.1
1921	31.1	32.1	32.1	27.0	22.6	28.3	34.9	31.0	23.3	20.7	23.0	21.5	27.4
1922	21.1	25.3	25.4	27.2	[2]30.2	[2]30.8	28.0	23.7	20.2	20.0	20.4	19.6	24.3
1923	19.1	18.9	19.3	[2]21.9	21.1	21.4	22.6	22.6	21.9	20.8	22.7	18.5	20.9
1924	17.4	16.2	15.7	15.7	15.8	16.8	18.7	------	19.6	20.4	------	23.6	------
1925	22.2	20.8	21.8	23.3	23.2	25.3	27.8	28.0	27.9	------	------	26.6	------
Av. 1921–1925	22.2	22.7	22.9	23.0	22.6	24.5	26.4	------	22.6	------	------	22.0	------

Division of Statistical and Historical Research. Compiled from Return of Market Prices, Great Britain Ministry of Agriculture and Fisheries. Average for the last week of the month 1909–1925; subsequently monthly average of weekly quotations. Converted to cents per pound on the basis of the monthly average rate of exchange as given in Federal Reserve Bulletins.

[1] Short cut, regular American commercial ham; long cut, longer both in the butt and shank. Green, cured in pickle or salt but not smoked.

[2] Average of London and Bristol prices, and closely approximates Liverpool price.

TABLE 556.—*Bacon, Wiltshire sides,[1] green, firsts: Average price per pound at Bristol, England, 1909–1925*

Year and month	American	Canadian	Danish	Irish	British	Year and month	American	Canadian	Danish	Irish	British
	Cents	*Cents*	*Cents*	*Cents*	*Cents*		*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
Av. 1909-1913	14.2	14.8	15.6	16.1	17.0	1917	50.1	------	------	33.0	33.6
1909	13.6	14.3	15.0	15.9	16.7	1918	38.5	------	------	------	30.3
1910	15.2	15.6	15.9	16.6	17.8	1919	37.1	37.9	------	38.4	38.4
1911	12.8	13.1	14.3	14.8	15.8	1920	31.6	33.1	34.2	41.7	42.8
1912	13.8	14.5	15.9	15.8	16.3	1921	21.8	26.5	32.8	34.7	36.2
1913	15.8	16.3	17.1	17.4	18.4	1922	21.2	25.2	29.7	32.5	33.3
1914	15.5	15.7	16.4	17.6	18.2	1923	17.5	20.9	23.6	25.8	27.0
1915	17.0	18.4	20.4	20.8	21.4	1924	16.6	19.2	21.3	22.8	23.5
1916	19.8	22.0	24.0	24.7	26.0	1925	23.0	24.7	27.5	29.7	30.0
1924						1925					
January	14.2	17.6	19.6	22.1	23.2	January	19.5	21.9	25.7	26.9	27.0
February	13.6	17.5	19.0	21.2	22.9	February	18.5	21.2	24.7	27.3	27.5
March	13.7	17.6	18.8	19.9	21.4	March	21.1	22.7	25.5	28.6	29.4
April	13.6	17.6	18.6	21.1	22.0	April	22.0	23.5	26.8	29.4	29.9
May	13.4	17.7	19.5	22.4	22.9	May	21.3	23.2	26.5	29.3	29.5
June	13.9	18.0	21.0	22.9	23.4	June	23.6	25.1	26.7	30.2	29.9
July	15.1	18.6	21.8	22.2	23.1	July	24.1	24.3	26.5	29.0	29.4
August	19.7	20.1	23.5	24.2	24.7	August	26.4	28.1	29.6	30.9	31.6
September	19.2	19.8	22.2	23.4	24.2	September	26.6	27.5	30.0	32.7	32.9
October	21.9	22.5	23.8	24.2	24.3	October	24.9	25.9	29.8	31.2	31.2
November	21.4	22.1	23.9	24.4	24.5	November	24.2	25.7	28.2	29.8	30.2
December	19.9	21.7	24.1	25.2	25.6	December	25.7	27.4	30.0	31.3	32.4

Division of Statistical and Historical Research. Compiled from Agricultural Market Report, Ministry of Agriculture and Fisheries, Great Britain, average for the last week of each month. Converted to cents per pound on the basis of the monthly average rate of exchange as given in Federal Reserve Bulletins.

[1]Entire half of hog in one piece, head off, backbone out, ribs in.

TABLE 557.—*Lard, American prime western steam: Average price per pound in Liverpool, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average.
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	10.7	10.6	11.2	11.4	11.8	12.7	12.8	12.8	13.4	13.6	14.7	11.9	12.6
1910	14.1	14.0	15.5	14.8	14.5	13.7	13.3	13.1	13.6	13.8	12.7	11.5	13.7
1911	11.5	11.4	10.0	9.1	9.2	9.1	9.1	9.9	10.4	9.9	10.2	10.1	10.0
1912	10.2	10.0	10.2	10.9	11.4	11.6	11.4	11.8	12.4	13.0	12.6	11.9	11.4
1913	11.2	11.8	12.2	12.4	12.3	12.2	12.7	12.7	12.6	12.1	12.2	12.1	12.2
Av. 1909-1913	11.5	11.6	11.8	11.7	11.8	11.9	11.9	12.1	12.5	12.5	12.5	12.1	12.0
1914	12.3	11.8	11.5	11.3	10.8	10.9	11.0	12.6	11.4	11.3	12.2	11.7	11.6
1915	12.0	11.6	11.1	11.2	11.1	10.6	9.3	8.3	8.9	10.2	10.8	11.7	10.6
1916	12.7	12.4	13.8	15.4	16.5	15.7	15.4	15.7	17.3	18.3	20.3	20.1	16.1
1917	20.4	[1]24.8	29.3	27.7	26.3	23.8	23.8	25.0	[2]25.9	[1]27.1	28.2	28.6	25.9
1918	28.6	------	------	------	31.7	31.7	------	------	33.2	33.0	------	------	------
1919	------	------	------	------	------	38.1	37.1	36.3	36.5	36.8	35.6	32.9	------
1920	32.0	29.5	32.9	27.2	------	27.4	26.7	------	------	------	23.8	24.2	------
1921	23.4	[2]23.3	15.7	13.2	11.7	12.1	13.6	13.4	13.2	12.2	12.6	11.7	14.7
1922	11.3	12.9	13.1	12.8	13.6	13.5	13.2	13.3	12.7	13.2	14.1	13.6	13.1
1923	13.3	13.0	13.7	13.6	12.9	13.0	12.7	12.7	14.0	14.5	15.7	15.1	13.7
1924	14.8	13.1	13.2	12.7	12.3	12.2	13.7	15.8	15.8	18.1	17.2	18.1	14.8
1925	18.0	17.5	18.7	17.8	17.6	19.1	19.3	19.2	19.2	17.9	17.8	16.6	18.2
Av. 1921-1925	16.2	16.0	14.9	14.0	13.6	14.0	14.5	14.9	15.0	15.2	15.5	15.0	14.9

Division of Statistical and Historical Research. Compiled from Manchester Guardian. An average of Friday quotations. Converted to cents per pound on the basis of the monthly average rate of exchange as given in Federal Reserve Bulletins.

[1]Interpolated. [2] Government control of prices began Sept. 3, 1917, and ended on Feb. 28, 1921.

HOG-CHOLERA CONTROL

TABLE 558.—*Hogs: Cholera-control work by Bureau of Animal Industry, 1919–1925*

Year ended June 30, and State	Bureau veterinarians engaged in work [1]	Premises investigated	Demonstrations		Autopsies performed	Farms quarantined or carded	Farms cleaned and disinfected	Outbreaks reported to bureau veterinarians
			Number	Hogs treated				
1919	180	93,512		233,987	53,586	9,564	4,382	12,336
1920	140	46,125	3,037	347,702	10,963	6,129	2,099	9,788
1921	54	29,433	3,420	67,295	3,888	2,268	656	7,951
1922	80	47,137	4,343	88,846	5,390	1,401	439	7,920
1923	70.91	52,348	5,234	108,562	5,247	1,772	741	7,204
1924	45.22	29,443	3,178	78,007	3,686	1,634	847	7,225
1925								
Alabama	2	1,562	502	8,188	75			224
Arkansas	.67	271	32	1,199	13			94
California	.5	93	7	376	36			34
Colorado	.15	36			17			
Delaware	.75	505	81	896	110		60	60
Florida	1.5	870	691	17,092	113		46	269
Georgia	1.5	1,882	181	3,334	62		2	150
Idaho	1	820	13	550	44	14	13	27
Illinois	1.75	1,287	3	99	256	225	248	405
Indiana	2	986	15	474	186	41	4	85
Iowa	2	740	5	379	79		2	156
Kansas	.15	25	2	46	52			32
Kentucky	1.7	2,455	54	1,447	193		13	86
Louisiana	.15	102	6	425				8
Maryland	2	2,992	27	268	236	285	3	503
Michigan	2	1,222	77	3,653	154	30	1	168
Mississippi	1	852	56	1,049	6			55
Missouri	1	1,636	3	29	77	5	1	261
Montana	.03	66			12	8	2	14
Nebraska	.15	78			80			13
North Carolina	.75	391	35	274	16			10
North Dakota	.75	217			47	171	63	171
Ohio	1.5	1,155			46			73
Oklahoma	2	1,503	27	1,140	53	24		28
South Carolina	1	396	378	6,566	35			83
South Dakota	.75	153	2	231	51			63
Tennessee	1	224	11	305	41	29		132
Texas	1.5	512	7	154	10	3		39
Virginia	.75	400	68	1,634	121		4	128
Washington	.54	74	2	58	17	8	1	20
Wisconsin	1.5	555	68	1,465	145	43	7	46
Total	34.04	24,060	2,353	51,331	2,383	886	470	3,437

Bureau of Animal Industry.

NOTE.—Owing to the emergency created by the outbreak of foot-and-mouth disease in Texas and California, it was necessary to assign many of the veterinarians from the hog-cholera force to the eradication of foot-and-mouth disease for a part of the year.

[1] Fractions denote veterinarians devoting a part of their time to the work.

SHEEP

TABLE 559.—*Sheep: Number and value on farms, United States, January 1, 1910–1926*

Jan. 1	Number	Price per head Jan. 1	Farm value Jan. 1	Jan. 1	Number	Price per head Jan. 1	Farm value Jan. 1
	Thousands	*Dollars*	*Thousand dollars*		*Thousands*	*Dollars*	*Thousand dollars*
1910, Apr. 15	*52,448*	4.12	216,030	1920	39,025	10.47	408,586
1911	53,633	3.91	209,535				
1912	52,362	3.46	181,170	Av. 1914–1920	47,487	7.72	366,754
1913	51,482	3.94	202,779				
1914	49,719	4.02	200,045	1921	37,452	6.30	235,855
1915	49,956	4.50	224,687	1922	36,327	4.80	174,545
1916	48,625	5.17	251,594	1923	37,223	7.51	279,464
1917	47,616	7.13	339,529	1924	38,300	7.87	301,455
1918	48,603	11.82	574,575	1925	39,390	9.63	379,302
1919	48,866	11.63	568,265	1926 [1]	40,748	10.50	427,647

Division of Crop and Livestock Estimates. Figures in italics are census returns.

[1] Preliminary.

TABLE 560.—*Sheep, including lambs: Number and value on farms, January 1, 1925 and 1926*

State	Number, Jan. 1—		Average value per head Jan. 1—		Farm value, Jan. 1—	
	1925	1926 [1]	1925	1926	1925	1926 [1]
	Thousands	*Thousands*	*Dollars*	*Dollars*	*Thous.dolls.*	*Thous.dolls.*
Maine	89	96	7.60	8.00	676	768
New Hampshire	16	17	8.90	8.60	142	146
Vermont	44	45	9.00	8.90	396	400
Massachusetts	14	12	8.90	9.40	125	113
Rhode Island	3	3	9.30	9.00	28	27
Connecticut	8	8	8.80	9.40	70	75
New York	570	599	10.70	11.60	6,099	6,948
New Jersey	8	9	9.20	10.50	74	94
Pennsylvania	492	507	8.90	9.70	4,379	4,918
Ohio	2,178	2,222	8.90	9.50	19,384	21,109
Indiana	650	689	10.60	11.60	6,890	7,992
Illinois	694	722	10.40	11.50	7,218	8,303
Michigan	1,194	1,254	11.20	11.90	13,313	14,923
Wisconsin	351	368	10.30	11.00	3,615	4,048
Minnesota	462	499	11.60	11.20	5,359	5,589
Iowa	891	891	11.20	11.80	9,988	10,514
Missouri	1,018	1,038	9.40	10.00	9,569	10,380
North Dakota	313	360	9.80	11.20	3,067	4,032
South Dakota	680	700	10.60	10.80	7,181	7,560
Nebraska	840	775	10.50	10.90	8,837	8,448
Kansas	376	432	9.10	10.00	3,425	4,320
Delaware	2	2	9.30	9.30	19	19
Maryland	93	96	9.50	10.50	884	1,008
Virginia	373	373	8.90	10.10	3,320	3,767
West Virginia	514	446	7.60	9.40	3,906	4,192
North Carolina	90	82	6.20	6.70	558	549
South Carolina	15	14	4.30	4.00	64	56
Georgia	60	60	3.40	3.20	204	192
Florida	60	57	3.30	3.00	198	171
Kentucky	715	751	8.90	10.10	6,364	7,585
Tennessee	319	313	5.90	7.40	1,882	2,316
Alabama	60	51	4.30	4.00	258	204
Mississippi	128	122	2.80	3.00	358	366
Arkansas	80	76	3.80	4.80	304	365
Louisiana	108	105	3.20	3.00	346	315
Oklahoma	70	77	7.20	9.00	504	693
Texas	3,465	3,465	7.40	7.90	25,641	27,374
Montana	2,579	2,837	10.40	11.40	26,822	32,342
Idaho	2,291	2,337	10.80	11.80	24,766	27,577
Wyoming	2,808	3,032	10.80	11.70	30,326	35,474
Colorado	2,616	2,459	10.20	10.60	26,631	26,065
New Mexico	2,360	2,502	8.40	9.40	19,848	23,519
Arizona	1,155	1,211	7.80	9.00	9,009	10,899
Utah	2,248	2,405	11.00	11.70	24,706	28,138
Nevada	1,108	1,163	10.80	11.60	12,011	13,491
Washington	549	576	10.90	11.70	6,001	6,739
Oregon	2,012	2,112	10.20	11.40	20,502	24,077
California	2,621	2,778	9.20	10.60	24,035	29,447
United States	39,390	40,748	9.63	10.50	379,302	427,647

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 561.—*Sheep: Numbers in countries having 100,000 and over, pre-war and years 1921–1926*

[Thousands—i. e., 000 omitted]

Country	Month of estimate	Average-pre-war [1]	1921 [2]	1922	1923	1924	1925	1926
NORTH AND CENTRAL AMERICA								
Canada	June	2,208	3,676	3,264	2,754	2,685	2,756	----
United States [3]	----	51,929	37,452	36,327	37,223	38,300	39,390	40,748
Mexico	June	[3] *3,424*	----	----	1,382	1,728	----	----
Guatemala	----	514	105	185	133	----	----	----
SOUTH AMERICA								
Colombia	----	[4] 246	----	----	----	----	----	----
Venezuela	----	177	113	----	----	----	----	----
Peru	----	----	----	11,056	*11,034*	----	----	----
Bolivia	----	1,449	----	----	----	----	----	----
Chile	----	3,477	----	4,569	----	----	----	----
Brazil	September	10,550	[5] *7,933*	----	----	----	----	----
Uruguay	----	[6] *26,286*	[4] *11,473*	----	----	*14,443*	----	----
Paraguay	December	[7] 600	----	----	----	----	----	----
Argentina	do	[8] *43,225*	45,996	46,134	*36,209*	----	----	----
Falkland Islands	----	711	668	666	647	635	----	----
EUROPE								
Iceland	----	589	554	571	550	----	----	----
England and Wales	June	18,346	13,832	13,438	13,836	14,843	15,975	----
Scotland	do	7,028	6,659	6,684	6,786	6,886	7,053	----
Ireland	do	3,787	3,708	3,567	3,458	3,235	3,267	----
Norway [9]	do	[10] 1,398	957	----	1,525	1,507	1,529	----
Sweden	do	1,205	[5] 1,568	----	----	----	----	----
Denmark	July	533	522	442	374	302	265	----
Holland	May–June	842	668	----	----	----	----	----
Belgium	December	189	----	----	----	----	----	----
France	do	16,176	9,506	9,600	9,782	9,925	10,172	10,537
Spain	do	15,778	----	20,522	19,377	18,550	18,460	----
Portugal	----	[11] *3,073*	[5] *3,851*	----	----	----	----	----
Italy	March–April	11,615	[12,13] 12,029	----	----	----	----	----
Switzerland	April	*161*	*244*	----	----	----	----	----
Germany	December	4,988	6,150	5,891	5,566	[14] 6,105	5,735	4,742
Austria	do	301	454	----	*597*	----	----	----
Czechoslovakia	do	1,322	986	----	----	[15] 1,426	----	----
Hungary	April	2,406	----	1,352	1,587	1,814	1,891	----
Yugoslavia	January	10,496	*7,011*	7,821	7,542	7,639	----	----
Greece	----	5,834	5,789	----	----	----	----	----
Bulgaria	December	8,551	*8,923*	----	----	----	7,450	----
Rumania	----	11,128	11,119	12,321	12,481	13,612	----	----
Poland	----	4,268	2,306	----	----	2,500	----	----
Lithuania	----	1,152	1,073	1,228	1,413	1,399	----	----
Latvia	June	996	1,132	1,161	1,488	1,235	1,182	----
Esthonia	----	486	531	745	666	607	----	----
Finland	September	1,330	1,572	1,571	1,550	1,485	----	----
Russia [16]	Summer	43,154	41,033	33,060	47,371	56,191	63,493	----

[1] Average for 5-year period immediately preceding war if available, otherwise for any year within this period except as otherwise stated. In countries having changed boundaries the figures are estimates for one year only of numbers within present boundaries.

[2] Revised estimates of the Division of Crop and Livestock Estimates 1921–1926. These figures are made on the basis of census figures of 1920 and 1925, of annual assessment data and other information. The estimates prepared in the Bureau of Animal Industry by adjustment of the census figures to a January 1 basis and including all animals in towns and villages as well as on farms and ranges are as follows: Average, 58,900; 1921, 67,200; 1922, 67,700; 1923, 68,900; 1924, 68,200; and 1925, 66,600.

[3] Year 1902.

[4] Year 1916.

[5] Year 1920.

[6] Year 1908.

[7] Year 1915.

[8] June 1914.

[9] Numbers in rural communities only.

[10] September.

[11] Year 1906.

[12] Year 1918.

[13] Estimated for present boundaries. The number in former boundaries on Apr. 6, 1918, was 11,753,910.

[14] No census was made as of December, 1923, which estimate would have been considered as of January, 1924, in this table as explained in the general note, so the figure for October, 1923, has been used.

[15] Unofficial.

[16] Goats included.

TABLE 561.—*Sheep: Numbers in countries having 100,000 and over, pre-war and years 1921–1926*—Continued

[Thousands—i. e., 000 omitted]

Country	Month of estimate	Average-pre-war [1]	1921	1922	1923	1924	1925	1926
AFRICA								
Morocco		[7] 3,175	6,733	6,319	7,121	8,215		
Algeria	September	8,757	6,333	6,025	5,397			
Libia (Italian)		996						
Tunis		705	2,038	1,920	1,451	1,379		
French West Africa (excluding Sudan)			3,802	3,681				
French Sudan			2,164	2,030	2,324			
Gold Coast [16]		250	*352*					
Nigeria			1,909	1,832	1,683			
French Cameroon [16]				298	250			
Egypt	September		986	942	962	1,085		
Anglo-Egyptian Sudan			1,660	1,619	1,632	1,638		
Italian Somaliland			[5] 1,666					
Eritrea (Italian)		[16] 1,585	[5] *1,268*	[16] 1,701				
Kenya Colony	March–June	5,469	2,741	2,464	2,547	2,510		
Uganda		612	222	267	304	531		
French Equatorial Africa [16]			1,073	1,126				
Belgian Congo		300	300	300	300			
British Southwest Africa		555	927	1,033	937	1,009		
Bechuanaland		[16] *358*	*132*					
Union of South Africa		*30,657*	*31,780*	*31,696*	*31,418*	*32,008*		
Basutoland		*1,369*	*1,860*	1,904	1,953	2,002		
Rhodesia, Southern	December	300	331	331	317	325		
Swaziland		*164*	*57*	38	76	77		
Tanganyika Territory		[16] 2,793	[16] *3,405*		[16] 3,940			
ASIA								
Cyprus [17]	March	279	266	281	255	240		
Turkey, European, and Asiatic		19,713			11,914			
Palestine	February–March		*232*	262	271	298		
Persia							[15,16] 4,000	
Syria				2,128	2,099			
India:								
British	December–April	23,164	22,075	22,082	22,338			
Native States	do	[16] 8,038	12,491	11,821	11,199			
Russia [18]		37,678	[18] 10,950	[18] 6,963	[18]10,888	22,656	[18] 14,558	
China (includes Manchuria)		22,186						
Philippine Islands	December	96	196	223	258	302		
Dutch East Indies:								
Java and Madura			842	988				
Outer Possessions			113	117				
OCEANIA								
Australia	December	89,008	77,898	82,226	78,803	80,110	83,083	
New Zealand	April	*23,996*	23,285	22,222	23,081	23,776	24,548	

Division of Statistical and Historical Research. Census returns are in italics; other returns are in Roman. All estimates for countries reporting as of December have been considered as of January of the following year.

[5] 1920.
[7] 1915.
[15] Unofficial.
[16] Goats included.
[17] Sheep one year and above. It is stated that 30 per cent may be added for those under that age.
[18] Excludes Turkestan and Transcaucasia. The number in Turkestan and Azerbaijan (part of Transcaucasia) in 1920 amounted to 4,745,000 sheep and 1,663,000 goats.

TABLE 562.—*Sheep: Yearly losses per 1,000 from disease and exposure, 1890–1925*

Year ended Apr. 30	Loss per 1,000		Year ended Apr. 30	Loss per 1,000		Year ended Apr. 30	Loss per 1,000		Year ended Apr. 30	Loss per 1,000	
	From disease	From exposure		From disease	From exposure		From disease	From exposure		From disease	From exposure
1890	24.0	51.0	1899	21.0	35.0	1908	22.5	22.9	1917	21.8	32.4
1891	23.0	17.0	1900	20.0	18.0	1909	26.6	28.3	1918	19.8	19.3
1892	19.0	14.0	1901	24.0	22.0	1910	27.5	43.9	1919	19.7	24.4
1893	24.0	20.0	1902	25.0	31.6	1911	25.5	23.0	1920	23.7	34.6
1894	20.0	15.0	1903	27.8	53.6	1912	26.7	47.0	1921	23.1	15.6
1895	26.0	29.0	1904	26.0	37.7	1913	24.8	25.0	1922	21.4	23.4
1896	27.0	21.0	1905	24.6	30.8	1914	21.9	22.0	1923	22.4	24.1
1897	23.0	32.0	1906	22.2	37.0	1915			1924	20.1	17.4
1898	26.0	27.0	1907	25.6	35.4	1916	21.6	21.7	1925	18.2	20.3

Division of Crop and Livestock Estimates. As reported by crop reporters May 1, for year ending Apr. 30.

TABLE 563.—*Sheep: Receipts and shipments at principal markets and at all markets, 1909–1925*

[Thousands—i. e., 000 omitted]

RECEIPTS

Year	Chicago	Denver	East St. Louis	Fort Worth	Kansas City	Omaha	South St. Joseph	South St. Paul	Sioux City	Total nine markets	All other markets reporting[1]	Total all markets reporting[1]
1909	4,441	634	776	188	1,645	2,167	621	496	78	11,046	(1)	(1)
1910	5,725	596	736	163	1,841	2,985	560	865	151	13,126	(1)	(1)
1911	5,736	617	992	187	2,175	2,978	718	712	212	14,327	(1)	(1)
1912	6,056	777	1,031	284	2,134	2,951	729	628	207	14,797	(1)	(1)
1913	5,963	620	950	328	2,095	3,222	812	785	271	14,986	(1)	(1)
1914	5,378	692	749	408	2,002	3,114	830	795	404	14,372	(1)	(1)
1915	3,510	765	648	363	1,815	3,268	878	704	337	12,288	6,147	18,435
1916	4,291	1,409	671	431	1,758	3,171	804	623	321	13,479	7,213	20,692
1917	3,595	2,060	531	406	1,499	3,017	679	430	267	12,484	7,732	20,216
1918	4,630	1,662	536	335	1,667	3,386	827	630	387	14,050	8,435	22,485
1919	5,244	2,087	724	453	1,945	3,789	1,007	912	686	16,847	10,409	27,256
1920	4,005	2,979	605	394	1,687	2,891	843	729	358	13,591	9,947	23,538
1921	4,734	1,408	636	357	1,780	2,753	931	633	288	13,580	10,588	24,168
1922	3,874	1,867	628	325	1,574	2,533	730	499	223	12,253	10,111	22,364
1923	4,098	1,857	561	386	1,671	2,970	979	454	216	13,192	8,833	22,025
1924	4,192	2,040	489	373	1,569	2,844	1,089	476	310	13,382	8,819	22,201
1925	3,969	2,357	559	314	1,500	2,420	1,143	545	360	13,167	8,933	22,100

SHIPMENTS

1909	940	(1)	114	(1)	(1)	959	127	348	34	2,522	(1)	(1)
1910	1,494	(1)	77	(1)	(1)	1,694	137	689	79	4,170	(1)	(1)
1911	1,283	(1)	108	(1)	(1)	1,565	152	542	63	3,713	(1)	(1)
1912	1,175	(1)	97	(1)	(1)	1,343	154	431	35	3,235	(1)	(1)
1913	1,450	(1)	70	(1)	(1)	1,586	175	596	70	3,947	(1)	(1)
1914	1,273	(1)	44	(1)	(1)	1,198	170	565	87	3,337	(1)	(1)
1915	258	653	72	163	611	1,369	264	536	124	4,050	2,700	6,750
1916	829	1,291	86	259	556	1,301	181	485	114	5,102	4,091	9,193
1917	836	1,958	69	248	583	1,638	207	319	97	5,955	5,055	11,010
1918	1,205	1,484	68	175	744	1,953	248	463	178	6,518	5,686	12,204
1919	1,309	1,822	125	276	783	2,150	301	676	408	7,850	6,735	14,585
1920	1,202	1,864	140	204	623	1,474	228	416	160	6,311	6,252	12,563
1921	1,352	1,288	245	207	485	1,124	200	298	98	5,297	6,036	11,333
1922	1,273	1,693	223	244	558	1,094	154	176	69	5,484	6,193	11,677
1923	1,414	1,685	207	231	554	1,288	226	194	80	5,879	5,851	11,730
1924	1,381	1,875	177	218	524	1,242	282	157	116	5,972	5,822	11,794
1925	1,109	2,189	221	174	459	899	279	199	86	5,615	6,095	11,710

Division of Statistical and Historical Research. Prior to 1915 receipts compiled from yearbooks of stockyard companies; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool. Prior to 1915 shipments compiled from yearbooks of stockyard companies, except East St. Louis (1909 to 1914 from Merchants' Exchange Annual Report); subsequent figures from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Figures prior to 1915 not obtainable.

TABLE 564.—*Sheep: Receipts at all public stockyards, 1915–1925*

[Thousands—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1915[1]	1,517	1,257	1,248	1,019	1,050	1,080	1,264	1,725	2,501	2,359	2,042	1,373	18,435
1916[1]	1,450	1,280	1,156	1,144	1,347	1,394	1,451	1,984	2,650	3,231	2,126	1,479	20,692
1917	1,578	1,384	1,256	1,152	1,059	1,240	1,353	1,763	2,554	3,195	2,099	1,583	20,216
1918	1,354	1,096	1,270	1,159	1,214	1,429	1,639	2,270	3,496	3,327	2,605	1,626	22,485
1919	1,594	1,157	1,268	1,438	1,468	1,775	2,287	3,360	3,854	3,754	2,845	2,456	27,256
1920	1,614	1,416	1,315	1,466	1,488	1,640	2,034	2,606	2,895	3,027	2,471	1,566	23,538
1921	1,792	1,516	1,750	1,677	1,916	1,849	1,776	2,500	2,618	3,042	2,093	1,664	24,168
1922	1,835	1,399	1,465	1,227	1,692	1,700	1,677	1,951	2,303	3,311	2,288	1,516	22,364
1923	1,636	1,366	1,430	1,447	1,794	1,426	1,661	1,800	2,659	3,464	1,816	1,526	22,025
1924	1,697	1,412	1,367	1,348	1,344	1,550	1,672	2,005	3,027	3,295	1,879	1,605	22,201
1925	1,467	1,388	1,504	1,541	1,689	1,603	1,699	2,064	2,627	3,198	1,712	1,608	22,100

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1]Complete information for 1915 and 1916, particularly on disposition of stock, is not obtainable from many markets.

TABLE 565.—*Sheep: Receipts at Chicago, East St. Louis, Kansas City, and Omaha combined, 1909–1925*

[Thousands—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1909	576	565	700	593	465	607	636	862	1,206	1,281	841	700
1910	651	522	551	477	577	631	794	1,199	1,609	1,820	1,258	702
1911	822	686	749	686	763	796	807	1,085	1,566	2,093	1,115	810
1912	1,020	849	856	770	665	671	837	1,052	1,528	1,906	1,113	905
1913	892	750	710	770	737	732	831	963	1,809	1,848	1,089	979
Av. 1909–1913	792	674	711	659	641	687	781	1,032	1,556	1,772	1,083	819
1914	934	863	909	858	707	716	723	979	1,558	1,512	705	779
1915	799	670	723	540	469	531	637	931	1,337	1,080	868	736
1916	742	697	632	586	632	659	634	991	1,301	1,403	854	761
1917	796	693	682	592	441	470	526	650	1,111	1,210	715	756
1918	716	525	620	518	538	554	726	989	1,770	1,569	952	741
1919	780	547	564	623	612	742	1,098	1,461	1,968	1,400	951	957
1920	666	619	580	462	532	632	827	1,189	1,288	946	817	631
Av. 1914–1920	776	659	673	597	562	615	739	1,027	1,476	1,291	837	766
1921	813	700	819	754	729	725	645	1,100	1,173	1,095	686	664
1922	753	602	640	517	659	690	695	826	835	1,072	726	594
1923	782	665	735	690	672	529	711	807	1,179	1,231	612	685
1924	811	595	601	598	544	671	740	895	1,405	943	546	742
1925	596	619	727	655	630	612	687	867	1,060	821	512	658
Av. 1921–1925	751	636	704	643	647	645	696	899	1,130	1,032	616	669

Division of Statistical and Historical Research. Prior to 1915 figures compiled from yearbooks of the stockyard companies; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 566.—*Sheep: Receipts, local slaughter, and stocker and feeder shipments, public stockyards, 1916–1925*

[Thousands—i. e., 000 omitted]

RECEIPTS

Market	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Albany, N. Y	23	45	1	1	(1)	(1)	(1)			
Amarillo, Tex	56	158	155	236	189	38	73	101	159	148
Atlanta, Ga		2	1	2	1	2	2	5	3	6
Augusta, Ga		(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Baltimore, Md	279	349	359	371	367	466	306	284	288	307
Boston, Mass	3	3	4	4	5	2	2	4	2	3
Buffalo, N. Y	1,024	756	904	1,100	1,052	1,380	1,191	1,226	1,166	1,059
Chattanooga, Tenn	4	2	3	3	2	3	4	2	1	2
Cheyenne, Wyo		210	371	442	223	148	139	169	157	105
Chicago, Ill	4,291	3,595	4,630	5,244	4,005	4,734	3,874	4,098	4,192	3,969
Cincinnati, Ohio	332	270	275	335	366	438	394	345	327	370
Cleveland, Ohio	254	320	370	467	420	370	360	333	365	416
Dallas, Tex	1	(1)	(1)	(1)	1	1	1	(1)	(1)	(1)
Dayton, Ohio	4	4	5	11	9	7	8	7	8	8
Denver, Colo	1,409	2,060	1,652	2,087	2,079	1,468	1,867	1,857	2,040	2,357
Detroit, Mich	284	297	279	344	328	343	356	298	393	367
East St. Louis, Ill	671	531	536	724	605	636	628	551	489	559
El Paso, Tex	117	211	88	252	136	71	49	73	41	124
Evansville, Ind	7	9	11	14	14	8	11	8	6	7
Fort Wayne, Ind								5	18	20
Fort Worth, Tex	431	406	335	453	394	357	325	386	373	314
Fostoria, Ohio	12	12	10	11	17	21	14	12	15	14
Indianapolis, Ind	98	102	114	131	136	145	147	124	123	147
Jacksonville, Fla	1	(1)	2	2	1	(1)	(1)	(1)	(1)	(1)
Jersey City, N. J	1,546	1,329	1,095	1,532	1,554	1,994	1,854	1,276	1,230	1,213
Kansas City, Mo	1,758	1,499	1,667	1,945	1,687	1,780	1,574	1,671	1,569	1,500
Knoxville, Tenn	2	3	2	2	1	1	2	1	2	3
Lafayette, Ind	2	4	5	8	8	8	4	4	6	6
Lancaster, Pa	1	160	257	74	122	12	27	53	15	18
Laredo, Tex								1	3	3
Los Angeles, Calif								75	102	30
Louisville, Ky	343	272	257	273	277	286	318	265	213	229
Marion, Ohio			2	32	50	15	13	11	12	8
Memphis, Tenn	4	(1)	2	1	2	(1)	1	2	1	4
Milwaukee, Wis	55	48	57	65	61	59	45	40	37	45
Montgomery, Ala		1	7	7	4	2	2	3	2	3
Moultrie, Ga						1		(1)	(1)	(1)
Muncie, Ind										11
Nashville, Tenn	47	94	114	147	129	138	152	129	116	145
Newark, N. J								29	33	38
New Orleans, La	4	6	9	6	6	4	4	4	2	2
New York, N. Y	94	80	271	291	158	221	143	74	68	109
North Salt Lake, Utah	404	357	424	388	481	368	459	449	618	688
Ogden, Utah		380	423	516	603	576	704	849	565	884
Oklahoma City, Okla	115	50	32	19	15	18	18	9	9	10
Omaha, Nebr	3,171	3,017	3,386	3,789	2,891	2,753	2,533	2,970	2,844	2,420
Pasco, Wash			58	131	92	72	66	66	84	71
Peoria, Ill	1	1	1	4	3	7	3	4	3	6
Philadelphia, Pa	282	185	231	298	349	454	352	248	251	227
Pittsburgh, Pa	337	563	553	767	922	1,197	1,204	1,045	979	910
Portland, Oreg	171	141	149	215	236	329	205	179	199	179
Pueblo, Colo	806	800	762	837	734	541	645	704	875	713
Richmond, Va	10	8	7	10	10	13	12	9	9	8
South St. Joseph, Mo	804	679	827	1,007	843	931	730	979	1,089	1,143
South St. Paul, Minn	623	430	630	912	729	633	499	454	476	545
San Antonio, Tex	28	51	41	88	70	49	66	23	18	11
Seattle, Wash	20	9	52	102	91	91	70	86	100	78
Sioux City, Iowa	321	267	387	686	358	288	223	216	310	360
Sioux Falls, S. Dak		(1)	2	37	5	2	2	5	5	2
Spokane, Wash	32	39	102	117	127	73	63	28	48	37
Springfield, Ohio								9	14	16
Toledo, Ohio	29	34	29	54	69	23	20	13	28	20
Washington, D. C	15	7	8	20	27	35	21	17	16	14
Wichita, Kans	21	27	40	59	39	32	82	120	84	89
Discontinued [2]	347	333	491	583	435	524	497	7	(1)	
Total	20,692	20,216	22,485	27,256	23,538	24,168	22,364	22,025	22,201	22,100

[1] Not over 500.

[2] Includes only those markets which have been totally discontinued.

TABLE 566.—*Sheep: Receipts, local slaughter, and stocker and feeder shipments public stockyards, 1916–1925*—Continued

[Thousands—i. e., 000 omitted]

LOCAL SLAUGHTER

Market	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Albany, N. Y.		2	(1)	(1)	(1)	(1)				
Atlanta, Ga.		(1)	(1)	1	1	1	1	3	2	1
Augusta, Ga.		(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Baltimore, Md.	93	60	85	103	121	186	144	131	126	104
Buffalo, N. Y.	183	119	142	231	263	243	193	161	138	129
Chattanooga, Tenn.			2	2	2	3	4	2	1	2
Chicago, Ill.	3,462	2,759	3,425	3,935	2,803	3,383	2,601	2,684	2,812	2,860
Cincinnati, Ohio	79	51	52	84	81	121	91	62	60	53
Cleveland, Ohio	144	118	132	176	168	234	189	186	181	188
Dallas, Tex.	1	(1)	(1)	(1)	1	1	1	(1)	(1)	(1)
Dayton, Ohio	2	2	2	4	6	5	5	5	6	5
Denver, Colo.	116	95	174	241	239	180	172	169	168	167
Detroit, Mich.	209	156	138	212	216	168	196	194	212	200
East St. Louis, Ill.	584	462	468	599	465	391	405	354	311	338
El Paso, Tex.		3	6	3	7	7	7	8	9	6
Evansville, Ind.	1	1	1	1	3	3	3	2	2	1
Fort Wayne, Ind.								1	2	1
Fort Worth, Tex.	189	144	131	164	206	157	80	155	155	141
Fostoria, Ohio		4	(1)	(1)	(1)	(1)	2	(1)	(1)	(1)
Indianapolis, Ind.	31	21	16	26	31	44	64	61	56	58
Jacksonville, Fla.		(1)	1	1	(1)	(1)	(1)	(1)	(1)	(1)
Jersey City, N. J.	1,546	1,329	1,095	1,532	1,554	1,994	1,854	1,276	1,230	1,213
Kansas City, Mo.	1,177	886	951	1,176	1,066	1,307	1,000	1,101	1,046	1,046
Knoxville, Tenn.	(1)	(1)	1	1	1	1	1	1	(1)	(1)
Lafayette, Ind.	1	1	1	2	1	2	1	2	1	2
Lancaster, Pa.			1	1	2	2	1	2	3	3
Laredo, Tex.								1	3	3
Los Angeles, Calif.								71	102	28
Louisville, Ky.	25	20	24	24	29	26	27	24	18	22
Marion, Ohio			(1)	(1)	1	(1)	(1)	(1)	(1)	(1)
Memphis, Tenn.				(1)		(1)	(1)	(1)	(1)	1
Milwaukee, Wis.	38	38	34	42	45	47	34	29	33	34
Montgomery, Ala.				1	1	(1)	(1)	(1)	1	(1)
Muncie, Ind.										(1)
Nashville, Tenn.	1	9	13	15	18	23	27	21	20	20
Newark, N. J.								29	33	38
New Orleans, La.	4	5	7	4	3	3	2	2	2	1
New York, N. Y.	94	83	271	291	158	221	143	75	68	109
North Salt Lake, Utah	13	46	26	17	15	67	20	19	45	44
Ogden, Utah		8	43	24	17	14	8	7	9	4
Oklahoma City, Okla.	72	27	14	8	5	12	12	4	6	6
Omaha, Nebr.	1,870	1,378	1,433	1,639	1,417	1,626	1,440	1,682	1,602	1,522
Pasco, Wash.			(1)	(1)						
Peoria, Ill.	1	1	1	1	2	3	1	1	1	1
Philadelphia, Pa.		170	220	286	343	446	345	244	246	223
Pittsburgh, Pa.	111	85	95	103	125	148	117	117	115	105
Portland, Oreg.	112	87	77	109	104	151	95	104	96	94
Richmond, Va.	2	4	5	6	7	10	9	8	7	6
South St. Joseph, Mo.	624	472	580	706	615	730	576	754	805	866
South St. Paul, Minn.	152	118	176	251	300	316	319	253	314	347
San Antonio, Tex.		9	1	1	2	2	4	2	3	3
Seattle, Wash.	20	9	52	101	90	91	69	83	99	75
Sioux City, Iowa	216	170	210	282	199	191	153	136	193	274
Sioux Falls, S. Dak.		(1)	(1)	(1)	2	1	(1)	(1)	(1)	(1)
Spokane, Wash.	1	4	9	13	16	26	11	8	13	10
Springfield, Ohio								(1)	1	(1)
Toledo, Ohio	3	3	2	4	2	3	3	1	1	1
Washington, D. C.	15	6	8	20	27	34	20	17	15	14
Wichita, Kans.	4	2	4	6	5	6	13	17	27	30
Discontinued[2]	32	175	137	197	196	228	206	2	(1)	
Total	11,228	9,142	10,266	12,646	10,981	12,858	10,669	10,271	10,399	10,399

[1] Not over 500.

[2] Includes only those markets which have been totally discontinued.

TABLE 566.—*Sheep: Receipts, local slaughter, and stocker and feeder shipments public stockyards, 1916–1925*—Continued

[Thousands—i. e., 000 omitted]

STOCKER AND FEEDER SHIPMENTS

Market	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Amarillo, Tex	17	79	50	116	86	23	23	62	127	96
Atlanta, Ga				(1)		(1)	(1)	1		
Augusta, Ga				(1)	(1)	(1)	(1)		(1)	
Baltimore, Md	2	1	1	2	1	(1)	1	1	1	(1)
Buffalo, N. Y	14	18	21	14	23	4	3	2	9	9
Chattanooga, Tenn			1	1	(1)					
Chicago, Ill	467	634	968	1,106	899	521	688	682	707	597
Cincinnati, Ohio	5	1	5	8	8	13	15	15	11	18
Cleveland, Ohio		1	3	4	(1)	4	7	4	3	
Denver, Colo	741	1,030	921	1,290	1,349	643	1,088	1,068	1,130	1,115
Detroit, Mich	5	5	3	8	20	14	12	12	10	10
East St. Louis, Ill	36	48	48	70	60	33	50	51	46	12
El Paso, Tex		164	43	189	95	21	30	37	15	78
Evansville, Ind		(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Fort Wayne, Ind								(1)	1	3
Fort Worth, Tex	72	127	111	164	71	80	136	39	50	60
Fostoria, Ohio			(1)	(1)	1	1	(1)	1	1	(1)
Indianapolis, Ind		4	5		5	10	9	5	9	17
Jacksonville, Fla	(1)		(1)	1	1		(1)			
Kansas City, Mo	460	510	602	672	474	324	385	407	368	319
Knoxville, Tenn		2	1	1	(1)		2			
Lafayette, Ind	(1)	(1)	1	1	1	1	1	1	1	2
Laredo, Tex								(1)	1	(1)
Los Angeles, Calif								4	(1)	1
Louisville, Ky			27	31	20	25	34	34	18	26
Marion, Ohio			(1)	2	1	1	2	2	1	(1)
Memphis, Tenn	(1)					(1)	(1)	(1)	(1)	(1)
Milwaukee, Wis	1	1	4	1	1					
Montgomery, Ala			(1)	(1)	1	(1)	(1)	(1)	(1)	(1)
Muncie, Ind										1
Nashville, Tenn	5	3	2	19	6	4	4	2	1	2
Newark, N. J								(1)	(1)	
New Orleans, La		(1)	2	1	1	1	1	1	(1)	1
North Salt Lake, Utah	47	159	215	277	211	142	276	234	345	378
Ogden, Utah		1	41	171	133	197	281	360	244	306
Oklahoma City, Okla	24	13	6	6	3	2	3	3	2	2
Omaha, Nebr	1,026	1,302	1,592	1,787	1,124	670	757	889	823	593
Pasco, Wash			59	131	68					
Peoria, Ill			(1)	1	1	4	1	3	2	4
Portland, Oreg	15	27	18	27	40	13	7	5	8	6
Pueblo, Colo			20	(1)	1	(1)	3	212	347	299
Richmond, Va	1	1	1	2	1	1	1	1	2	1
South St. Joseph, Mo	97	124	126	200	142	107	113	150	229	203
South St. Paul, Minn	140	92	109	201	113	78	66	91	63	63
San Antonio, Tex	9	1	17	46	33	5	38	7	6	4
Sioux City, Iowa	87	62	129	272	90	64	45	42	64	61
Sioux Falls, S. Dak		(1)	(1)	28	1	(1)	(1)	1	(1)	(1)
Spokane, Wash		16	24	35	75	12	22	12	12	16
Toledo, Ohio				(1)	3	(1)	(1)		(1)	(1)
Wichita, Kans	1	11	16	19	3	2	17	37	22	29
Discontinued[2]	5	11	16	52	14	75	46	(1)		
Total	3,277	4,448	5,208	6,956	5,180	3,095	4,167	4,478	4,679	4,332

Division of Statistical and Historical Research. Compiled from reports made by stockyards to the Division of Livestock, Meats, and Wool.

[1] Not over 500. [2] Includes only those markets which have been totally discontinued.

TABLE 567.—*Sheep: Receipts, local slaughter, and stocker and feeder shipments at certain public stockyards, 1925*

[Thousands—i. e., 000 omitted]

Stockyard	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Baltimore, Md.:													
Receipts	10	7	6	7	21	26	36	69	44	40	29	12	307
Local slaughter	9	5	5	6	10	8	13	11	12	10	9	6	104
Stocker and feeder shipments	0	0	0	0	0	(1)	0	0	(1)	(1)	(1)	0	(1)
Buffalo, N. Y.:													
Receipts	134	102	93	95	93	40	37	53	78	107	113	114	1,059
Local slaughter	12	9	12	11	12	5	6	9	13	13	16	11	129
Stocker and feeder shipments	1	1	1	2	(1)	(1)	0	(1)	(1)	2	1	1	9

[1] Not over 500.

TABLE 567.—*Sheep: Receipts, local slaughter, and stocker and feeder shipments at certain public stockyards, 1925*—Continued

[Thousands—i. e., 000 omitted]

Stockyard	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Chicago, Ill.:													
Receipts	305	305	338	334	314	267	292	373	419	410	272	340	3,969
Local slaughter	207	199	241	252	250	250	260	276	262	251	197	215	2,860
Stocker and feeder shipments	26	29	26	10	13	10	25	85	138	132	48	55	597
Cincinnati, Ohio:													
Receipts	3	3	2	3	23	100	95	71	40	14	9	7	370
Local slaughter	3	2	1	3	3	12	6	3	6	5	5	4	53
Stocker and feeder shipments	0	0	0	0	(1)	3	6	6	2	1	(1)	(1)	18
Cleveland, Ohio:													
Receipts	33	17	25	41	30	15	15	22	49	53	58	58	416
Local slaughter	12	9	15	16	8	13	14	19	19	23	20	20	188
Denver, Colo.:													
Receipts	147	177	184	187	106	65	88	146	282	647	231	97	2,357
Local slaughter	16	18	20	15	14	12	15	13	12	13	8	11	167
Stocker and feeder shipments	34	33	18	7	8	11	19	45	121	556	204	59	1,115
Detroit, Mich.:													
Receipts	38	22	15	18	16	8	9	20	47	63	65	46	367
Local slaughter	18	13	4	9	11	7	8	14	25	27	34	30	200
Stocker and feeder shipments	1	0	(1)	(1)	(1)	(1)	(1)	(1)	3	4	1	1	10
East St. Louis, Ill.:													
Receipts	23	23	26	14	38	87	80	70	54	60	38	46	559
Local slaughter	12	8	13	5	28	68	59	47	26	25	26	21	338
Stocker and feeder shipments	2	0	0	(1)	1	1	2	(1)	3	2	(1)	1	12
Fort Worth, Tex.:													
Receipts	30	18	22	20	24	25	35	23	34	32	22	29	314
Local slaughter	7	6	9	11	12	11	17	10	16	19	12	11	141
Stocker and feeder shipments	11	1	1	2	4	4	13	3	6	9	3	3	60
Indianapolis, Ind.:													
Receipts	6	2	3	1	3	14	15	19	30	24	12	18	147
Local slaughter	3	1	1	1	2	8	9	11	10	5	3	4	58
Stocker and feeder shipments	(1)	(1)	(1)	(1)	(1)	2	3	3	7	1	(1)	1	17
Jersey City, N. J.:													
Receipts	70	72	57	70	73	151	149	187	105	113	84	82	1,213
Local slaughter	70	72	57	70	73	151	149	187	105	113	84	82	1,213
Kansas City, Mo.:													
Receipts	92	98	134	128	123	108	127	137	204	151	83	115	1,500
Local slaughter	77	63	98	109	93	83	90	76	114	90	66	87	1,046
Stocker and feeder shipments	12	12	8	7	11	24	27	51	76	60	14	17	319
Los Angeles, Calif.:													
Receipts	3	2	6	5	3	3	(1)	1	3	1	1	2	30
Local slaughter	3	3	5	5	2	2	1	1	3	1	(1)	2	28
Stocker and feeder shipments	0	0	0	(1)	1	(1)	0	0	0	0	0	0	1
Milwaukee, Wis.:													
Receipts	1	1	1	1	1	2	4	6	8	13	5	2	45
Local slaughter	1	1	1	1	1	2	4	5	7	5	4	2	34
Oklahoma City, Okla.:													
Receipts	(1)	1	(1)	(1)	1	1	2	1	1	2	1	(1)	10
Local slaughter	(1)	(1)	(1)	(1)	1	1	1	1	(1)	(1)	1	1	6
Stocker and feeder shipments	0	(1)	(1)	(1)	0	0	(1)	0	(1)	2	0	0	2
Omaha, Nebr.:													
Receipts	176	194	229	179	156	150	189	287	383	201	119	157	2,420
Local slaughter	135	127	156	142	129	130	141	142	141	88	78	113	1,522
Stocker and feeder shipments	11	15	14	6	6	11	41	125	209	106	27	22	593
Pittsburgh, Pa.:													
Receipts	56	54	67	73	75	108	118	98	72	58	61	70	910
Local slaughter	9	6	7	10	10	10	9	8	10	9	8	9	105
Portland, Oreg.:													
Receipts	11	7	6	8	20	30	28	24	15	14	9	7	179
Local slaughter	6	4	3	3	12	14	17	14	8	6	5	2	94
Stocker and feeder shipments	(1)	(1)	(1)	0	1	1	(1)	1	1	2	(1)	(1)	6
South St. Joseph, Mo.:													
Receipts	91	107	149	119	113	53	55	72	104	103	79	98	1,143
Local slaughter	75	81	108	94	96	50	49	49	60	69	59	76	866
Stocker and feeder shipments	15	12	13	9	10	3	7	21	42	33	19	19	203
South St. Paul, Minn.:													
Receipts	47	33	15	9	8	5	12	38	81	141	93	63	545
Local slaughter	25	16	11	10	7	5	11	28	53	80	63	38	347
Stocker and feeder shipments	2	1	(1)	(1)	(1)	1	1	4	13	23	12	6	63
Sioux City, Iowa:													
Receipts	51	38	26	18	7	3	10	19	43	58	40	47	360
Local slaughter	41	31	24	17	7	3	7	14	24	33	34	39	274
Stocker and feeder shipments	2	5	1	(1)	(1)	1	2	3	14	22	5	6	61
Wichita, Kans.:													
Receipts	4	3	6	2	3	5	8	17	9	17	8	7	89
Local slaughter	2	3	3	1	3	4	3	3	2	2	2	2	30
Stocker and feeder shipments	1	0	0	0	(1)	(1)	1	7	3	12	4	1	29

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool. Local slaughter data from stockyards.

[1] Not over 500.

TABLE 568.—*Feeding sheep: Inspected shipments from public stockyards, 1925*

Origin and destination	January	February	March	April	May	June	July	August	September	October	November	December	Total
MARKET ORIGIN	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Chicago, Ill	19,700	31,019	29,248	8,552	12,093	10,342	25,571	78,921	143,437	120,631	47,594	63,401	590,509
Denver, Colo	28,676	18,563	5,964	3,812	5,394	1,920	4,949	28,172	130,139	555,365	186,460	53,007	1,022,411
Ft. Worth, Tex	11,183	4,394	1,000	2,657	4,830	4,004	6,155	3,352	8,230	9,681	3,925	3,239	62,150
Kansas City, Kans	9,369	7,157	3,133	3,387	6,649	10,866	20,640	32,564	57,818	40,309	11,986	10,985	214,863
Louisville, Ky			523			1,964	9,588	11,256	3,085	259			26,675
National Stockyards, Ill	24			804	1,977	4,920	4,140	9,253	2,401	335	2,773	26,627	
Omaha, Nebr	14,068	16,688	20,963	7,986	8,160	11,188	42,107	123,524	202,691	105,989	30,361	27,190	610,915
Sioux City, Iowa	2,621	3,859	1,071	68	129	329	1,452	2,554	12,550	21,248	5,447	5,247	56,575
South St. Joseph, Mo	3,965	1,409	102			404	1,740	9,460	16,884	12,006	3,739	2,839	52,248
South St. Paul, Minn	1,615	554	101	294		357	556	2,763	10,476	17,279	9,923	5,114	49,032
All other inspected	2,737	1,636	1,338	3,846	2,314	3,133	4,039	12,819	8,555	19,833	7,048	4,401	71,699
Total	93,958	85,279	63,443	30,602	39,873	46,184	121,717	309,525	603,118	905,001	306,808	178,196	2,783,704
STATE DESTINATION													
Colorado	9,473	8,850	4,773	3,113	5,614	1,920	4,949	3,519	60,651	352,462	118,657	35,725	609,706
Illinois	5,903	1,858	1,178	2,224	3,126	7,118	19,424	68,175	77,184	31,427	8,119	22,560	248,296
Indiana	3,023	1,059	3,947	246	7,254	2,586	16,593	36,071	63,008	39,918	7,260	4,617	185,582
Iowa	3,588	6,553	2,529	2,700	691	2,635	28,153	60,123	99,976	66,505	17,485	11,413	302,351
Kansas	17,028	3,058	1,446	1,147	531	7,376	7,273	24,377	51,389	40,508	11,020	13,334	178,487
Kentucky			633		337	1,995	11,033	13,706	4,396	897		212	33,179
Michigan	10,391	27,420	22,511	5,906	3,452	2,212	5,719	11,460	46,246	61,452	30,962	38,537	266,268
Minnesota	545	485	101			357	257	2,984	8,546	8,802	6,930	3,487	32,494
Missouri	4,554	1,710	2,321	2,651	3,625	5,403	9,885	30,282	41,271	24,874	6,373	5,377	138,326
Nebraska	30,606	22,968	19,111	5,752	9,697	5,107	9,747	42,587	107,287	238,223	85,596	31,699	608,380
Ohio	517	415	370	1,316	924	1,208	2,040	2,426	8,133	6,479	1,339	568	25,735
South Dakota	1	121					709	765	6,259	2,227	539	488	11,109
Texas	1,419	751	278	1,589	2,385	2,519	1,222	427	2,856	5,711	3,134	2,724	25,015
Wisconsin	2,889	2,774	1,756	237		403	1,592	6,779	12,345	9,376	1,350	1,656	41,157
All other	4,021	7,257	2,489	3,721	2,237	5,345	3,121	5,844	13,571	16,170	8,044	5,709	77,619
Total	93,958	85,279	63,443	30,602	39,873	46,184	121,717	309,525	603,118	905,001	306,808	178,196	2,783,704

Division of Statistical and Historical Research. Compiled from Bureau of Animal Industry Inspection records.

TABLE 569.—*Sheep: Estimated price per 100 pounds received by producers, United States, 1910–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Weighted av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	5.63	5.09	5.64	6.10	5.79	5.44	5.47	4.68	4.81	4.68	4.63	4.54	5.24
1911	4.47	4.34	4.45	4.55	4.51	4.24	4.19	3.98	3.91	3.68	3.65	3.71	4.16
1912	3.89	4.01	4.12	4.57	4.74	4.52	4.21	4.26	4.11	4.19	4.05	4.21	4.21
1913	4.35	4.63	4.97	5.16	4.91	4.84	4.20	4.32	4.23	4.16	4.27	4.46	4.55
Av. 1910–1913	4.58	4.52	4.80	5.10	4.99	4.76	4.52	4.31	4.26	4.18	4.15	4.23	4.55
1914	4.67	4.67	4.77	4.96	4.87	4.70	4.75	4.87	4.80	4.81	4.68	4.95	4.79
1915	4.95	5.14	5.36	5.60	5.54	5.43	5.35	5.16	5.06	5.18	5.18	5.38	5.27
1916	5.52	5.90	6.35	6.61	6.66	6.54	6.33	6.22	6.25	6.20	6.41	6.77	6.29
1917	7.33	8.17	9.21	9.69	10.15	9.84	9.32	9.33	10.05	10.24	10.20	10.44	9.45
1918	10.55	10.75	11.41	11.98	12.32	11.56	11.04	10.99	10.79	10.35	10.11	9.46	10.95
1919	9.68	9.95	10.45	11.33	10.93	10.34	9.25	9.06	8.69	8.46	8.35	8.53	9.63
1920	9.34	9.97	10.25	10.66	10.34	9.13	8.21	7.54	7.24	6.62	6.20	5.54	8.51
Av. 1914–1920	7.43	7.79	8.26	8.69	8.69	8.22	7.75	7.60	7.55	7.41	7.30	7.30	7.84
1921	5.30	5.01	5.27	5.11	5.11	4.74	4.34	4.38	4.11	3.96	3.84	4.10	4.65
1922	4.57	5.71	6.51	6.43	6.65	6.09	6.11	5.98	5.70	5.93	6.02	6.27	5.96
1923	6.88	6.83	7.06	7.20	6.92	6.43	6.43	6.22	6.57	6.33	6.20	6.39	6.65
1924	6.71	6.82	7.22	7.45	7.33	7.09	6.60	6.32	6.30	6.32	6.39	6.84	6.81
1925	7.86	8.41	8.20	8.42	7.53	7.04	7.17	7.32	7.27	7.31	7.51	7.79	7.70

Division of Crop and Livestock Estimates.

TABLE 570.—*Lambs: Estimated price per 100 pounds received by producers, United States, 1910–1925*

Year beginning June	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Weighted av.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	7.13	6.71	5.70	5.85	5.78	5.54	5.60	5.71	5.44	5.49	5.77	5.74	5.79
1911	5.51	5.42	5.25	5.02	4.68	4.68	4.93	5.22	5.15	5.38	5.98	6.16	5.28
1912	6.02	5.74	5.60	5.49	5.42	5.37	5.70	6.03	6.34	6.56	6.59	6.66	5.96
1913	6.36	6.05	5.50	5.51	5.51	5.64	5.85	6.16	6.18	6.31	6.47	6.49	6.03
Av. 1910–1913	6.26	5.98	5.51	5.47	5.35	5.31	5.52	5.78	5.78	5.94	6.20	6.26	5.76
1914	6.47	6.55	6.26	6.27	6.09	6.14	6.33	6.47	6.67	6.06	7.35	7.32	6.49
1915	7.26	7.21	6.70	6.71	6.70	6.76	7.02	7.29	7.78	8.10	8.58	8.49	7.38
1916	8.36	8.16	8.15	8.22	8.02	8.41	8.72	9.59	10.51	11.46	12.03	12.51	9.50
1917	12.64	11.19	12.08	13.06	14.09	13.79	13.81	13.83	13.77	14.11	15.34	15.39	13.60
1918	14.98	14.20	14.20	13.73	13.20	12.54	12.44	12.71	13.17	14.03	14.61	14.34	13.65
1919	13.89	13.09	12.91	12.25	11.47	11.45	11.85	12.91	14.08	14.17	14.63	14.26	13.05
1920	12.82	11.79	10.84	10.31	9.65	9.37	8.46	8.44	7.76	7.90	7.55	7.78	9.41
Av. 1914–1920	10.92	10.31	10.16	10.08	9.89	9.78	9.80	10.18	10.53	10.83	11.44	11.44	10.44
1921	7.59	7.37	6.99	6.27	5.98	6.12	6.60	7.33	8.87	10.21	10.54	10.39	7.83
1922	9.87	9.55	9.39	9.43	10.06	10.30	10.49	10.69	10.83	11.01	10.69	11.00	10.30
1923	10.72	10.60	9.96	10.28	10.17	10.01	10.10	10.19	10.53	11.22	11.32	11.43	10.54
1924	11.21	10.50	10.15	10.18	10.35	10.55	10.96	12.69	13.13	13.48	12.22	11.99	11.45
1925	11.62	11.71	11.80	11.95	12.04	12.20	12.67						

Divison of Crop and Livestock Estimates.

TABLE 571.—*Farm prices of sheep, per head, by ages, United States, January 1, 1912–1926*

Jan. 1—	Under 1 year old	Ewes 1 year and over	Wethers 1 year and over	Rams	Jan. 1—	Under 1 year old	Ewes 1 year and over	Wethers 1 year and over	Rams
	Dols.	*Dols.*	*Dols.*	*Dols.*		*Dols.*	*Dols.*	*Dols.*	*Dols.*
1912	2.64	3.45	3.43	8.26	1920	8.06	11.03	9.60	21.63
1913	3.11	3.98	3.93	8.80	1921	5.34	6.37	5.93	15.10
1914	3.22	4.09	4.06	8.49	1922	4.24	4.84	4.07	11.37
1915	3.62	4.59	4.48	9.01	1923	6.66	7.69	6.05	14.23
1916	4.13	5.35	5.02	10.32	1924	6.89	8.08	5.95	15.51
1917	5.63	7.48	6.78	13.62	1925	8.38	10.01	7.32	16.97
1918	9.06	12.70	11.26	20.84	1926	8.89	10.97	7.87	18.48
1919	8.82	12.44	11.02	21.90					

Division of Crop and Livestock Estimates.

TABLE 572.—*Sheep: Estimated farm price per 100 pounds received by producers, by States, 1925*

State	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	6.80	6.90	7.90	7.10	7.80	7.50	7.30	6.70	6.00	7.20	6.10	6.50	6.98
New Hampshire	6.50	6.30	6.50	6.00	----	----	6.50	6.50	5.70	5.50	5.00	6.00	6.05
Vermont	4.80	4.80	5.40	5.20	----	5.00	5.00	4.50	4.80	4.60	4.50	6.00	4.96
Massachusetts	----	----	----	----	----	----	6.00	----	6.50	----	5.00	6.50	6.00
Rhode Island	----	6.50	6.50	7.00	7.00	6.50	----	7.50	7.00	7.00	7.00	7.50	6.95
Connecticut	----	----	----	----	----	----	----	----	7.00	8.00	9.00	8.00	8.00
New York	6.60	7.00	6.50	6.20	5.90	6.20	6.10	5.80	6.00	6.20	6.60	6.40	6.29
New Jersey	----	----	7.30	7.80	----	----	----	9.00	5.50	5.50	----	6.00	6.85
Pennsylvania	6.40	7.40	7.90	8.20	7.40	6.20	7.00	6.30	6.30	6.80	7.20	6.80	6.99
Ohio	7.00	7.20	7.40	7.00	7.10	5.60	6.00	6.00	6.50	6.30	6.30	6.80	6.60
Indiana	6.40	6.80	6.60	6.20	5.20	4.90	5.10	5.20	5.50	5.30	5.40	6.10	5.68
Illinois	7.90	7.90	7.70	7.80	6.40	5.20	5.80	6.50	7.10	6.80	6.30	7.50	6.91
Michigan	6.30	7.10	7.80	7.20	6.40	5.80	6.30	5.50	6.00	6.90	6.00	6.50	6.50
Wisconsin	6.50	6.50	7.10	6.20	6.70	5.60	5.60	5.80	5.80	5.70	5.70	6.40	6.13
Minnesota	7.20	7.00	8.20	8.10	7.10	6.80	7.30	6.90	7.20	7.00	6.90	7.60	7.28
Iowa	7.80	8.00	8.00	7.10	7.40	6.30	7.30	6.50	6.60	7.20	7.20	8.50	7.32
Missouri	7.00	7.50	6.90	7.50	7.00	5.70	5.80	5.50	6.30	5.80	6.80	7.90	6.64
North Dakota	7.20	7.50	8.50	7.50	8.00	7.10	7.50	6.90	6.30	6.90	7.40	7.50	7.28
South Dakota	8.10	10.00	9.40	8.40	8.50	6.50	7.20	7.60	7.90	7.90	7.40	9.00	8.16
Nebraska	9.00	8.50	9.50	9.00	9.50	8.10	8.20	7.00	7.90	7.00	7.50	8.80	8.33
Kansas	8.10	8.00	7.80	8.80	7.90	7.20	7.60	6.70	7.70	7.20	7.60	8.60	7.77
Delaware	----	----	----	----	----	----	7.00	6.00	6.00	6.00	6.60	----	6.32
Maryland	6.50	7.00	7.40	6.60	6.80	6.80	5.00	5.50	6.30	5.70	6.50	6.50	6.38
Virginia	6.70	6.70	6.20	6.60	5.80	5.40	5.70	5.70	6.00	5.50	7.00	6.60	6.16
West Virginia	6.30	7.50	7.40	6.50	7.60	7.90	6.90	7.20	6.50	6.70	6.90	7.40	7.07
North Carolina	6.50	6.30	7.30	7.40	7.50	6.70	6.00	7.00	6.00	7.00	9.00	7.70	7.03
South Carolina	6.90	7.00	8.60	8.00	----	8.00	6.80	----	6.00	7.00	9.00	8.30	7.56
Georgia	5.50	5.80	7.00	7.40	8.00	6.00	6.60	5.90	6.00	6.00	6.00	6.50	6.44
Florida	----	----	4.50	5.00	5.00	4.00	5.70	4.00	5.00	5.30	6.00	5.00	4.95
Kentucky	6.30	6.80	7.00	7.00	6.20	5.60	5.50	6.30	6.10	6.00	6.10	6.50	6.28
Tennessee	6.90	6.00	5.60	6.40	5.40	5.40	5.80	6.00	6.30	5.50	5.60	5.90	5.83
Alabama	5.50	----	----	7.70	8.00	5.90	6.50	----	5.50	4.50	6.70	5.60	6.21
Mississippi	4.60	5.30	4.50	4.00	4.50	4.10	5.20	5.20	4.80	4.50	5.50	4.60	4.73
Arkansas	4.90	4.80	5.50	----	5.60	4.30	4.40	5.90	6.90	5.50	4.80	5.50	5.28
Louisiana	----	----	----	----	5.00	----	7.20	----	5.90	6.00	6.00	7.00	6.18
Oklahoma	----	----	8.00	8.00	9.00	6.00	----	7.20	6.80	6.00	7.00	8.30	7.37
Texas	7.60	7.80	7.70	7.90	7.90	6.10	7.90	7.70	7.20	7.10	6.70	7.70	7.44
Montana	10.00	9.60	8.80	9.00	8.40	7.50	7.30	7.70	8.20	8.70	8.90	8.50	8.55
Idaho	6.50	8.00	5.60	7.60	7.30	6.10	6.60	7.30	7.40	7.80	7.00	7.70	6.98
Wyoming	10.00	10.70	10.00	10.00	11.00	10.00	8.60	10.00	8.20	8.30	9.00	9.50	9.61
Colorado	8.40	9.00	8.60	10.00	9.00	7.00	7.00	7.60	8.50	7.60	7.70	7.70	8.18
New Mexico	----	9.80	----	9.50	10.00	8.80	8.30	8.30	7.00	8.00	7.20	7.60	8.45
Arizona	----	8.40	7.10	9.30	9.50	7.00	8.20	8.20	6.80	5.30	6.00	6.00	7.35
Utah	9.00	9.50	10.50	9.60	8.60	8.80	8.00	8.10	8.50	8.10	8.90	8.60	8.85
Nevada	----	----	7.00	8.90	8.50	7.00	----	----	----	8.00	8.50	8.50	8.06
Washington	7.80	9.00	10.10	9.10	7.30	6.70	7.40	6.70	7.80	7.30	7.60	7.50	7.86
Oregon	8.10	8.00	9.70	9.20	7.60	6.70	6.60	7.30	7.20	7.70	8.90	7.40	7.87
California	7.80	8.60	10.20	9.20	7.60	7.90	7.70	7.40	7.70	8.10	9.00	9.10	8.36
United States	7.86	8.41	8.20	8.42	7.53	7.04	7.17	7.32	7.27	7.31	7.51	7.79	7.65

Division of Crop and Livestock Estimates.

TABLE 573.—*Lambs: Estimated farm price per 100 pounds, received by producers, by States, 1925*

State	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	10.80	11.40	13.00	12.20	12.30	12.00	13.10	12.30	11.00	10.70	10.80	12.20	11.52
New Hampshire	------	12.20	12.00	12.00	12.00	12.50	------	------	12.06	11.50	12.00	12.10	12.03
Vermont	11.00	11.50	12.50	11.60	11.00	11.50	10.20	11.00	11.50	11.70	12.00	11.50	11.37
Massachusetts	------	------	------	------	------	------	13.00	------	13.00	13.00	11.00	11.20	12.24
Rhode Island	------	13.50	14.50	13.50	13.50	------	------	------	13.00	13.00	13.50	13.00	13.44
Connecticut	------	------	------	------	------	------	15.00	------	14.00	14.00	14.00	13.50	14.10
New York	14.00	13.60	14.00	13.40	12.40	12.60	12.50	11.90	12.30	12.40	12.40	12.90	12.87
New Jersey	------	------	15.20	15.00	------	12.70	------	------	12.50	11.00	------	12.00	13.07
Pennsylvania	12.00	13.20	13.10	13.50	13.50	12.50	11.70	11.60	11.60	11.80	11.90	12.60	12.42
Ohio	14.10	14.60	14.60	13.30	12.80	12.00	11.80	11.70	12.00	12.20	12.20	13.00	12.86
Indiana	13.00	13.70	13.50	12.10	12.30	11.60	11.80	11.50	11.80	11.80	11.90	12.80	12.32
Illinois	13.40	13.80	14.40	13.10	13.40	12.90	12.50	12.80	12.80	12.30	12.70	13.50	13.13
Michigan	13.50	13.90	14.90	13.00	11.90	12.20	12.60	11.90	12.40	12.60	12.60	13.40	12.91
Wisconsin	13.00	13.20	13.90	12.10	11.40	11.40	12.00	12.10	11.70	12.40	12.30	12.80	12.36
Minnesota	13.50	13.30	13.40	12.40	11.90	11.80	12.30	12.20	11.80	12.20	12.30	13.40	12.54
Iowa	14.30	14.60	14.30	12.60	12.70	12.20	12.50	12.30	12.60	12.60	12.50	13.50	13.06
Missouri	13.80	13.40	12.80	12.50	12.40	11.80	11.70	11.40	11.60	11.60	11.90	12.80	12.31
North Dakota	12.00	11.70	13.10	11.30	11.90	11.10	11.50	11.40	11.40	11.70	11.60	12.40	11.76
South Dakota	13.50	14.70	13.80	12.80	12.10	12.00	12.70	12.00	12.30	12.40	12.50	13.00	12.32
Nebraska	15.00	14.70	14.60	13.00	12.70	12.10	12.30	12.80	12.50	13.00	12.90	13.50	13.26
Kansas	13.80	14.00	13.10	12.80	12.20	12.00	12.00	12.10	12.60	12.60	12.30	12.90	12.65
Delaware	------	------	------	------	------	------	13.80	14.00	------	11.00	12.60	------	12.85
Maryland	13.00	14.00	14.40	14.40	14.40	13.30	13.30	12.80	12.40	13.00	13.00	14.00	13.50
Virginia	11.80	12.60	12.20	12.80	12.70	12.00	11.90	11.60	11.60	11.50	12.60	12.20	12.08
West Virginia	10.60	11.10	11.60	11.10	11.20	11.70	11.30	11.20	11.40	11.60	11.40	11.60	11.27
North Carolina	10.00	------	11.30	11.10	10.60	10.50	9.80	10.00	11.00	10.90	11.60	10.40	10.65
South Carolina	10.00	10.00	10.20	9.40	------	7.60	8.30	8.50	9.60	10.00	11.00	10.00	9.45
Georgia	7.40	9.00	9.80	10.20	------	8.40	9.26	8.50	9.60	7.70	10.06	9.50	8.95
Florida	------	------	5.70	6.00	------	5.00	8.70	------	------	7.00	8.00	------	6.73
Kentucky	11.00	12.00	13.00	12.50	12.60	11.80	11.80	12.40	12.00	11.70	11.60	12.50	12.08
Tennessee	10.10	10.60	12.00	10.80	11.50	11.20	10.40	10.00	9.70	9.50	9.50	10.30	10.47
Alabama	7.30	------	------	10.10	11.00	8.10	9.10	------	6.50	6.60	8.60	7.60	8.32
Mississippi	6.50	7.60	6.60	6.20	7.10	6.80	9.60	------	6.50	6.20	9.00	6.90	7.17
Arkansas	6.60	6.60	7.50	8.50	7.30	6.20	9.00	7.10	8.70	7.50	8.70	8.50	7.52
Louisiana	------	------	------	------	------	------	11.50	------	6.70	7.00	9.00	9.50	8.74
Oklahoma	------	------	11.80	12.00	11.00	------	11.00	9.70	10.90	10.10	10.50	12.00	11.00
Texas	10.00	10.10	10.40	10.40	10.40	9.50	11.60	10.00	10.40	10.10	10.20	11.60	10.39
Montana	12.50	12.50	13.10	11.70	10.70	10.60	10.90	11.50	11.50	12.10	12.90	12.20	11.85
Idaho	10.50	12.00	12.20	11.00	12.10	10.80	10.80	11.70	11.30	11.80	11.80	12.00	11.50
Wyoming	12.00	12.50	13.30	12.30	12.80	13.00	12.10	12.20	12.40	12.10	13.00	13.00	12.56
Colorado	14.00	14.50	14.70	12.60	12.70	12.80	12.50	12.90	13.20	12.90	13.40	13.40	13.30
New Mexico	------	12.00	------	12.50	12.50	11.10	11.20	12.00	12.10	12.30	10.30	11.80	11.78
Arizona	------	13.00	9.20	10.00	12.00	11.00	11.80	11.50	10.60	10.70	10.50	11.50	11.07
Utah	12.00	12.60	13.10	11.90	11.10	11.50	11.60	11.10	11.80	11.60	11.40	12.10	11.82
Nevada	------	------	14.00	11.00	11.00	11.20	11.00	11.50	11.50	12.10	12.90	13.60	11.98
Washington	11.50	13.00	13.60	12.10	11.70	10.00	10.90	11.50	11.00	11.00	10.90	10.70	11.49
Oregon	10.30	11.00	12.40	11.30	10.50	9.50	9.80	10.70	10.80	11.10	11.30	11.50	10.85
California	12.50	13.50	14.10	13.00	11.90	11.60	11.30	11.70	11.80	12.40	12.70	12.90	12.45
United States	12.69	13.13	13.48	12.22	11.99	11.62	11.71	11.80	11.95	12.04	12.20	12.67	12.29

Division of Crop and Livestock Estimates.

TABLE 574.—*Sheep and lambs, native and western: Average price per 100 pounds Chicago, by months, 1909–1925*

SHEEP

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	4.90	4.92	5.28	5.60	6.05	5.28	4.68	4.50	4.65	4.35	4.52	4.92	4.97
1910	5.55	6.50	7.60	7.60	6.55	5.10	4.20	4.20	4.25	3.95	3.70	3.90	5.26
1911	4.10	4.15	4.70	4.20	4.45	3.80	3.95	3.50	3.80	3.65	3.45	3.55	3.94
1912	4.30	4.15	5.30	5.90	6.15	4.50	4.25	4.05	4.15	4.00	4.05	4.45	4.60
1913	5.35	5.90	6.40	6.45	5.85	5.05	4.50	4.35	4.30	4.55	4.60	4.95	5.19
Av. 1909–1913	4.84	5.12	5.86	5.95	5.81	4.75	4.32	4.12	4.23	4.10	4.06	4.35	4.79
1914	5.50	5.70	5.95	6.25	5.65	5.10	5.40	5.55	5.30	5.30	5.65	5.40	5.56
1915	5.80	6.45	7.45	7.70	7.35	5.50	6.05	6.25	5.75	6.00	5.85	6.20	6.36
1916	7.20	7.75	8.25	8.15	8.20	7.35	7.25	7.35	7.80	7.50	8.00	9.00	7.82
1917	10.00	11.25	11.70	12.10	13.00	10.00	9.10	9.75	11.15	11.65	11.25	11.50	11.04
1918	12.20	12.35	13.60	15.65	14.75	13.40	12.65	13.15	11.80	10.45	9.85	9.40	12.44
1919	10.35	11.35	14.05	14.50	12.25	9.30	9.70	9.75	8.30	8.15	8.30	9.60	10.47
1920	11.80	13.35	13.40	14.25	12.25	8.50	8.90	7.70	6.85	6.45	5.75	4.70	9.49
Av. 1914–1920	8.98	9.74	10.63	11.23	10.49	8.45	8.44	8.50	8.14	7.93	7.81	7.97	9.03
1921	5.07	4.90	6.14	6.58	6.33	4.46	5.08	4.53	4.49	4.71	4.40	4.92	5.13
1922	7.26	8.28	9.17	9.33	7.35	5.59	6.12	5.63	6.05	6.25	7.48	7.28	7.15
1923	7.72	8.08	8.64	8.90	6.74	5.00	5.16	7.09	7.29	6.35	6.89	7.37	7.10
1924	8.16	9.12	10.50	10.21	8.11	5.82	5.66	6.18	5.46	6.60	6.62	8.45	7.57
1925	10.33	9.69	9.22	7.84	7.96	6.25	7.48	6.83	6.95	7.64	8.16	9.57	8.16
Av. 1921–1925	7.71	8.01	8.73	8.57	7.30	5.42	5.90	6.05	6.05	6.31	6.71	7.52	7.02

LAMBS

1909	7.35	7.50	7.65	7.85	8.25	7.60	7.70	7.35	6.80	6.50	7.10	7.50	7.43
1910	8.30	8.65	9.40	9.10	8.40	7.60	7.10	6.70	6.80	6.65	6.25	6.10	7.59
1911	6.20	6.05	6.10	5.50	5.85	6.10	6.30	6.35	5.70	5.75	5.54	5.75	5.93
1912	6.50	6.15	7.30	7.95	8.30	6.90	7.25	7.10	7.00	6.75	7.15	7.75	7.18
1913	8.55	8.50	8.60	8.40	7.40	6.85	7.55	7.40	7.15	7.05	7.25	7.60	7.69
Av. 1909–1913	7.38	7.37	7.81	7.76	7.64	7.01	7.18	6.98	6.69	6.54	6.66	6.94	7.16
1914	7.90	7.60	7.65	7.60	8.10	7.95	8.45	8.15	7.80	7.60	8.75	8.30	7.99
1915	8.40	8.75	9.55	9.65	10.10	9.20	8.75	8.90	8.75	8.75	8.80	9.00	9.05
1916	10.30	10.90	11.10	10.45	10.75	9.55	10.55	10.75	10.60	10.15	11.40	12.70	10.77
1917	13.85	14.30	14.25	14.40	16.90	15.25	15.65	15.50	17.50	17.40	16.75	16.45	15.68
1918	17.20	16.60	17.55	19.20	18.00	16.85	18.50	17.50	17.25	15.35	15.10	14.60	16.98
1919	16.25	17.40	19.05	18.15	16.25	14.05	17.10	16.75	14.85	15.90	14.50	16.40	16.31
1920	19.50	19.95	18.80	18.80	17.40	14.25	15.55	13.20	13.30	12.35	11.53	10.96	15.47
Av. 1914–1920	13.34	13.64	13.99	14.04	13.93	12.44	13.51	12.96	12.86	12.37	12.40	12.63	13.18
1921	10.72	9.07	9.91	9.69	11.07	10.67	10.09	9.46	8.86	8.66	9.25	10.86	9.86
1922	12.67	14.49	15.39	14.10	12.95	12.42	13.04	12.51	13.53	13.94	14.17	14.93	13.68
1923	14.69	14.85	14.56	14.42	14.12	14.81	14.22	12.89	13.52	12.93	12.75	12.96	13.89
1924	13.53	14.95	16.06	16.22	15.23	14.12	13.79	13.57	13.38	13.52	14.03	16.47	14.57
1925	18.28	17.59	16.28	14.85	13.06	15.86	15.11	14.88	15.19	15.20	15.44	16.15	15.66
Av. 1921–1925	13.98	14.19	14.44	13.86	13.29	13.58	13.25	12.66	12.90	12.85	13.13	14.27	13.53

Division of Statistical and Historical Research. Figures prior to 1921 for sheep, and prior to November, 1920, for lambs, compiled from Chicago Drovers Journal Yearbook; subsequent figures from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Simple average of monthly average prices.

TABLE 575.—*Sheep: Average price per 100 pounds at six markets, by months, 1925*

CHICAGO

Classification	January	February	March	April	May	June	Average, January to June
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to prime	*Dollars* 17.28	*Dollars* 16.79	*Dollars* 16.04	*Dollars* 14.62	*Dollars* 12.72	*Dollars* 15.06	*Dollars* 15.42
Heavy weight (92 lbs. up), medium to prime			15.13	13.57	11.62		
All weights, cull and common	14.55	14.38	13.73	12.45	10.50	12.16	12.96
Spring lambs—							
Medium to choice					15.21		
Yearling wethers, medium to prime	15.12	14.53	13.45	11.22	10.28	12.38	12.83
Wethers (2 yrs. old and over), medium to prime	10.64	10.42	11.04	9.72	8.29	8.88	9.83
Ewes—							
Common to choice	8.88	7.98	8.37	7.63	6.74	5.80	7.57
Canner and cull	5.11	4.56	4.79	4.41	3.30	2.82	4.16
Feeding sheep and lambs:							
Feeding lambs, medium to choice	16.30	16.50	16.22	14.27			

Classification	July	August	September	October	November	December	Average, July to December
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to choice	*Dollars* 14.69	*Dollars* 14.47	*Dollars* 14.73	*Dollars* 14.71	*Dollars* 15.03	*Dollars* 15.74	*Dollars* 14.90
Heavy weight (92 lbs. up), medium to choice							
All weights, cull and common	12.12	12.36	12.50	12.30	12.61	13.31	12.53
Yearling wethers—medium to choice	11.72	11.08	11.13	11.43	11.51	12.24	11.52
Ewes—							
Common to choice	6.64	6.42	6.36	6.37	6.57	7.50	6.64
Canner and cull	3.11	3.00	3.01	3.00	3.12	3.81	3.18
Feeding sheep and lambs:							
Feeding lambs, medium to choice	14.24	14.66	14.85	14.98	14.73	15.69	14.86

EAST ST. LOUIS

Classification	January	February	March	April	May	June	Average, January to June
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to prime	*Dollars* 16.90	*Dollars* 16.54	*Dollars* 15.94	*Dollars* 14.30	*Dollars* 12.42	*Dollars* 14.09	*Dollars* 15.03
Heavy weight (92 lbs. up), medium to prime					10.90		
All weights, cull and common	14.14	14.18	14.03	12.45	9.69	10.94	12.57
Spring lambs—							
Medium to choice					14.75		
Yearling wethers, medium to prime	13.66	13.64	13.16	11.22	9.51	11.04	12.04
Wethers (2 yrs. old and over), medium to prime	9.89	9.98	10.08	9.54	7.65	7.98	9.19
Ewes—							
Common to choice	8.11	7.89	8.12	7.59	5.91	4.64	7.04
Canner and cull	4.45	4.50	4.74	4.44	2.68	2.06	3.81

TABLE 575.—*Sheep: Average price per 100 pounds at six markets, by months, 1925*—Continued

EAST ST. LOUIS—Continued

Classification	July	August	September	October	November	December	Average, July to December
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to choice	*Dollars* 13.66	*Dollars* 13.83	*Dollars* 14.12	*Dollars* 14.32	*Dollars* 14.49	*Dollars* 15.35	*Dollars* 14.30
Heavy weight (92 lbs. up), medium to choice							
All weights, cull and common	10.51	10.98	11.26	11.92	12.06	12.66	11.56
Yearling wethers, medium to choice	10.63	10.72	10.71	11.20	11.23	12.04	11.09
Ewes—							
Common to choice	5.22	5.79	5.75	5.72	6.09	6.90	5.91
Canner and cull	2.17	2.50	2.52	2.72	2.91	3.26	2.68

FORT WORTH

Classification	January	February	March	April	May	June	Average January to June
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to prime	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
All weights, cull and common							
Yearling wethers, medium to prime							
Wethers (2 yrs. old and over), medium to prime	8.44	9.25	9.19	7.61	8.00	7.34	8.30
Ewes—							
Common to choice	7.10	7.92	8.00	6.23	5.50	5.08	6.64
Canner and cull	3.37	4.40	4.50	3.42	3.00	2.72	3.57
Feeding sheep and lambs:							
Feeding lambs, medium to choice		13.68	13.50				

Classification	July	August	September	October	November	December	Average July to December
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to choice	*Dollars* 11.99	*Dollars* 11.94	*Dollars* 12.52	*Dollars* 12.75	*Dollars* 13.08	*Dollars* 14.19	*Dollars* 12.74
All weights, cull and common	8.92	8.94	9.32	9.50	9.72	11.10	9.58
Yearling wethers, medium to choice	9.73	10.16	10.50	10.42	10.46	10.50	10.30
Ewes—							
Common to choice	5.08	5.71	6.25	6.25	6.25	6.25	5.96
Canner and cull	2.64	2.87	3.00	3.00	3.00	3.00	2.92
Feeding sheep and lambs:							
Feeding lambs, medium to choice							

TABLE 575.—*Sheep: Average price per 100 pounds at six markets, by months, 1925*—Continued

KANSAS CITY

Classification	January	February	March	April	May	June	Average January to June
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to prime	*Dollars* 16.67	*Dollars* 16.28	*Dollars* 15.64	*Dollars* 14.16	*Dollars* 12.02	*Dollars* 14.46	*Dollars* 14.87
All weights, cull and common	14.12	13.86	13.05	11.77	9.70	11.19	12.28
Spring lambs—							
Medium to choice					14.23		
Yearling wethers, medium to prime	13.80	13.59	12.94	11.25	9.94	10.76	12.05
Wethers (2 yrs. old and over), medium to prime	9.83	9.21	9.52	8.89	7.89	7.32	8.78
Ewes—							
Common to choice	8.61	7.78	8.22	7.59	6.44	5.32	7.33
Canner and cull	4.84	4.42	4.48	4.17	3.15	2.44	3.92
Feeding sheep and lambs:							
Feeding lambs, medium to choice	14.92						

Classification	July	August	September	October	November	December	Average July to December
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to choice	*Dollars* 14.09	*Dollars* 14.15	*Dollars* 14.30	*Dollars* 14.30	*Dollars* 14.50	*Dollars* 14.87	*Dollars* 14.37
All weights, cull and common	10.62	11.00	11.27	11.33	11.80	12.04	11.34
Yearling wethers, medium to choice	10.77	10.99	10.94	11.00	11.47	11.90	11.18
Ewes—							
Common to choice	5.73	5.96	6.03	6.34	6.38	6.90	6.22
Canner and cull	2.50	2.66	2.72	2.90	3.12	3.32	2.87
Feeding sheep and lambs:							
Feeding lambs, medium to choice			14.10	13.95	14.11		

OMAHA

Classification	January	February	March	April	May	June	Average January to June
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to prime	*Dollars* 16.68	*Dollars* 16.14	*Dollars* 15.48	*Dollars* 14.20	*Dollars* 12.37	*Dollars* 14.59	*Dollars* 14.91
Heavy weight (92 lbs. up), medium to prime			14.53	13.36	11.18		
All weights, cull and common	14.24	13.87	13.12	12.27	10.20	12.17	12.64
Spring lambs—							
Medium to choice					14.75		
Yearling wethers, medium to prime	13.88	13.80	12.87	10.79	9.18	11.90	12.07
Wethers (2 yrs. old and over), medium to prime	9.96	9.91	9.72	8.93	7.46	8.48	9.08
Ewes—							
Common to choice	8.62	7.76	8.38	7.45	6.28	5.35	7.31
Canner and cull	5.00	4.36	4.79	4.23	2.75	2.51	3.94
Feeding sheep and lambs:							
Feeding lambs, medium to choice	15.81	15.99	15.32	13.12			

TABLE 575.—*Sheep: Average price per 100 pounds at six markets, by months, 1925*—Continued

OMAHA—Continued

Classification	July	August	September	October	November	December	Average July to December
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to choice	*Dollars* 14.09	*Dollars* 14.08	*Dollars* 14.22	*Dollars* 14.32	*Dollars* 14.42	*Dollars* 15.31	*Dollars* 14.41
Heavy weight (92 lbs. up), medium to choice							
All weights, cull and common	11.67	11.94	11.86	11.77	12.04	13.00	12.05
Yearling wethers, medium to choice	11.18	10.78	10.64	10.70	10.90	11.76	10.99
Ewes—							
Common to choice	5.92	5.78	5.88	6.13	6.28	7.12	6.18
Canner and cull	3.01	2.75	2.80	2.88	2.89	3.70	3.00
Feeding sheep and lambs:							
Feeding lambs, medium to choice	13.18	14.03	14.30	14.48	14.79	14.98	14.29
Feeding ewes, medium to choice		5.48	6.43				

SOUTH ST. PAUL

Classification	January	February	March	April	May	June	Average January to June
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to prime	*Dollars* 16.24	*Dollars* 15.80	*Dollars* 15.12	*Dollars* 13.70	*Dollars* 11.86	*Dollars* 14.14	*Dollars* 14.48
Heavy weight (92 lbs. up), medium to prime			14.16	12.74	10.63		
All weights, cull and common	13.12	13.30	12.74	11.44	9.58	11.47	11.94
Spring lambs—							
Medium to choice					14.42		
Yearling wethers, medium to prime	13.73	13.44	12.58	10.50	9.26	11.03	11.86
Wethers (2 yrs. old and over), medium to prime	9.28	9.51	9.96	9.05	7.44	8.20	8.91
Ewes—							
Common to choice	7.70	7.50	7.76	6.87	6.08	5.04	6.82
Canner and cull	3.76	3.81	3.90	3.53	2.62	2.23	3.31
Feeding sheep and lambs:							
Feeding lambs, medium to choice	14.01						

Classification	July	August	September	October	November	December	Average July to December
Slaughter sheep and lambs:							
Lambs—							
Light and handy weight (84 lbs. down), medium to choice	*Dollars* 13.80	*Dollars* 13.51	*Dollars* 13.75	*Dollars* 13.86	*Dollars* 14.30	*Dollars* 14.86	*Dollars* 14.01
Heavy weight (92 lbs. up), medium to choice							
All weights, cull and common	11.09	11.38	11.30	11.30	11.35	11.91	11.39
Ewes—							
Common to choice	5.80	5.95	5.69	5.75	5.88	6.78	5.98
Canner and cull	2.58	2.72	2.62	2.62	2.68	3.00	2.70
Feeding lambs, medium to choice							

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.
Classification changed July 1, 1925.

TABLE 576.—*Sheep and lambs: Trend of average farm prices and average market prices, per 100 pounds, at Chicago, 1910–1925*

Year	Farm price		Average market price at Chicago		Price relatives (1913=100)			
					Farm price		Market price	
	Sheep, weighted average	Lambs, simple average	Sheep	Lambs	Sheep	Lambs	Sheep	Lambs
	Dollars	*Dollars*	*Dollars*	*Dollars*				
1910	5.08	6.40	5.26	7.59	113.9	105.8	101.3	98.7
1911	4.07	5.30	3.94	5.93	91.3	87.6	75.9	77.1
1912	4.20	5.60	4.60	7.18	94.2	92.6	88.6	93.4
1913	4.46	6.05	5.19	7.69	100.0	100.0	100.0	100.0
1914	4.79	6.31	5.56	7.99	107.4	104.3	107.1	103.9
1915	5.23	6.85	6.36	9.05	117.3	113.2	122.5	117.7
1916	6.27	8.19	7.82	10.77	140.6	135.4	150.7	140.1
1917	9.54	12.23	11.04	15.68	213.9	202.1	212.7	203.9
1918	10.82	13.98	12.44	16.98	242.6	231.1	239.7	220.8
1919	9.35	12.98	10.47	16.31	209.6	214.5	201.7	212.1
1920	8.11	11.94	9.49	15.47	181.8	197.4	182.9	201.2
1921	4.55	7.20	5.13	9.86	102.0	119.0	98.8	128.2
1922	5.96	9.70	7.15	13.68	133.6	160.3	137.8	177.9
1923	6.65	10.50	7.10	13.89	149.1	173.6	136.8	180.6
1924	6.80	10.72	7.57	14.57	152.5	177.2	145.9	189.5
1925	5.55	12.29	8.16	15.66	124.4	203.1	157.2	203.6

Division of Statistical and Historical Research. Farm prices from Division of Crop and Livestock Estimates; market prices from data of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 577.—*Sheep and lambs: Slaughter in the United States, by States, 1909, 1914 1919, 1921 and 1923* [1]

State	1909				1914 [2]	1919 [2]			1921 [2]	1923 [2]
	In wholesale slaughtering and meat-packing establishments	Retail slaughter	On farms and ranges	Total slaughter	In wholesale slaughtering and meat-packing establishments	In wholesale slaughtering and meat-packing establishments	On farms and ranges	Total wholesale and farm slaughter	In wholesale slaughtering and meat-packing establishments	In wholesale slaughtering and meat-packing establishments
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Calif.	1,071,998	228,012	35,915	1,335,925	1,427,250	1,198,079	20,283	1,218,362	1,536,027	1,607,538
Colo.	55,606	61,001	19,945	136,552	81,141	212,702	17,678	230,380	159,848	154,404
Ill.	3,802,142	23,509	4,284	3,919,935	4,882,940	4,358,564	4,376	4,362,940	3,681,302	2,879,624
Iowa	49,577	18,857	6,180	74,614	307,419	264,432	7,404	271,836	200,690	146,971
Kans.	1,136,027	5,504	2,399	1,143,930	1,559,114	1,200,980	4,692	1,205,672	1,309,424	1,146,361
Mass.	342,491	5,549	2,412	350,452	370,835	217,146	1,601	218,747	396,669	(4)
Mich.	88,285	76,129	17,818	182,232	125,537	193,345	10,232	203,577	162,880	202,035
Minn.	133,244	58,609	16,231	208,084	198,665	208,946	12,332	221,278	341,301	259,482
Mo.	546,649	11,194	7,461	565,304	776,751	742,156	8,207	750,363	823,609	827,471
Nebr.	1,127,962	1,763	1,753	1,131,478	1,797,072	1,575,954	3,160	1,579,114	1,598,563	1,653,143
N. J.	423,724	78,948	1,229	503,901	426,063	425,059	975	426,034	586,080	494,222
N. Y.	1,918,721	278,695	51,277	2,248,693	1,999,134	1,489,649	30,845	1,520,494	2,123,999	1,988,143
Ohio	229,985	134,824	16,754	381,563	300,337	258,291	10,778	269,069	307,385	235,500
Pa.	445,471	127,636	28,218	601,325	436,881	284,397	20,331	304,728	524,721	409,866
Tex.	77,805	19,598	9,396	106,799	284,050	151,285	9,159	160,444	148,604	158,973
Wash.	290,383	27,700	7,380	325,463	362,854	237,440	8,656	246,096	269,116	207,110
All other States	425,431	782,144	300,874	1,508,449	607,700	478,875	263,899	742,774	597,552	823,013
Total	12,255,501	1,939,672	529,526	14,724,699	15,943,743	13,497,300	434,608	13,931,908	14,767,770	13,193,856

Division of Statistical and Historical Research. Compiled from reports of the Bureau of the Census.

[1] In addition 795,519 sheep, lambs, goats, and kids were slaughtered for others in 1914 and 269,128 in 1919. No corresponding data for 1909, 1921, or 1923.

[2] No data collected by Bureau of the Census for 1914, 1921, or 1923 on farm or retail slaughter.

[3] No data obtainable for retail slaughter in 1919.

[4] Included in "all other States."

TABLE 578.—*Sheep and lambs: Monthly slaughter under Federal inspection, 1907–1925*

Year	January	February	March	April	May	June	July
1907	1,016,701	837,329	841,526	861,005	768,571	735,065	864,940
1908	871,642	724,857	677,048	663,624	731,785	841,716	891,112
1909	906,338	805,561	903,369	839,010	712,103	842,528	934,114
1910	903,242	770,796	726,675	692,897	795,699	926,900	967,378
1911	1,129,800	1,018,696	1,059,388	974,072	1,085,306	1,146,429	1,149,617
1912	1,383,239	1,151,431	1,105,620	970,574	962,679	1,028,426	1,181,246
1913	1,192,485	960,882	883,197	1,048,656	1,127,345	1,134,615	1,273,496
1914	1,296,625	1,112,500	1,143,188	1,149,928	1,084,577	1,113,437	1,171,105
1915	1,196,268	945,912	986,203	829,906	739,051	882,662	983,684
1916	976,417	903,755	861,470	768,683	854,014	989,824	930,169
1917	956,416	818,640	861,331	777,346	632,451	710,031	688,205
1918	779,934	655,015	735,595	613,814	659,063	737,298	869,403
1919	1,003,880	753,940	737,836	807,766	894,324	931,466	1,160,470
1920	954,607	828,426	787,867	713,796	670,674	817,553	1,048,428
1921	1,068,346	958,019	1,075,213	1,040,628	984,903	1,116,069	1,059,902
1922	954,329	775,841	837,216	739,117	872,069	1,028,136	964,109
1923	1,021,211	836,473	977,426	959,697	972,291	914,372	961,791
1924	1,083,095	911,988	868,398	859,774	959,300	975,366	1,050,734
1925	990,490	854,409	984,254	1,012,142	1,029,633	999,321	1,071,074

Year	August	September	October	November	December	Total
1907	900,462	891,953	972,656	793,155	768,707	10,252,070
1908	932,367	1,064,376	1,047,568	928,266	930,305	10,304,666
1909	1,018,698	1,153,327	1,169,232	1,028,673	999,684	11,342,637
1910	1,095,036	1,154,289	1,206,237	1,124,698	1,044,173	11,408,020
1911	1,268,405	1,256,948	1,428,228	1,303,770	1,199,787	14,020,446
1912	1,389,635	1,439,630	1,722,955	1,424,063	1,219,756	14,979,254
1913	1,243,440	1,486,305	1,513,922	1,257,546	1,283,870	14,405,759
1914	1,169,430	1,379,097	1,330,529	1,111,857	1,167,069	14,229,342
1915	1,139,236	1,219,649	1,116,002	1,132,499	1,040,693	12,211,765
1916	1,172,838	1,158,116	1,172,118	1,120,852	1,033,110	11,941,366
1917	765,939	740,122	821,933	763,781	808,799	9,344,994
1918	936,683	1,028,645	1,194,208	1,139,292	970,927	10,319,877
1919	1,233,883	1,291,979	1,413,805	1,227,190	1,234,577	12,691,113
1920	1,041,580	1,150,776	1,067,821	968,235	932,417	10,982,180
1921	1,236,992	1,249,032	1,285,430	1,040,390	889,980	13,004,904
1922	1,023,787	1,013,281	981,232	882,213	857,611	10,928,941
1923	956,580	989,560	1,046,239	915,229	977,681	11,528,550
1924	1,063,108	1,149,675	1,147,514	949,963	971,916	11,990,831
1925	1,030,751	1,085,837	1,083,073	878,892	981,118	12,000,994

Bureau of Animal Industry.

TABLE 579.—*Mutton and lamb, frozen: Cold-storage holdings, United States, 1916–1925*

[Thousand pounds—i. e., 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1916	4,976	5,286	5,812	5,084	3,858	2,525	1,939	2,098	2,135	2,579	3,465	5,000
1917	4,886	5,895	4,949	4,872	4,369	3,508	4,380	3,912	2,716	2,768	4,194	5,496
1918	7,403	6,315	7,855	5,599	3,348	3,860	2,429	3,150	4,046	5,275	8,645	9,035
1919	12,760	11,360	8,013	6,505	7,623	7,718	7,279	7,263	7,817	8,318	7,894	9,409
1920	10,290	7,787	5,781	3,517	2,579	5,735	4,311	2,299	11,021	25,325	48,997	56,702
1921	68,032	78,082	59,304	38,520	25,129	15,877	8,714	6,751	5,903	5,993	6,840	7,520
1922	6,444	3,914	2,863	2,878	2,071	2,310	3,720	3,308	3,376	3,473	3,458	3,633
1923	4,523	5,980	5,758	6,635	5,774	4,445	3,556	2,752	1,785	1,719	1,997	2,014
1924	2,493	2,306	2,173	1,719	2,093	2,273	2,917	2,257	2,230	2,525	3,166	3,326
1925	2,949	2,336	2,294	2,090	1,998	1,913	1,535	1,349	1,339	1,112	1,435	1,549
Av. 1921–1925	16,888	18,524	14,478	10,368	7,413	5,364	4,088	3,283	2,927	2,964	3,379	3,608

Cold Storage Report Section.

TABLE 580.—*Sheep, lamb, and mutton: Statement of the livestock and meat situation by months, 1925*

Item	Unit	Jan.	Feb.	Mar.	Apr.	May	June	July
Inspected slaughter	Thousands	991	854	984	1,012	1,030	969	1,071
Carcasses condemned	do	1	1	1	1	1	1	1
Average liveweight	Pounds	86	88	88	85	81	74	75
Averaged dressed weight	do	40	41	41	40	40	36	37
Total dressed weight (carcass, not including condemned)	1,000 pounds	39,655	34,910	40,572	40,609	40,698	36,417	39,374
Storage first of month, fresh lamb and mutton	do	2,949	2,336	2,294	2,090	1,998	1,913	1,535
Exports, fresh lamb and mutton [3]	do	73	57	135	66	119	268	295
Imports, fresh lamb and mutton	do	79	58	69	44	98	11	96
Receipts of sheep [4]	Thousands	1,467	1,388	1,504	1,541	1,689	1,603	1,699
Stocker and feeder shipments [4]	do	138	119	94	109	178	137	193
Price per 100 pounds:								
Average cost for slaughter	Dollars	15.98	16.16	15.34	13.36	13.37	13.63	13.50
At Chicago—								
Lambs, 84 pounds down, medium-prime	do	17.28	16.79	16.04	14.62	12.72	15.06	14.69
Sheep, medium-choice	do	9.76	9.20	9.70	8.68	7.52	7.34	7.48
At eastern markets—								
Lamb carcasses, good grade	do	27.27	26.94	25.63	23.64	24.66	27.02	27.17
Mutton, good grade	do	16.08	15.52	17.24	16.38	17.10	14.52	15.36
Sheep on farms, Jan. 1	Thousands	39,390						

Item	Unit	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Inspected slaughter	Thousands	1,031	1,086	1,083	879	981	12,001
Carcasses condemned	do	1	2	2	1	1	14
Average liveweight	Pounds	78	79	80	82	85	[1] 82
Average dressed weight	do	38	38	39	39	40	[1] 39
Total dressed weight (carcass, not including condemned)	1,000 pounds	38,869	40,994	41,701	34,049	39,468	467,316
Storage first of month, fresh lamb and mutton	do	1,349	1,339	1,112	1,435	1,549	[2] 1,825
Exports, Fresh lamb and mutton [3]	do	236	143	53	58	38	1,541
Imports, fresh lamb and mutton	do	55	427	962	647	224	2,770
Receipts of sheep [4]	Thousands	2,064	2,627	3,198	1,712	1,608	22,160
Stocker and feed shipments [4]	do	421	857	1,392	475	219	4,332
Price per 100 pounds:							
Average cost for slaughter	Dollars	13.41	13.45	13.79	13.71	14.72	[1] 14.22
At Chicago—							
Lambs, 84 pounds down, medium-prime	do	14.47	14.73	14.71	15.03	15.74	[2] 15.16
Sheep, medium-choice	do	6.83	6.95	7.64	8.16	9.57	[2] 8.24
At eastern markets—							
Lamb carcasses, good grade	do	26.15	26.46	26.16	27.92	27.78	[2] 26.40
Mutton, good grade	do	14.82	15.69	16.27	16.34	16.17	[2] 15.96
Sheep on farms, Jan. 1	Thousands						

Division of Statistical and Historical Research. Inspected slaughter from reports of Bureau of Animal Industry. Weights and storage holdings from reports of the Cold Storage Report Section; receipts, shipments, and prices compiled from data of the reporting service of the Division of Livestock, Meats, and Wool, and number on farm from Division of Crop and Livestock Estimates. Exports and imports from Bureau of Foreign and Domestic Commerce.

[1] Weighted average, not total.
[2] Simple average, not total.
[3] Including reexports.
[4] At public stockyards

TABLE 581.—*Mutton: International trade, average 1911–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended December 31							
	Average 1911–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina		148,457		180,103		178,784		184,311
Australia	7	149,958	[1] 34	[1]167,613	[1] 37	[1] 39,805		[1] 49,291
Canada	4,717	48	2,061	4,688	1,350	1,707	1,367	922
Netherlands	76	17,212	961	16,266	2,293	14,138	1,347	17,566
New Zealand		235,509		331,288		249,954		278,426
Union of South Africa	1,914	75	211	275	73	179	46	176
Uruguay		3,262		19,698		34,509		
PRINCIPAL IMPORTING COUNTRIES								
Belgium	([2])	([2])	2,246	534	2,013	318	2,976	1,829
Denmark	3,828	344	25	157	1,651	211	1,106	61
France	930	334	14,445	776	20,555	813	24,475	251
Germany	1,046	350	3,674	109	2,902	45	3,156	711
Hongkong			483		457	2	502	3
Sweden	1,218	100	594	808	422	167	651	105
United Kingdom	596,899		664,554		663,147		577,176	
United States	185	4,146	12,155	1,951	5,215	2,087	2,166	1,445
Other countries	924	489	1,133	18	973	352	1,811	128
Total	611,744	560,284	702,576	724,284	701,088	523,071	616,779	535,225

Division of Statistical and Historical Research. Official sources.

[1] Year beginning July 1. [2] Not separately stated.

WOOL

TABLE 582.—*Wool, raw: Production, imports, exports, and apparent consumption, United States, 1910–1925*

[Thousands of pounds—i. e., 000 omitted]

Year	Production			Imports [1]	Reexports [1]	Net imports	Exports of domestic wool	Excess of imports [1] over all exports	Apparent consumption
	Fleece	Pulled	Total						
1910	281,363	40,000	321,363	180,135	9,055	171,080	[2] 48	171,032	492,395
1911	277,548	41,000	318,548	155,923	3,511	152,412	([3])	152,412	470,960
1912	262,543	41,500	304,043	238,118	1,816	236,302	([4])	236,302	540,345
1913	252,675	43,500	296,175	151,814	3,860	147,954	[3] 77	147,877	444,052
1914	247,192	43,000	290,192	260,165	6,426	253,739	[3] 335	253,404	543,596
1915	245,726	40,000	285,726	412,721	2,098	410,623	[3] 8,158	402,465	688,191
1916	244,890	43,600	288,490	449,190	2,128	447,062	3,919	443,143	731,633
1917	241,892	40,000	281,892	420,995	1,421	419,574	1,827	417,747	699,639
1918	256,870	42,000	298,870	453,727	515	453,212	407	452,805	751,675
1919	249,958	48,300	298,258	445,893	5,689	440,204	2,840	437,364	735,622
1920	235,005	42,900	277,905	259,618	12,636	246,982	8,845	238,137	516,042
1921	223,062	48,500	271,562	320,666	1,605	319,061	1,927	317,134	588,696
1922	222,560	42,000	264,560	376,673	4,425	372,248	453	371,795	636,355
1923	224,330	42,500	266,830	394,250	24,188	370,062	535	369,527	636,357
1924	242,405	43,800	286,205	268,213	27,756	240,457	309	240,148	526,353
1925	254,260	46,800	301,060	329,352	7,168	322,184	273	321,910	622,970

Division of Livestock, Meats, and Wool. Production figures 1910–1913 from the National Association of Wool Manufacturers; 1914–1925 from the Division of Crop and Livestock Estimates; imports and exports from the Bureau of Foreign and Domestic Commerce.

[1] Imports and reexports include hair of camel, goat, alpaca, etc. Imports of hair not separately stated prior to July 1, 1913; since that date it has constituted less than 2 per cent of the total every year except 1915, when it was 2.4 per cent.

[2] Exports for fiscal years ending June 30 of the years shown.

[3] Included in all other articles.

[4] No transactions.

TABLE 583.—*Wool, fleece: Estimated production, by States, 1923–1925*

State	Production			Weight per fleece			Number of fleeces		
	1923	1924	1925 [1]	1923	1924	1925 [1]	1923	1924	1925 [1]
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*Pounds*	*Pounds*	*Pounds*	*Thousands*	*Thousands*	*Thousands*
Maine	567	542	554	6.3	6.3	6.6	90	86	84
New Hampshire	119	112	102	6.6	6.6	6.8	18	17	15
Vermont	275	273	286	6.4	6.5	6.8	43	42	42
Massachusetts	100	83	87	6.2	6.4	6.7	16	13	13
Rhode Island	20	19	20	6.5	6.4	6.7	3	3	3
Connecticut	44	48	58	5.5	6.0	7.2	8	8	8
New York	2,968	3,181	3,497	6.9	6.9	7.3	430	461	479
New Jersey	47	54	42	5.0	6.0	6.0	9	9	7
Pennsylvania	3,148	2,908	3,012	6.5	6.7	6.8	484	434	443
Ohio	14,313	13,899	14,685	7.3	7.3	7.5	1,961	1,904	1,958
Indiana	3,820	4,060	4,019	7.1	7.0	7.1	538	580	566
Illinois	3,290	3,625	4,930	7.6	7.6	7.9	433	477	624
Michigan	7,282	7,252	8,008	7.4	7.4	7.7	984	980	1,040
Wisconsin	2,271	2,190	2,340	7.4	7.3	7.8	307	300	300
Minnesota	2,225	2,599	3,294	7.5	7.6	7.9	297	342	417
Iowa	4,973	5,244	5,538	7.5	7.6	7.8	663	690	710
Missouri	5,411	6,700	5,996	7.0	6.7	6.9	773	1,000	869
North Dakota	1,648	1,778	2,248	8.0	7.9	8.0	206	225	281
South Dakota	4,021	4,275	4,350	7.6	7.5	7.5	529	570	580
Nebraska	1,738	1,668	1,666	7.9	7.8	8.0	220	214	208
Kansas	1,933	1,288	1,872	7.7	7.4	7.2	251	174	260
Delaware	13	16	17	5.5	5.5	5.7	2	3	3
Maryland	512	484	576	6.4	5.9	6.0	80	82	96
Virginia	1,622	1,656	1,633	4.8	4.9	4.6	338	338	355
West Virginia	2,600	2,496	2,538	5.2	5.2	5.2	500	480	488
North Carolina	397	385	348	4.9	5.2	4.7	81	74	74
South Carolina	103	94	62	4.5	4.5	4.4	23	21	14
Georgia	156	162	158	3.0	3.0	3.1	52	54	51
Florida	163	157	177	3.4	3.2	3.4	48	49	52
Kentucky	2,715	2,776	3,091	4.9	4.5	4.8	554	617	644
Tennessee	1,300	1,338	1,292	4.5	4.4	4.5	289	304	287
Alabama	227	285	165	3.6	3.7	3.3	63	77	50
Mississippi	454	376	349	3.2	3.3	3.2	142	114	109
Arkansas	320	328	360	4.7	4.5	5.0	68	73	72
Louisiana	385	366	304	3.4	3.7	3.3	113	99	92
Oklahoma	490	533	454	7.0	7.4	7.2	70	72	63
Texas	19,700	25,990	24,560	7.4	8.0	8.0	2,662	3,250	3,120
Montana	17,775	19,314	20,871	8.4	8.7	8.7	2,116	2,220	2,399
Idaho	15,455	16,800	17,347	8.1	8.0	8.3	1,908	2,100	2,090
Wyoming	19,520	19,760	22,360	8.0	8.0	8.6	2,440	2,470	2,600
Colorado	6,580	6,580	7,312	7.0	7.0	7.5	940	940	975
New Mexico	10,890	12,408	12,113	6.6	6.0	5.9	1,650	2,068	2,053
Arizona	5,798	6,240	6,400	6.5	6.0	6.4	892	1,040	1,000
Utah	17,210	16,884	18,040	7.9	8.2	8.8	2,178	2,059	2,050
Nevada	7,942	8,000	7,811	7.6	8.0	7.3	1,045	1,000	1,070
Washington	4,409	4,635	4,400	8.8	9.0	8.8	501	515	500
Oregon	13,200	15,688	16,720	9.0	9.1	8.8	1,467	1,724	1,900
California	14,181	16,856	17,850	7.2	7.3	7.5	1,970	2,309	2,380
United States	224,330	242,405	254,312	7.4	7.4	7.6	30,455	32,681	33,494

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 584.—*Wool: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended December 31							
	Average, 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria	2,445	19,871	2,925	16,266	4,007	21,541	2,751	18,740
Argentina	214	328,204	140	437,479	381	303,692	195	269,848
Australia	324	676,679	[1] 1,353	833,139	[1] 6,842	724,981	[1] [2] 164	559,396
Brazil	[2] 511	[3] 2,959	[2] 814	7,850	[2] 1,249	4,765	----------	7,377
British India	23,721	56,496	20,586	51,738	23,854	37,719	[4] 11,363	[4] 51,443
Chile	1,247	28,223	189	27,980	228	23,064	----------	19,520
China	----------	42,684	----------	77,792	----------	56,562	----------	74,206
Greece	281	294	586	1,439	613	749	1,387	1,241
Hungary	----------	----------	1,007	9,390	1,214	7,973	[2] 1,671	11,566
Irish Free State	----------	----------	----------	----------	----------	----------	1,381	19,717
Morocco	----------	8,607	----------	4,099	----------	14,540	----------	15,594
New Zealand	168	194,801	130	326,404	213	223,689	61	211,254
Persia	[5] 2,753	10,023	[2] 480	[2] 4,004	[2] 1,743	[2] 8,023	----------	----------
Peru	[3] 3	9,333	81	10,088	51	11,087	----------	13,861
Spain	2,446	28,505	5,044	13,449	3,104	14,214	[6] 1,335	[6] 10,236
Union of South Africa	7	164,633	51	235,576	201	179,475	70	188,261
Uruguay	----------	139,178	13	105,785	----------	96,951	----------	[2] 100,100
PRINCIPAL IMPORTING COUNTRIES								
Austria	----------	----------	16,961	5,575	19,084	1,894	15,734	1,722
Austria-Hungary	63,942	9,622	----------	----------	----------	----------	----------	----------
Belgium	300,367	196,440	194,617	77,138	169,775	57,598	161,226	55,817
Bulgaria	[3] 1,485	[3] 117	3,189	----------	5,441	----------	3,206	----------
Canada	7,794	1,323	15,907	7,159	21,099	6,318	15,389	6,320
Czechoslovakia	----------	----------	36,138	3,686	33,234	3,786	67,510	8,204
Denmark	2,337	1,124	1,782	319	3,357	342	2,444	582
Finland	1,794	30	3,935	13	3,093	[2] 54	3,257	[2] 7
France	601,628	84,973	681,514	47,479	579,280	46,062	498,587	38,691
Germany	481,988	42,817	422,265	16,012	293,667	19,275	326,274	25,529
Italy	30,145	3,933	85,253	9,402	77,170	5,208	78,325	6,020
Japan	10,223	----------	76,154	----------	69,455	----------	70,744	----------
Netherlands	31,991	26,362	14,777	3,829	12,573	4,665	12,557	2,727
Norway	3,644	123	4,309	163	3,453	534	2,718	717
Poland	----------	----------	60,442	1,153	42,325	835	36,308	2,680
Rumania	2,473	3,538	[2] 4,794	[2] 62	4,876	4	1,113	161
Russia	106,184	32,406	[2] 72	[2] 10,870	[2] 10,148	[2] 108	[2] 14,240	[2] 1,429
Sweden	7,267	149	11,166	163	11,447	265	10,625	276
Switzerland	11,211	338	15,102	246	15,894	186	14,227	161
United Kingdom	550,931	42,027	700,092	61,270	360,831	57,821	435,738	52,314
United States	203,298	[7] 46	376,673	453	394,250	535	268,213	309
Yugoslavia	----------	----------	[2] 3,439	[2] 11	11,986	[2] 313	10,051	[2] 116
Other countries	6,509	35,047	3,291	27,754	5,434	27,331	4,797	24,345
Total	2,459,331	2,190,905	2,765,271	2,435,235	2,191,372	1,962,159	2,073,661	1,800,487

Division of Statistical and Historical Research. Official sources except where otherwise noted. "Wools" in this table includes washed, unwashed, scoured, pulled wool, slipe, and all other animal fibers included in the United States classification of wool. The following items have been considered as not within this classification: Carded, combed, dyed wool, flocks; sheep, lamb, and goatskins with hair on, mill waste, noils, and tops.

[1] Year beginning July 1.
[2] International Institute of Agriculture.
[3] Four-year average.
[4] Twelve months' sea-trade, three months' land-trade
[5] Three-year average.
[6] Six months.
[7] One year only.

TABLE 585.—*Stocks of wool, tops, and noils held by dealers and manufacturers in United States, 1918–1925*

[Thousand pounds—i. e., 000 omitted]

Date	Held by dealers					Held by manufacturers				
	Grease	Scoured	Pulled	Tops	Noils	Grease	Scoured	Pulled	Tops	Noils
1918										
Jan. 1	156,639	27,849	12,229	4,642	7,565	172,342	29,912	9,627	18,677	13,567
Apr. 1	91,209	22,887	14,444	3,555	6,054	135,773	23,672	9,234	16,117	11,387
July 1	202,241	11,721	10,478	2,074	3,848	136,267	19,601	9,133	14,251	13,064
Oct. 1	219,659	12,926	10,701	347	3,655	101,900	16,236	8,449	12,288	12,467
1919										
Jan. 1	81,923	12,347	10,215	1,422	5,104	59,665	13,816	4,170	10,395	12,385
Apr. 1	28,690	7,952	5,984	898	2,823	72,637	13,654	6,663	10,962	10,381
July 1	198,298	22,155	10,108	1,801	2,577	150,239	16,117	9,179	11,388	9,820
Oct. 1	207,264	27,921	14,497	3,446	3,184	181,301	17,705	7,829	15,286	9,822
1920										
Jan. 1	152,003	24,630	17,907	4,735	3,893	152,089	20,030	6,302	13,875	7,316
Apr. 1	123,247	26,279	17,710	3,646	4,305	139,333	24,412	9,339	14,328	8,670
July 1	144,837	27,963	15,207	4,487	6,041	112,434	23,078	6,762	15,439	9,002
Oct. 1	179,376	29,988	11,229	5,564	4,754	79,762	15,612	7,593	15,839	9,124
1921										
Jan. 1	188,822	27,814	14,352	6,616	5,434	119,766	17,291	6,895	18,851	9,991
Apr. 1	194,891	22,807	15,505	7,623	3,690	165,398	18,442	11,296	19,325	9,316
July 1	176,584	19,703	12,127	4,883	4,139	164,713	18,042	10,787	20,247	8,101
Oct. 1	181,574	19,480	11,201	4,005	3,009	180,727	19,736	10,484	23,184	7,463
1922 [1]										
Jan. 1	102,384	13,468	9,222	2,866	2,453	171,597	21,097	9,312	17,536	7,136
Apr. 1	70,415	10,995	6,969	2,296	1,373	171,026	23,466	10,449	18,029	7,176
July 1	156,523	13,447	6,988	2,627	1,619	165,810	22,201	9,642	20,720	6,709
Oct. 1	176,377	16,521	7,384	3,327	2,695	191,351	20,736	8,686	19,227	5,904
1923 [1]										
Jan. 1	134,644	22,150	11,106	3,658	6,158	193,492	20,596	8,824	20,211	7,644
Apr. 1	126,158	24,734	13,503	5,378	6,378	175,422	24,787	11,930	18,402	8,247
July 1	186,729	21,075	13,126	5,125	5,977	161,435	18,464	11,148	16,579	8,384
Oct. 1	175,843	21,679	10,531	3,136	5,675	130,935	15,992	8,960	16,998	7,511
1924 [1]										
Jan. 1	144,014	16,665	7,700	2,988	3,783	121,173	16,947	8,971	16,543	7,206
Apr. 1	100,846	16,239	9,561	4,172	1,806	124,345	15,310	7,669	17,141	6,828
July 1	154,931	12,840	8,829	4,461	983	126,985	13,987	6,140	16,323	5,659
Oct. 1	132,953	12,544	7,475	3,869	1,994	129,330	15,165	6,747	16,562	4,867
1925 [1]										
Jan. 1	98,712	18,380	9,799	3,285	2,583	113,026	15,315	7,368	16,258	6,739
Apr. 1	65,912	16,819	12,624	2,754	2,412	95,122	13,437	7,025	15,921	6,020
July 1	147,654	15,039	11,267	2,571	3,292	95,021	16,455	7,381	15,252	5,463
Oct. 1	136,043	15,809	9,715	2,240	2,704	102,261	13,621	6,623	15,880	6,207

Division of Statistical and Historical Research. Compiled from Wool Stock Reports issued quarterly by the Bureau of Agricultural Economics and the Bureau of the Census. Stocks held by the Government are not included.

[1] Figures do not include estimates for firms not reporting.

TABLE 586.—*Wool: Estimated production in terms of grease, average 1909–1913 calendar years 1923–1925*

(Figures subject to revision)

[Thousand pounds—i. e., 000 omitted

Country	Average 1909–1913	1923	1924	1925 preliminary
Australia	727,709	590,546	676,681	[1] 711,000
Argentina	332,321	341,713	[2] 299,000	[3] 299,000
New Zealand	179,942	208,979	208,269	[4] 188,000
United States	313,648	266,830	286,205	301,080
Union of South Africa	156,436	182,904	187,879	[5] 200,000
United Kingdom	136,021	101,965	106,300	109,853
Uruguay	133,101	104,000	97,000	110,000
Total above countries	1,979,178	1,796,937	1,861,334	1,919,000
World, as estimated by United States Department of Commerce	3,231,000	2,719,000	2,806,442	2,892,416
World, as estimated by National Association of Wool Manufacturers	2,905,850	2,721,000		

Division of Statistical and Historical Research. Sources: Australia.—1909–1913 average production calendar years 1909–1911, and years ended June 30, 1913 and 1914. Years 1923 and 1924, Quarterly Summary Australian Statistics September, 1925. Year 1925, see note 1. Argentina.—1909–1913 exports plus estimated local consumption as taken from letter from Consul General W. Henry Robertson, Buenos Aires, Aug. 19, 1919, quoting La Prensa Aug. 18, 1919. Year 1923, Argentine Ministry of Agriculture, Mar. 20, 1924. Year 1924, see note 2. Year 1925, see note 3. New Zealand.—Years 1909–1913, 1923, and 1924, Dalgety & Co. Year 1925, see note 4. United States.—Division of Crop and Livestock Estimates. Union of South Africa.—Average, 1909–1913. Exports, Sept. 1 to Aug. 30, 1909–1910 to 1913–1914. Years 1923 and 1924, exports, Sept. 1 to Aug. 30. Year 1925, see note 5. United Kingdom.—Average, 1909–1913, calendar years. Year 1923, Yorkshire Observer Trade Review, 1924. Year 1924, estimate of Minister of Agriculture in letter from assistant trade commissioner Jan. 6, 1925, page 3. Year 1925, Yorkshire Observer. Uruguay.—Average 1909–1913 and 1922 exports. Year 1924, Commerce Reports, Sept. 7, 1925. Year 1925, using Commercial Attaché Lew B. Clark, Montevideo, Oct. 12, 1925, page 74. This estimate may be exceeded according to information received from Consul U. Grant Smith, Dec. 17, 1925. It may reach 125,000,000 pounds.

[1] Based on increase in receipts of Australian wool into store from Oct. 1 to Dec. 31, 1925, compared with preceding year and information furnished by Trade Commissioner Babbitt as to the weight per bale. This estimate may be too high as information from other sources state that it is not thought that last year's figures will be exceeded to any extent.

[2] Estimate based on 12 months exports October–September, stocks of unshipped wool on hand Sept. 24, 1925 and estimated home consumption.

[3] Estimated from information furnished by Commercial Attaché Feely stating that clip was about the same as last year.

[4] Estimate of Government statistician quoted by Vice Consul J. C. Hudson, Wellington, Feb. 2, 1926. The vice consul states that this is a little too high and is more likely to be 30,000,000 to 35,000,000 pounds less than last year.

[5] Estimate based on estimated increase over preceding year.

TABLE 587.—*Wool (unwashed): Estimated price per pound, received by producers United States, 1910–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Weighted average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1910	24.5	24.6	24.9	22.3	22.8	19.5	19.0	19.5	17.7	18.1	17.9	17.8	20.5
1911	17.3	17.3	16.8	15.7	14.7	15.5	15.4	16.0	15.6	15.5	15.6	15.5	15.6
1912	16.2	16.3	16.9	17.3	17.8	18.7	18.9	18.8	18.7	18.5	18.6	18.6	18.1
1913	18.6	18.7	18.4	17.7	16.3	15.6	15.9	15.8	15.8	15.5	15.6	16.1	16.4
Av. 1910–1913	19.2	19.2	19.2	18.2	17.9	17.3	17.3	17.5	17.0	16.9	16.9	17.0	17.6
1914	15.7	15.7	16.4	16.8	17.2	18.4	18.5	18.7	18.6	18.0	18.1	18.6	17.7
1915	18.6	20.2	22.8	22.7	22.0	23.7	24.2	23.8	23.3	22.7	22.7	23.3	22.8
1916	23.3	24.2	25.9	26.3	28.0	28.7	28.6	29.0	28.4	28.7	29.4	30.3	27.9
1917	31.8	32.7	36.7	38.8	43.7	49.8	54.3	54.8	54.2	55.5	55.9	58.2	47.8
1918	58.1	57.1	60.0	60.0	58.2	57.4	57.5	57.4	57.7	57.7	56.4	56.2	57.9
1919	55.2	51.1	51.3	47.9	48.0	50.5	51.8	52.2	51.3	50.6	51.0	51.6	50.3
1920	53.3	52.5	51.5	51.3	50.3	38.6	29.5	28.3	28.0	27.5	24.9	21.9	39.1
Av. 1914–1920	36.6	36.2	37.8	37.2	38.2	38.2	37.8	37.7	37.4	37.2	36.9	37.2	37.6
1921	19.6	19.8	18.9	17.9	16.0	15.4	15.5	15.4	15.5	15.8	15.6	16.9	16.4
1922	18.0	22.3	25.0	24.8	29.0	32.8	32.5	31.6	31.6	32.2	33.2	35.3	29.8
1923	35.3	35.3	37.3	39.2	41.7	41.5	38.3	37.0	37.1	36.9	36.4	36.2	38.9
1924	36.6	37.5	38.2	38.4	37.4	36.0	34.3	33.5	35.5	37.3	40.1	42.2	36.9
1925	42.8	43.2	43.0	40.8	36.9	35.7	39.4	38.1	37.8	37.2	37.8	39.5	38.5

Division of Crop and Livestock Estimates.

TABLE 588.—*Wool: Average price per pound, Boston market, 1910–1925*

TERRITORY—FINE STAPLE, SCOURED

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1910	$0.74	$0.73	$0.71	$0.68	$0.63	$0.61	$0.61	$0.62	$0.62	$0.63	$0.63	$0.63	$0.65
1911	.61	.59	.54	.53	.52	.52	.55	.56	.59	.60	.61	.61	.57
1912	.61	.61	.61	.61	.61	.61	.63	.68	.68	.68	.67	.67	.64
1913	.66	.64	.59	.56	.55	.54	.54	.54	.54	.53	.53	.52	.56
1914	.52	.56	.57	.59	.60	.61	.61	.63	.61	.59	.61	.61	.59
1915	.63	.73	.73	.71	.69	.71	.71	.71	.71	.71	.71	.73	.71
1916	.74	.77	.77	.79	.79	.81	.82	.85	.89	.89	.97	1.05	.84
1917	1.13	1.23	1.28	1.33	1.38	1.74	1.74	1.78	1.81	1.80	1.80	1.80	1.57
1918	1.80	1.80	1.83	1.85	1.80	1.80	1.85	1.80	1.80	1.85	1.80	1.80	1.82
1919	1.60	1.52	1.58	1.65	1.65	1.75	1.85	1.85	1.85	2.00	2.00	2.00	1.78
1920[1]	2.00	2.05	2.05	2.00	2.00	1.75	1.60	1.45	1.30	1.20	.95	.90	1.60
Av. 1914–1920	1.20	1.24	1.26	1.27	1.27	1.31	1.31	1.30	1.28	1.29	1.26	1.27	1.27
1921	.84	.90	.89	.88	.86	.82	.82	.82	.82	.82	.84	.88	.85
1922	.97	1.10	1.10	1.09	1.27	1.34	1.35	1.31	1.30	1.34	1.39	1.40	1.25
1923	1.43	1.44	1.44	1.49	1.53	1.50	1.44	1.37	1.32	1.30	1.30	1.34	1.41
1924	1.37	1.41	1.41	1.36	1.33	1.28	1.30	1.36	1.44	1.48	1.60	1.68	1.42
1925	1.67	1.65	1.58	1.42	1.24	1.31	1.37	1.31	1.28	1.32	1.32	1.30	1.40
Av. 1921–1925	1.26	1.30	1.28	1.25	1.25	1.25	1.26	1.23	1.23	1.25	1.29	1.32	1.27

Division of Statistical and Historical Research. 1910–1920 data from quarterly reports of the National Association of Wool Manufacturers. 1921–1924 data from Boston Commercial Bulletin, average of weekly range.

[1] Prices June-December, 1920, largely nominal.

TABLE 589.—*Wool, Territory, three-eighths blood combing, scoured: Average wholesale price per pound on Boston market, 1910–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1910	69	61	60	57	56	56	56	57	57	56	54	53
1911	54	54	52	49	49	50	50	52	52	48	46	48
1912	51	52	51	51	51	52	58	58	58	58	58	58
1913	58	58	55	50	49	48	48	48	48	47	46	45
1914	43	47	47	47	50	52	52	49	48	49	51	53
1915	56	63	66	66	66	66	66	68	68	68	67	69
1916	70	71	71	71	72	74	76	78	79	80	87	90
1917	91	100	102	110	118	132	132	138	146	148	148	148
1918	148	149	152	152	142	142	(1)	(1)	(1)	(1)	(1)	(1)
1919	126	121	121	110	118	120	128	137	138	127	130	135
1920	135	135	131	130	125	112	99	95	88	74	65	56
Av. 1914–1920	96	98	99	98	99	100	----	----	----	----	----	----
1921	53	55	55	54	53	50	51	52	52	52	54	58
1922	63	76	77	74	83	88	88	90	92	95	99	98
1923	100	103	105	107	111	111	109	105	103	101	104	108
1924	109	112	112	109	105	96	97	107	113	117	124	132
1925	132	131	125	110	92	100	102	102	102	102	110	109
Av. 1921–1925	91	95	95	91	89	89	89	91	92	93	98	101

Division of Statistical and Historical Research. Compiled from weekly quotations in Boston Commercial Bulletin.

[1] Not reported. Prices fixed by Government.

TABLE 590.—*Wool: Average price per pound, Boston market, 1900–1925*

[Ohio, Pennsylvania, and West Virginia, ⅜ blood—unwashed]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1900	29	28	27	27	26	25	25	24	24	24	23	24	26
1901	24	23	23	23	22	20	20	20	21	21	21	22	22
1902	22	22	22	22	22	22	22	22	22	23	23	24	22
1903	25	25	25	23	23	24	24	24	26	26	26	26	25
1904	25	26	26	26	26	28	28	28	29	29	31	32	28
1905	32	31	30	31	35	36	36	35	35	35	35	34	34
1906	34	33	33	33	33	33	33	33	33	34	34	34	33
1907	34	34	34	33	32	32	32	33	33	33	31	30	33
1908	31	31	30	29	25	26	25	25	26	26	27	28	27
Av. 1904–1908	31	31	31	30	30	31	31	31	31	31	32	32	31
1909	29	30	31	33	34	35	36	36	37	37	37	37	34
1910	37	37	36	34	31	28	28	28	28	29	29	29	31
1911	29	28	27	26	24	24	25	25	25	25	26	26	26
1912	27	28	28	28	28	28	29	30	31	31	31	31	29
1913	31	31	30	27	24	24	24	24	24	24	23	23	26
Av. 1909–1913	31	31	30	30	28	28	28	29	29	29	29	29	29
1914	23	23	24	24	26	27	28	28	27	27	29	30	26
1915	31	37	38	35	35	35	37	38	37	37	37	38	36
1916	39	40	40	40	40	40	41	42	42	41	44	49	42
1917	48	53	54	57	61	71	75	75	77	75	76	76	67
1918	77	77	80	78	76	76	78	76	76	78	76	76	77
1919	75	66	60	60	60	62	72	70	70	67	68	70	67
1920 [1]	70	70	70	66	61	54	50	45	43	40	32	30	53
Av. 1914–1920	52	52	52	51	51	52	54	53	53	52	52	53	53
1921	29	30	30	30	29	28	27	26	26	27	28	32	28
1922	37	41	41	39	43	48	47	47	48	50	54	54	46
1923	56	58	57	58	58	58	57	56	54	54	54	56	56
1924	56	58	58	57	53	49	50	54	58	61	64	71	57
1925	71	70	65	57	50	54	56	54	52	54	57	56	58
Av. 1921–1925	50	51	50	48	47	47	47	47	48	49	51	54	49

Division of Statistical and Historical Research. 1900–1920, from quarterly reports of the National Association of Wool Manufacturers; 1921–1925, from Boston Commercial Bulletin, average of weekly range.

[1] Prices June to December, 1920, are largely nominal.

TABLE 591.—*Wool: Average price per pound in England, 1909–1925*

LINCOLN HOGGETS [1]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	17. 5	18. 0	18. 0	18. 0	18. 0	19. 5	19. 5	19. 0	19. 5	19. 5	20. 0	20. 5	18. 9
1910	20. 0	21. 0	21. 0	21. 0	20. 5	19. 5	19. 0	20. 0	20. 0	20. 0	20. 0	20. 0	20. 2
1911	20. 0	20. 5	20. 5	20. 5	20. 2	20. 0	20. 0	20. 0	20. 0	20. 0	21. 0	20. 2	20. 2
1912	21. 3	20. 8	20. 8	20. 8	20. 3	20. 8	21. 3	21. 8	22. 3	22. 8	23. 2	23. 7	21. 7
1913	25. 4	25. 9	26. 4	26. 4	26. 4	26. 9	26. 9	27. 9	25. 8	25. 8	25. 8	25. 3	26. 2
Av. 1909–1913	20. 8	21. 2	21. 3	21. 3	21. 1	21. 3	21. 3	21. 7	21. 5	21. 6	22. 0	21. 9	21. 4
1914	25. 3	27. 3	27. 4	27. 4	27. 5	26. 5	25. 5	26. 0	25. 9	26. 8	28. 6	28. 4	23 9
1915	28. 5	34. 1	34. 5	35. 0	33. 4	35. 8	35. 7	33. 8	33. 7	34. 2	36. 0	36. 9	34. 3
1916 [2]	37. 6	37. 7	39. 7	39. 7	38. 7	37. 7	37. 7	37. 7	38. 7	39. 6	41. 6	43. 5	39. 2
1920	42. 8	39. 4	44. 0	45. 7	38. 5	34. 5	32. 1	33. 2	30. 7	27. 5	25. 7	20. 4	34. 5
1921	21. 9	21. 0	17. 9	17. 2	16. 6	13. 4	12. 5	13. 3	14. 0	14. 5	15. 7	15. 2	16. 1
1922	17. 2	17. 7	17. 8	18. 8	19. 5	20. 9	22. 2	22. 3	22. 2	22. 7	22. 3	23. 0	20. 6
1923	23. 8	24. 4	24. 5	24. 2	24. 1	24. 5	25. 8	25. 7	25. 5	25. 0	24. 2	24. 5	24. 7
1924	25. 3	30. 1	31. 3	31. 7	32. 7	33. 3	32. 8	34. 7	33. 8	37. 9	42. 3	47. 0	34. 2
1925	46. 8	45. 7	43. 8	42. 0	34. 4	29. 4	29. 4	30. 9	31. 3	33. 3	36. 3	35. 4	36. 5
Av. 1921–1925	27. 0	27. 8	27. 1	26. 8	25. 5	24. 3	24. 5	25. 4	25. 4	26. 7	28. 2	29. 0	26. 4

TABLE 591.—*Wool: Average price per pound in England, 1909–1925*—Continued

LINCOLN WETHERS[3]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1909	15. 5	16. 0	16. 0	16. 0	16. 0	16. 5	15. 5	16. 0	17. 0	17. 0	18. 0	18. 5	16. 5
1910	18. 5	20. 0	20. 0	19. 5	19. 0	18. 5	17. 5	19. 0	20. 0	19. 5	19. 0	20. 0	19. 2
1911	19. 7	20. 0	20. 2	20. 0	19. 5	19. 5	19. 5	19. 0	19. 0	19. 0	19. 5	19. 5	19. 5
1912	20. 2	20. 3	19. 8	19. 7	19. 5	19. 8	20. 8	21. 3	21. 8	22. 3	22. 7	23. 2	20. 1
1913	23. 8	25. 4	25. 9	25. 9	25. 8	25. 9	25. 4	24. 8	24. 8	24. 8	24. 8	24. 7	25. 2
Av. 1909–1913	19. 5	20. 3	20. 4	20. 2	20. 0	20. 0	19. 7	20. 0	20. 5	20. 5	20. 8	21. 2	20. 1
1914	24. 3	24. 8	25. 3	24. 9	24. 4	24. 4	23. 4	24. 0	24. 4	26. 8	28. 6	27. 4	25. 2
1915	27. 2	33. 1	33. 5	34. 0	33. 4	35. 8	35. 7	33. 8	33. 7	34. 2	36. 0	36. 9	33. 9
1916[2]	37. 6	37. 7	39. 7	39. 7	38. 7	37. 7	37. 7	37. 7	38. 7	39. 6	41. 6	43. 5	39. 2
1920	41. 3	38. 0	42. 5	42. 4	33. 7	32. 1	28. 1	26. 4	25. 6	21. 7	20. 0	17. 5	30. 8
1921	17. 2	16. 1	13. 0	12. 3	11. 6	9. 8	9. 8	10. 3	10. 5	11. 3	12. 0	11. 7	12. 1
1922	13. 2	13. 6	13. 7	13. 8	14. 4	14. 4	15. 2	15. 3	14. 3	14. 3	15. 4	17. 8	14. 6
1923	18. 4	19. 1	19. 1	18. 9	19. 3	19. 7	20. 1	20. 4	20. 3	20. 7	21. 9	23. 6	20. 1
1924	24. 8	29. 6	30. 4	30. 8	31. 8	32. 4	32. 3	33. 8	33. 4	36. 0	39. 4	44. 0	34. 5
1925	43. 8	46. 7	39. 8	37. 0	30. 3	26. 3	28. 3	29. 3	29. 3	31. 3	33. 3	32. 3	33. 7
Av. 1921–1925	23. 5	25. 0	23. 2	22. 6	21. 5	20. 5	21. 1	21. 8	21. 6	22. 7	24. 4	25. 9	23. 0

Division of Statistical and Historical Research. From the Yorkshire Observer "Trade Review" of 1922 for 1909–1922; subsequently from annual issues of that publication. Converted at par prior to 1912; after 1911, converted to cents per pound on the basis of the monthly average rate of exchange as given in Federal Reserve Bulletins.

[1] First shorn fleece, but not lambs' wool.
[2] Period of price control. Approximate issue prices: 1917, 50 cts.; 1918, 55 cts.; 1919, 46–48 cts.
[3] Includes all fleeces shorn after the first.

TABLE 592.—*Wool: Consumption in United States, by classes, 1918–1925*

[Thousand pounds—i. e., 000 omitted]

GREASE

Year	Combing		Clothing		Carpet		Total	
	Domestic	Foreign	Domestic	Foreign	Foreign combing	Foreign filling	Domestic	Foreign
1918	164, 878	217, 571	17, 845	17, 350	16, 414	15, 703	182, 723	267, 038
1919	192, 936	172, 346	20, 995	11, 869	24, 672	28, 747	203, 931	237, 634
1920	134, 824	172, 546	17, 914	11, 997	28, 356	28, 364	152, 738	241, 263
1921	159, 340	117, 704	20, 243	11, 134	22, 968	27, 291	179, 583	179, 097
1922	210, 142	87, 061	26, 750	8, 344	58, 797	51, 664	236, 892	205, 866
1923	111, 494	169, 540	17, 487	7, 072	72, 231	63, 215	128, 981	312, 058
1924	152, 960	81, 635	15, 483	3, 508	54, 042	60, 047	168, 443	199, 232
1925	135, 278	84, 598	15, 506	1, 586	56, 848	62, 037	150, 784	205, 069
Av. 1921–1925	153, 843	108, 108	19, 094	6, 329	52, 977	52, 851	172, 937	220, 264
1925								
January	14, 568	8, 119	1, 652	162	6, 298	5, 580	16, 220	20, 159
February	11, 994	7, 026	1, 544	152	5, 927	5, 380	13, 538	18, 485
March	10, 002	6, 835	1, 513	130	6, 374	6, 239	11, 515	19, 578
April	8, 496	6, 579	1, 188	112	6, 035	6, 352	9, 684	19, 078
May	7, 509	5, 952	1, 133	145	4, 794	5, 193	8, 642	16, 084
June	8, 168	6, 851	927	100	4, 090	4, 332	9, 095	15, 373
July	10, 361	6, 716	1, 129	112	4, 061	4, 985	11, 490	15, 874
August	12, 152	6, 005	1, 496	125	3, 809	5, 022	13, 648	14, 961
September	13, 072	6, 089	1, 355	152	4, 359	4, 710	14, 427	15, 310
October	13, 877	7, 622	1, 295	105	3, 818	4, 929	15, 172	16, 474
November	12, 021	7, 722	1, 227	133	3, 614	4, 880	13, 248	16, 349
December	13, 058	9, 082	1, 047	153	3, 669	4, 435	14, 105	17, 344

TABLE 592.—*Wool: Consumption in United States, by classes, 1918–1925*—Con.

[Thousand pounds—i. e., 000 omitted]

SCOURED

Year	Combing		Clothing		Carpet		Total	
	Domestic	Foreign	Domestic	Foreign	Foreign combing	Foreign filling	Domestic	Foreign
1918	11,033	16,623	30,466	64,846	1,177	2,777	41,499	85,423
1919	5,767	4,520	30,902	28,662	1,279	4,407	36,669	38,868
1920	5,906	5,492	30,263	22,828	1,359	5,643	36,169	35,322
1921	7,074	3,040	34,630	18,236	630	4,147	41,704	26,053
1922	8,374	2,753	47,547	19,347	1,285	5,410	55,921	28,795
1923	7,051	3,774	42,506	21,909	1,010	4,914	49,557	31,607
1924	5,804	3,409	40,718	16,089	533	3,122	46,522	23,153
1925	6,393	3,698	40,720	12,568	843	3,091	47,113	20,200
Av. 1921–1925	6,939	3,335	41,224	17,630	860	4,137	48,163	25,962
1925								
January	592	408	3,549	1,344	77	290	4,141	2,119
February	712	377	3,269	1,160	53	349	3,981	1,939
March	489	266	3,737	1,013	132	402	4,226	1,813
April	428	320	3,558	1,104	58	295	3,986	1,777
May	448	225	3,275	1,159	49	284	3,723	1,717
June	660	191	3,231	1,019	48	258	3,891	1,516
July	581	211	3,270	929	93	178	3,851	1,411
August	495	204	3,278	914	63	243	3,773	1,424
September	475	594	3,490	945	60	171	3,965	1,770
October	491	397	3,731	1,107	63	289	4,222	1,856
November	531	247	3,271	899	47	156	3,802	1,349
December	491	258	3,061	975	100	176	3,552	1,509

PULLED

1918	9,977	2,685	8,497	2,918	179	1,277	18,474	7,059
1919	9,707	537	8,809	944	321	2,224	18,516	4,026
1920	7,514	675	6,116	714	420	2,499	13,630	4,308
1921	9,445	1,125	11,024	1,052	1,149	2,680	20,469	6,006
1922	9,609	960	9,840	1,485	2,264	3,415	19,449	8,124
1923	8,052	1,923	8,315	2,080	2,884	5,409	16,367	12,296
1924	5,852	703	9,492	1,241	1,052	4,707	15,344	7,703
1925	6,165	1,728	9,071	895	2,351	6,640	15,236	11,614
Av. 1921–1925	7,825	1,288	9,548	1,351	1,940	4,570	17,373	9,149
1925								
January	473	52	805	44	215	313	1,278	624
February	468	205	690	61	110	380	1,158	756
March	363	230	728	171	176	344	1,091	921
April	514	36	908	128	111	552	1,422	827
May	387	34	872	79	201	407	1,259	721
June	633	103	702	80	151	500	1,335	834
July	752	68	712	49	184	405	1,464	706
August	623	106	737	61	195	637	1,360	999
September	384	82	788	35	232	860	1,172	1,209
October	617	180	695	75	245	831	1,312	1,331
November	512	387	752	57	225	746	1,264	1,415
December	439	245	682	55	306	665	1,121	1,271

Division of Statistical and Historical Research. Compiled from Wool Consumption Reports issued monthly by the Bureau of Agricultural Economics, January, 1918–April, 1922; and by the Bureau of the Census, May, 1922–December, 1925.

TABLE 593.—*Livestock: Receipts, local slaughter, and stocker and feeder shipments at all public stockyards in United States, 1915–1925*

[Thousands—i. e., 000 omitted]

Year	Cattle			Hogs			Sheep		
	Receipts	Local slaughter	Stocker and feeder shipments	Receipts	Local slaughter	Stocker and feeder shipments	Receipts	Local slaughter	Stocker and feeder shipments
1915	14,553	7,912	(1)	36,213	24,893	(1)	18,435	10,254	(1)
1916	17,676	10,294	3,847	43,265	30,984	194	20,692	11,228	3,277
1917	23,066	13,275	4,803	38,042	25,440	788	20,216	9,142	4,448
1918	25,295	14,874	5,013	44,863	30,441	989	22,485	10,266	5,208
1919	24,624	13,633	5,286	44,469	30,018	902	27,256	12,646	6,956
1920	22,197	12,194	4,102	42,121	26,761	728	23,538	10,981	5,180
1921	19,787	11,078	3,504	41,101	26,335	499	24,168	12,858	3,095
1922	23,217	12,435	4,929	44,067	28,737	593	22,364	10,669	4,167
1923	23,211	13,030	4,553	55,330	36,172	820	22,025	10,271	4,478
1924	23,695	13,850	3,966	55,414	35,188	497	22,201	10,399	4,679
1925	24,067	14,462	3,823	43,929	27,665	532	22,100	10,399	4,332

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Complete information for 1915 and 1916, particularly on disposition of stock, is not obtainable from many markets.

TABLE 594.—*Livestock: Number of animals slaughtered at Federal-inspected plants, 1907–1925*

Year ending June 30—	Cattle	Calves	Sheep	Goats	Swine	Horses	Total
1907	7,621,717	1,763,574	9,681,876	52,149	31,815,900		50,935,216
1908	7,116,275	1,995,487	9,702,545	45,953	35,113,077		53,973,337
1909	7,325,337	2,046,711	10,802,903	69,193	35,427,931		55,672,075
1910	7,962,189	2,295,099	11,149,937	115,811	27,656,021		49,179,057
1911	7,781,030	2,219,908	13,005,502	54,145	29,916,363		52,976,948
1912	7,532,005	2,242,929	14,208,724	63,983	34,966,378		59,014,019
1913	7,155,839	2,098,484	14,724,465	56,556	32,287,538		56,322,882
1914	6,724,117	1,814,904	14,958,834	121,827	33,289,705		56,909,387
1915	6,964,502	1,735,902	12,909,089	165,533	36,247,858		58,022,884
1916	7,404,288	2,048,022	11,985,926	180,356	40,482,799		62,101,391
1917	9,299,489	2,679,745	11,343,418	174,649	40,210,847		63,708,148
1918	10,938,287	3,323,077	8,769,498	149,503	35,449,247		58,629,612
1919	11,241,991	3,674,227	11,268,370	125,660	44,398,389		70,708,637
1920	9,709,819	4,227,558	12,334,827	77,270	38,981,914	1,089	65,332,477
1921	8,179,572	3,896,207	12,452,435	20,027	37,702,866	1,335	62,252,442
1922	7,871,457	3,924,255	11,968,434	13,758	39,416,439	1,898	63,196,241
1923	9,029,536	4,337,780	11,403,703	25,129	48,600,069	1,459	73,397,676
1924	9,188,652	4,667,948	11,505,001	31,279	54,416,481	4,699	79,814,060
1925	9,773,883	5,185,316	12,203,159	26,570	48,459,608	11,909	75,660,445

Bureau of Animal Industry.

TABLE 595.—*Livestock: Combined farm values, by States, Jan. 1, 1920–1926*

State	Cattle, hogs, and sheep			Horses and mules			Total (cattle, hogs, sheep, horses, and mules)			Rank in aggregate value	
	Average, 1920–1924	1925	1926	Average, 1920–1924	1925	1926	Average, 1920–1924	1925	1926	1925	1926
	Mill. dols.	*Mill. dols.*	*Mill. dols.*	*Mill. dols.*	*Mill. dols.*	*Mill. dols.*	*Mill. dols.*	*Mill. dols.*	*Mill. dols.*	*Order*	*Order*
Maine	15	12	14	12	10	10	27	22	24	42	42
New Hampshire	9	6	8	4	3	2	13	9	10	46	46
Vermont	24	19	23	9	7	6	33	26	29	39	40
Massachusetts	17	14	15	7	5	5	24	19	20	43	43
Rhode Island	3	2	2	1	1	1	4	3	3	48	48
Connecticut	13	11	13	5	4	4	18	15	17	45	45
New York	141	110	137	63	49	47	204	159	184	10	10
New Jersey	17	12	14	10	7	6	27	19	20	44	44
Pennsylvania	107	85	99	61	46	46	168	131	145	15	14
Ohio	148	126	138	79	57	58	227	183	196	9	9
Indiana	121	102	118	64	46	50	185	148	168	11	11
Illinois	195	176	204	110	84	86	305	260	290	3	3
Michigan	100	92	99	53	42	42	153	134	141	14	15
Wisconsin	183	159	192	68	55	55	251	214	247	6	6
Minnesota	164	162	191	74	65	65	238	227	256	5	4
Iowa	331	326	361	115	94	92	446	420	453	1	1
Missouri	163	127	145	88	60	60	251	187	205	8	7
North Dakota	54	51	57	52	41	41	106	92	98	17	16
South Dakota	115	107	112	46	36	35	161	143	147	12	13
Nebraska	182	181	196	68	59	60	250	240	256	4	5
Kansas	139	131	142	80	60	59	219	191	201	7	8
Delaware	3	3	3	3	2	2	6	5	5	47	47
Maryland	21	17	19	15	12	12	36	29	31	38	38
Virginia	48	37	37	39	28	25	87	65	62	25	28
West Virginia	33	26	27	17	12	11	50	38	38	37	37
North Carolina	41	28	28	57	46	44	98	74	72	22	22
South Carolina	25	15	13	43	30	29	68	45	42	35	35
Georgia	46	29	27	62	43	42	108	72	69	23	25
Florida	26	17	16	12	9	9	38	26	25	41	41
Kentucky	55	42	47	54	34	33	109	76	80	20	20
Tennessee	51	34	36	62	41	38	113	75	74	21	21
Alabama	35	22	21	46	33	35	81	55	56	30	30
Mississippi	38	20	22	50	38	37	88	58	59	27	29
Arkansas	33	20	22	45	30	29	78	50	51	32	33
Louisiana	29	19	18	36	24	23	65	43	41	36	36
Oklahoma	68	47	53	65	47	42	133	94	95	16	17
Texas	247	175	173	163	133	118	410	308	291	2	2
Montana	70	70	77	30	20	17	100	90	94	18	18
Idaho	51	47	55	19	11	12	70	58	67	29	26
Wyoming	55	54	64	8	6	6	63	60	70	26	24
Colorado	80	70	74	27	18	19	107	88	93	19	19
New Mexico	68	49	55	12	9	8	80	58	63	28	27
Arizona	50	37	43	10	8	6	60	45	49	34	34
Utah	38	39	46	9	7	7	47	46	53	33	31
Nevada	26	23	28	4	3	3	30	26	31	40	39
Washington	37	35	35	24	17	17	61	52	52	31	32
Oregon	53	51	56	22	16	15	75	67	71	24	23
California	136	112	129	39	30	28	175	142	157	13	12
United States	3,704	3,149	3,504	2,042	1,538	1,497	5,746	4,687	5,001	-------	-------

Division of Crop and Livestock Estimates.

TABLE 596.—*Meat and meat products*[1] *prepared under Federal inspection, 1907–1925*

[Thousand pounds—i. e., 000 omitted]

Year ending June 30—	Pork placed in cure	Sausage chopped	Canned meats	Lard	Lard compounds and substitutes	Oleo products	Oleomargarine	All other products	Total
1907	2,248,886	267,760	105,196	1,003,602	353,549	283,971	55,694	145,554	4,464,213
1908	2,875,997	416,200	92,582	1,433,778	436,448	293,425	79,380	330,487	5,958,298
1909	2,686,051	457,095	123,810	1,308,986	488,249	295,889	91,068	1,340,289	6,791,437
1910	2,216,680	485,864	127,263	948,468	671,526	296,429	139,158	1,338,576	6,223,964
1911	2,568,149	488,814	144,942	1,185,503	672,845	330,688	117,848	1,425,444	6,934,233
1912	2,633,752	523,893	153,871	1,309,140	648,443	297,038	128,319	1,585,103	7,279,559
1913	2,545,458	531,626	115,237	1,222,857	670,802	264,705	145,356	1,598,869	7,094,819
1914	2,568,335	542,017	120,473	1,187,963	590,409	274,625	143,999	1,605,475	7,033,296
1915	2,913,328	502,675	235,963	1,277,734	520,899	273,049	145,951	1,663,491	7,553,070
1916	2,922,381	565,047	164,200	1,277,870	397,089	237,047	152,388	1,708,972	7,474,994
1917	2,918,211	635,860	283,319	1,119,315	466,198	279,197	225,074	1,736,459	7,663,633
1918	3,132,549	624,827	468,633	943,851	453,164	263,630	265,335	1,743,196	7,905,185
1919	3,717,838	667,602	632,259	1,256,043	469,732	266,898	251,170	1,967,590	9,169,042
1920	2,903,854	682,521	211,521	1,316,918	328,567	364,992	217,561	1,749,224	7,755,158
1921	2,501,885	583,777	86,240	1,487,820	339,366	253,397	151,638	1,723,697	7,127,820
1922	2,725,031	568,626	109,481	1,659,331	312,014	268,034	118,197	1,666,402	7,427,116
1923	3,366,258	679,315	160,132	2,017,939	336,843	278,137	129,767	1,920,156	8,888,547
1924	3,502,368	707,323	183,026	2,110,660	363,320	259,008	142,881	2,136,254	9,404,840
1925	3,176,714	736,877	214,330	1,733,933	458,518	287,271	133,836	2,176,598	8,912,077

Bureau of Animal Industry.

[1] The above figures do not represent production, as a product may be inspected more than once in course of further manufacture.

TABLE 597.—*Livestock: Condemnation of animals and primal parts under Federal meat inspection, 1907–1925*

Year ended June 30—	Cattle		Calves		Sheep		Goats		Swine		Horses		Total	
	Carcasses	Parts	Carcasses	Parts	Carcasses	Parts	Carcasses	Parts	Carcasses	Parts	Carcasses	Parts	Carcasses	Parts
1907	27,933	93,174	6,414	245	9,524	296	42	.....	105,879	436,161	.....	.....	149,792	529,876
1908	33,216	67,482	5,854	396	8,090	198	33	1	127,933	636,589	.....	.....	175,126	704,666
1909	35,103	99,739	8,213	409	10,747	179	82	1	86,912	799,300	.....	.....	141,057	893,628
1910	42,426	122,167	7,524	500	11,127	24,714	226	1	52,439	726,829	.....	.....	113,742	874,211
1911	39,402	123,969	7,654	781	10,789	7,394	61	.....	59,477	877,528	.....	.....	117,383	1,009,672
1912	50,363	134,783	8,927	1,212	15,402	3,871	84	1	129,002	323,992	.....	.....	203,778	463,859
1913	50,775	130,139	9,216	1,377	16,657	939	76	1	173,937	373,993	.....	.....	250,661	506,449
1914	48,356	138,085	6,696	1,234	20,563	1,564	746	8	204,942	422,275	.....	.....	281,303	565,166
1915	52,665	178,409	6,380	1,750	17,650	298	658	14	222,605	464,217	.....	.....	299,958	644,988
1916	57,673	188,915	6,840	1,988	15,063	1,007	667	161	206,711	546,290	.....	.....	286,954	738,361
1917	78,773	249,637	10,168	2,927	16,758	413	1,351	42	164,682	528,288	.....	.....	271,732	781,307
1918	68,208	178,940	8,127	2,308	12,568	227	419	.....	116,943	347,006	.....	.....	206,265	528,481
1919	59,636	166,791	9,220	2,479	14,385	330	318	17	131,274	433,433	.....	.....	214,833	603,050
1920	58,621	194,058	13,820	2,866	20,031	627	135	1	135,477	550,580	64	4	228,148	748,436
1921	46,881	176,762	7,720	2,323	12,682	270	23	10	124,208	492,132	19	7	191,533	671,504
1922	55,188	166,935	11,409	2,376	10,488	496	30	21	162,926	697,393	30	.....	240,071	867,221
1923	73,330	176,332	11,824	2,383	13,325	292	81	4	199,689	832,317	14	1	298,263	1,011,329
1924	83,937	176,093	12,739	2,566	12,855	575	321	.....	236,879	1,179,301	36	.....	346,767	1,358,535
1925	92,073	189,581	11,122	2,837	12,707	396	114	.....	181,764	1,101,806	40	1	297,820	1,294,621

Bureau of Animal Industry.

TABLE 598.—*Livestock, cattle and calves: Causes of condemnation of carcasses, Federal meat inspection, 1907–1925*

CATTLE

Year ended June 30—	Actinomycosis (lumpjaw)	Bone diseases	Emaciation	Icterus (jaundice)	Immaturity	Injuries, bruises, etc.	Pneumonia, pleurisy, enteritis, hepatitis, nephritis, metritis, etc.	Septicemia, pyemia, and uremia	Tuberculosis	Tumors and abscesses	All other causes	Total
1907	661	(1)	(1)	(1)	-------	2,290	1,376	917	19,305	180	3,204	27,933
1908	667	(1)	(1)	125	-------	1,856	1,506	1,015	24,371	116	3,560	33,216
1909	589	(1)	(1)	60	-------	2,261	1,418	845	24,525	107	5,298	35,103
1910	527	(1)	6,476	74	-------	3,333	1,872	1,027	27,638	171	1,308	42,426
1911	547	(1)	4,492	49	-------	2,222	2,281	1,320	27,186	156	1,149	39,402
1912	726	(1)	5,722	40	-------	1,892	3,092	1,468	35,273	190	1,960	50,363
1913	380	(1)	6,575	73	-------	3,013	4,001	1,501	33,001	232	1,999	50,775
1914	430	(1)	6,697	55	-------	3,151	4,502	1,699	29,738	323	1,761	48,356
1915	598	(1)	6,360	34	-------	2,988	5,081	1,539	32,644	344	2,908	52,496
1916	1,200	(1)	7,122	60	-------	2,204	5,953	1,572	37,085	464	1,919	57,579
1917	1,204	(1)	14,254	45	-------	3,829	7,920	2,443	46,351	563	2,097	78,706
1918	391	(1)	12,492	40	-------	2,950	6,575	2,529	40,792	732	1,655	68,156
1919	350	(1)	8,043	71	-------	2,553	6,348	2,801	37,600	611	1,170	59,547
1920	556	(1)	7,652	61	-------	2,396	5,945	2,861	37,492	606	1,033	58,602
1921	591	(1)	2,313	97	-------	1,576	5,406	2,248	33,328	510	785	46,854
1922	786	45	2,767	84	-------	1,756	5,952	2,582	39,434	966	798	55,170
1923	785	139	4,895	103	-------	3,612	8,181	3,368	49,839	1,332	1,046	73,300
1924	658	77	6,609	123	-------	4,158	7,855	4,393	56,760	1,436	1,854	83,923
1925	1,097	141	7,010	104	-------	6,666	8,663	4,595	61,104	1,560	1,115	92,055

CALVES

1907	-------	(1)	(1)	(1)	3,535	464	656	234	68	62	1,345	6,414
1908	3	(1)	(1)	183	3,097	315	267	302	159	46	1,482	5,854
1909	-------	(1)	(1)	45	4,376	341	295	523	177	28	2,428	8,213
1910	1	(1)	1,762	43	3,472	499	346	309	184	35	873	7,524
1911	26	(1)	1,203	31	3,533	373	525	440	204	27	1,292	7,654
1912	7	(1)	1,574	37	4,511	429	841	326	276	17	909	8,927
1913	3	(1)	2,301	26	3,848	684	920	266	450	20	698	9,216
1914	9	(1)	1,295	35	2,297	542	626	253	407	22	1,210	6,696
1915	12	(1)	760	28	2,352	425	757	249	440	28	890	5,941
1916	16	(1)	1,438	67	1,501	380	1,385	296	687	29	882	6,681
1917	10	(1)	2,855	51	1,851	478	2,868	390	656	25	928	10,112
1918	21	(1)	2,041	57	1,749	402	1,678	879	477	52	753	8,109
1919	30	(1)	1,971	91	3,131	449	1,503	580	508	49	890	9,202
1920	13	(1)	3,106	132	6,224	553	1,764	687	545	29	767	13,820
1921	45	(1)	1,285	129	2,825	375	1,234	733	553	78	446	7,703
1922	27	55	2,009	130	5,087	405	1,574	553	659	104	805	11,408
1923	45	161	1,796	127	4,257	697	2,310	926	747	63	686	11,815
1924	30	102	2,185	136	4,661	894	2,321	1,260	634	56	457	12,736
1925	17	94	2,059	152	3,629	1,048	1,964	980	708	41	396	11,088

Bureau of Animal Industry.

[1] Included in "All other causes."

TABLE 599.—*Livestock, sheep and hogs: Causes of condemnation of carcasses, Federal meat inspection, 1907–1925*

SHEEP

Year ended June 30—	Bone diseases	Caseous lymphadenitis	Emaciation	Icterus (jaundice)	Injuries, bruises, etc.	Pneumonia, pleurisy, enteritis, hepatitis, nephritis, metritis, etc.	Septicemia, pyemia, and uremia	Tuberculosis	Tumors and abscesses	All other causes	Total
1907	(1)	1,360	(1)	(1)	793	1,093	779	----------	402	5,097	9,524
1908	(1)	1,034	(1)	869	647	1,100	588	8	105	3,739	8,090
1909	(1)	1,023	(1)	862	763	1,479	676	21	102	5,821	10,747
1910	(1)	1,122	5,376	909	657	1,572	539	----------	164	788	11,127
1911	(1)	1,078	5,038	939	621	1,838	705	1	131	438	10,789
1912	(1)	1,597	7,542	1,308	725	2,614	780	3	122	711	15,402
1913	(1)	2,340	5,586	1,881	1,150	3,650	876	1	106	1,067	16,657
1914	(1)	4,695	6,425	1,898	934	4,463	1,041	4	119	984	20,563
1915	(1)	4,367	4,318	1,351	732	5,344	694	6	67	732	17,611
1916	(1)	3,190	3,593	1,324	627	4,983	576	----------	89	675	15,057
1917	(1)	2,672	5,531	1,256	572	5,479	641	3	118	477	16,749
1918	(1)	1,566	4,979	762	278	4,000	638	----------	98	243	12,564
1919	(1)	1,481	5,148	1,488	435	4,789	557	12	96	365	14,371
1920	(1)	2,050	9,485	1,216	582	5,313	879	17	141	345	20,028
1921	(1)	1,089	3,520	1,594	628	4,448	827	12	153	395	12,666
1922	107	740	2,195	1,247	734	3,984	766	3	202	498	10,476
1923	288	950	2,240	2,079	560	5,480	1,101	8	138	473	13,317
1924	281	876	2,811	1,715	602	4,730	1,314	13	152	350	12,853
1925	227	1,165	3,040	1,329	678	4,738	1,047	----------	140	337	12,701

SWINE

		Emaciation	Hog cholera								
1907	(1)	(1)	21,506	(1)	592	4,540	5,545	65,618	1,483	6,595	105,879
1908	(1)	(1)	27,234	1,784	354	6,846	7,076	77,584	1,280	5,775	127,933
1909	(1)	(1)	20,789	1,623	372	6,329	7,173	45,113	1,178	4,335	86,912
1910	(1)	932	7,677	1,248	383	4,502	5,561	28,882	932	2,322	52,439
1911	(1)	690	10,721	1,594	412	4,601	6,056	31,517	1,086	2,800	59,477
1912	(1)	1,568	56,931	2,975	728	8,997	8,607	42,267	1,654	5,275	129,002
1913	(1)	1,256	88,547	3,242	1,046	14,115	10,228	47,630	1,715	6,158	173,937
1914	(1)	914	116,107	3,075	1,197	17,011	11,738	48,252	2,179	4,469	204,942
1915	(1)	904	101,953	2,624	1,086	21,540	13,184	66,023	1,811	4,780	213,905
1916	(1)	949	64,464	3,090	1,360	20,671	14,122	74,109	2,185	14,157	195,107
1917	(1)	1,081	33,450	2,697	1,332	18,920	13,734	76,807	1,548	8,911	158,480
1918	(1)	544	20,967	2,109	698	15,363	9,810	59,740	1,158	2,690	113,079
1919	(1)	728	23,928	2,824	725	19,079	10,761	65,838	1,317	3,605	128,805
1920	(1)	966	23,789	3,385	847	22,306	11,652	65,609	1,493	3,429	133,476
1921	182	745	16,693	4,002	1,003	18,822	11,014	64,830	1,793	3,525	122,609
1922	2,928	756	32,562	4,619	1,461	23,852	15,405	70,304	2,197	6,049	160,133
1923	6,101	1,331	28,815	6,154	1,723	31,776	21,333	88,688	3,199	7,205	196,325
1924	7,652	1,316	44,725	5,971	1,861	33,470	24,907	100,110	4,314	8,254	232,670
1925	8,012	1,169	19,001	4,397	1,277	26,211	23,841	86,282	3,366	6,871	180,427

Bureau of Animal Industry.

[1] Included in "All other causes."

TABLE 600.—*Meats and lard: Consumption, 1907–1925*

Calendar year	Consumption								Percentage of total consumption					
	Beef	Veal	Total, beef and veal	Lamb and mutton	Pork	Total meats[1]	Lard	Total, meats and lard	Beef	Veal	Total, beef and veal	Lamb and mutton	Pork	Total meats
	Million lbs.	*Million lbs.*	*Million lbs.*	*Million lbs.*	*Million lbs.*	*Million lbs.*	*Million lbs.*	*Million lbs.*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1907	6,780	644	7,424	558	6,624	14,612	1,055	15,667	46.4	4.4	50.8	3.8	45.3	100.0
1908	6,367	627	6,994	557	6,981	14,537	1,154	15,691	43.8	4.3	48.1	3.8	48.0	100.0
1909	6,835	683	7,518	601	6,100	14,230	1,042	15,272	48.0	4.8	52.8	4.2	43.0	100.0
1910	6,561	686	7,247	596	5,881	13,735	1,052	14,787	47.8	5.0	52.8	4.3	42.8	100.0
1911	6,342	656	6,998	729	6,763	14,494	1,063	15,557	43.8	4.5	48.3	5.0	46.7	100.0
1912	5,807	667	6,474	773	6,570	13,825	1,068	14,893	42.0	4.8	46.8	5.6	47.5	100.0
1913	5,852	487	6,339	725	6,797	13,869	1,100	14,969	42.2	3.5	45.7	5.2	49.0	100.0
Av. 1909–1913	6,279	636	6,915	685	6,422	14,031	1,065	15,096	44.7	4.5	49.2	4.9	45.8	100.0
1914	5,722	437	6,159	724	6,812	13,714	1,192	14,906	41.7	3.2	44.9	5.3	49.7	100.0
1915	5,414	428	5,842	622	6,668	13,149	1,281	14,430	41.2	3.3	44.5	4.7	50.7	100.0
1916	5,639	536	6,175	613	6,848	13,658	1,368	15,026	41.3	3.9	45.2	4.5	50.1	100.0
1917	6,083	662	6,745	473	5,704	12,940	1,195	14,135	47.0	5.0	52.0	3.7	44.1	100.0
1918	6,522	765	7,287	486	6,534	14,322	1,374	15,696	45.5	5.3	50.8	3.4	45.6	100.0
1919	6,474	808	7,282	607	6,629	14,528	1,292	15,820	44.6	5.5	50.1	4.2	45.6	100.0
1920	6,713	814	7,527	588	7,318	15,438	1,416	16,854	43.5	5.3	48.8	3.8	47.3	100.0
Av. 1914–1920	6,081	636	6,717	588	6,645	13,964	1,303	15,267	43.5	4.6	48.1	4.2	47.6	100.0
1921	6,171	751	6,922	639	7,792	15,354	1,223	16,577	40.2	4.9	45.1	4.2	50.7	100.0
1922	6,643	797	7,440	545	8,270	16,257	1,558	17,815	40.9	4.9	45.8	3.4	50.8	100.0
1923	6,859	872	7,722	576	9,531	17,832	1,707	19,539	38.4	4.9	43.3	3.2	53.4	100.0
1924	6,993	935	7,928	589	9,669	18,189	1,749	19,938	38.4	5.0	43.4	3.2	53.3	100.0
1925	7,166	1,004	8,170	597	8,749	17,520	1,523	19,043	40.9	5.7	46.6	3.4	50.0	100.0
Av. 1921–1925	6,765	872	7,637	589	8,802	17,030	1,552	18,582	39.7	5.1	44.8	3.5	51.7	100.0

Bureau of Animal Industry. Based on carcass weights. Edible offal not included.

[1] Includes small quantity of goat meat.

TABLE 601.—*Meats and lard: Annual per capita consumption, 1907–1925*

Calendar year	Beef	Veal	Lamb and mutton	Pork, not including lard	Total meat[1]	Lard	Total meat and lard
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
1907	77.5	7.4	6.4	75.7	167.1	12.1	179.2
1908	71.5	7.0	6.3	78.4	163.3	12.9	176.2
1909	75.4	7.5	6.6	67.3	157.0	11.5	168.5
1910	71.1	7.4	6.5	63.7	148.9	11.4	160.3
1911	67.7	7.0	7.8	72.2	154.8	11.3	166.1
1912	61.1	7.0	8.1	69.1	145.4	11.2	156.6
1913	60.6	5.0	7.5	70.4	143.6	11.4	155.0
Average, 1909–1913	67.2	6.8	7.3	68.5	149.9	11.4	161.3
1914	58.4	4.4	7.4	69.6	140.0	12.2	152.2
1915	54.5	4.3	6.3	67.1	132.4	12.9	145.3
1916	56.0	5.3	6.1	68.0	135.6	13.6	149.2
1917	59.5	6.5	4.6	55.8	126.6	11.7	138.3
1918	63.0	7.4	4.7	63.1	138.4	13.3	151.7
1919	61.6	7.7	5.8	63.1	138.3	12.3	150.6
1920	63.1	7.6	5.5	68.8	145.1	13.3	158.4
Average, 1914–1920	59.4	6.2	5.8	65.1	136.6	12.8	149.4
1921	57.2	7.0	5.9	72.3	142.4	11.3	153.7
1922	60.8	7.3	5.0	75.7	148.8	14.3	163.1
1923	61.9	7.9	5.2	86.1	161.1	15.4	176.5
1924	62.4	8.3	5.3	86.3	162.3	15.6	177.9
1925	63.1	8.8	5.3	77.1	154.3	13.4	167.7
Average, 1921–1925	61.1	7.9	5.3	79.5	153.8	14.0	167.8

Bureau of Animal Industry. Based on carcass weights. Edible offal not included.

[1] Includes small quantity of goat meat.

TABLE 602.—*Livestock slaughter statistics: Sources of supply, classification slaughter costs, weights and yields, 1922–1925* [1]

CATTLE

Year and month	Medium of obtaining supply		Sex classification			Average live cost per 100 pounds	Average live weight	Dressed weight as percentage of live weight	By-product yield (on basis of live weight)		
	Stockyards	Other sources	Bulls and stags	Cows and heifers	Steers				Edible fat [2]	Edible offal	Hides
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Dollars*	*Pounds*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1922											
July	88.90	11.10	5.10	35.60	59.30	7.36	985.46	54.60	4.02	2.95	6.64
August	89.13	10.87	4.03	40.16	55.81	6.94	972.85	54.05	3.73	2.85	6.73
September	89.63	10.37	4.27	43.84	51.89	6.53	965.37	53.29	3.46	2.84	6.68
October	88.29	11.71	4.34	50.99	44.67	6.09	957.77	52.32	3.15	2.83	6.79
November	91.40	8.60	4.36	51.93	43.71	5.63	946.17	51.84	3.11	2.72	6.81
December	92.26	7.74	4.10	49.85	46.05	6.07	957.52	52.68	3.57	2.81	6.76
1923											
January	91.89	8.11	3.51	49.58	46.91	6.58	979.66	54.00	4.09	2.77	6.67
February	91.13	8.87	4.80	44.18	51.02	6.89	973.54	54.80	4.28	2.90	6.71
March	90.45	9.55	3.18	42.57	54.25	7.19	973.12	55.08	4.38	2.92	6.70
April	91.15	8.85	2.82	47.54	49.64	7.51	970.54	55.51	4.48	2.85	6.74
May	90.27	9.73	6.70	37.51	55.79	7.82	949.66	55.79	4.26	2.85	6.71
June	88.12	11.88	3.89	37.41	58.70	7.90	955.28	55.01	4.18	2.84	6.75
July	83.31	16.69	4.46	43.18	52.36	7.26	942.18	53.99	3.78	2.80	6.73
August	88.12	11.88	3.91	48.29	47.80	7.03	933.38	53.97	3.42	2.74	6.82
September	92.12	7.88	4.58	49.52	45.90	6.59	939.07	53.38	3.75	2.79	6.87
October	91.28	8.72	3.63	54.40	41.97	6.01	940.04	52.79	3.21	2.82	6.73
November	88.27	11.73	4.17	61.19	34.64	5.64	933.51	53.83	3.12	2.77	6.98
December	88.76	11.24	3.29	54.78	41.93	6.23	952.37	52.39	3.54	2.56	6.94
1924											
January	90.11	9.89	3.16	51.68	45.16	6.65	965.94	53.16	3.84	2.85	6.95
February	88.70	11.30	3.39	50.40	46.21	6.67	966.46	53.94	3.94	2.86	6.84
March	88.41	11.59	5.39	46.99	47.62	7.14	967.21	54.09	4.13	2.93	6.71
April	91.43	8.57	5.28	42.25	52.47	7.57	962.00	54.35	4.19	2.86	6.71
May	90.09	9.91	4.71	38.77	56.52	7.92	948.28	55.17	4.33	2.88	6.79
June	89.81	10.19	3.52	40.35	56.13	7.40	951.14	54.94	4.29	2.89	6.76
July	91.13	8.87	3.01	41.98	55.01	7.19	940.28	54.96	4.21	2.82	6.82
August	91.23	8.77	4.04	44.86	51.10	7.06	951.55	54.35	3.98	2.76	6.73
September	91.41	8.59	5.28	50.33	44.39	6.33	938.80	53.51	3.74	2.87	6.79
October	92.23	7.77	5.38	56.97	37.65	5.75	938.68	52.32	3.40	2.81	6.80
November	91.08	8.92	3.22	62.61	34.17	5.34	932.89	51.06	3.30	2.90	6.77
December	91.73	8.27	2.61	57.19	40.20	5.66	947.26	51.88	3.47	2.77	6.89
1925											
January	91.99	8.01	2.55	52.01	45.44	6.51	974.82	53.41	3.89	2.77	6.89
February	90.14	9.86	2.92	49.71	47.37	6.87	976.97	53.96	3.98	2.90	6.83
March	90.93	9.07	2.91	48.86	48.23	7.67	970.57	54.10	4.07	2.94	6.74
April	90.28	9.72	5.10	39.87	55.03	8.20	976.82	55.02	4.21	2.96	6.64
May	89.25	10.75	3.72	39.49	56.79	8.16	966.45	54.81	4.20	2.82	6.62
June	88.72	11.28	3.90	43.83	52.27	7.86	952.90	53.92	3.86	2.91	6.65
July	90.38	9.62	3.65	45.97	50.38	7.55	946.43	53.04	3.47	2.95	6.73
August	91.93	8.07	3.39	53.24	43.37	6.94	938.38	52.43	3.18	2.92	6.70
September	91.69	8.31	3.30	53.07	43.63	6.86	926.09	52.76	3.20	3.02	6.86
October	92.06	7.94	3.12	60.75	36.13	6.36	939.78	51.70	3.15	3.01	6.77
November	88.86	11.14	3.15	62.95	33.90	6.18	938.68	51.00	3.11	3.02	6.88
December	91.35	8.65	2.99	58.14	38.87	6.80	953.77	51.94	3.46	2.98	6.89

TABLE 602.—*Livestock slaughter statistics: Sources of supply, classification slaughter costs, weights and yields, 1922–1925*—Continued

CALVES

Year and month	Medium of obtaining supply		Average live cost per 100 pounds	Average live weight	Dressed weight as percentage of live weight	By-product yields (on basis of live weight)	
	Stockyards	Other sources				Edible fat [1]	Edible offal
1922	*Per cent*	*Per cent*	*Dollars*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
July	85.60	14.40	7.85	171.57	56.92	0.65	3.71
August	83.89	16.11	8.02	192.72	56.55	.71	3.33
September	85.93	14.07	7.69	199.71	55.46	.75	3.33
October	89.13	10.87	6.96	197.18	53.46	.74	3.37
November	88.76	11.24	7.18	188.61	56.41	.68	3.50
December	88.96	11.04	7.79	176.09	57.71	.70	3.78
1923							
January	89.49	10.51	8.51	168.42	59.09	.72	4.14
February	89.15	10.85	9.34	162.67	59.44	.65	3.98
March	86.03	13.97	8.80	148.83	59.23	.65	4.12
April	86.99	13.01	7.98	141.78	57.88	.62	4.25
May	85.73	14.27	8.97	146.39	56.19	.57	3.78
June	82.41	17.59	8.24	161.85	57.78	.62	3.81
July	82.71	17.29	8.60	176.77	57.46	.50	3.05
August	82.91	17.09	7.53	195.99	56.08	.85	3.34
September	88.36	11.64	7.30	204.48	54.78	1.10	2.78
October	87.50	12.50	6.94	199.69	55.68	.88	3.25
November	86.58	13.42	6.39	189.37	57.34	.84	3.36
December	85.46	14.54	7.19	181.29	57.46	.73	3.40
1924							
January	88.47	11.53	8.29	176.80	58.68	.76	3.67
February	87.46	12.54	9.45	162.63	57.16	.73	3.97
March	86.41	13.59	8.85	152.08	60.63	.71	4.08
April	86.83	13.17	8.49	146.92	60.59	.68	4.02
May	86.25	13.75	8.19	157.40	60.64	.72	3.80
June	85.11	14.89	7.68	167.98	57.48	.73	3.93
July	86.51	13.49	7.61	181.40	56.60	.77	3.56
August	83.72	16.28	7.42	197.19	55.49	.77	3.30
September	86.96	13.04	7.23	201.45	56.22	.79	3.29
October	89.04	10.96	6.81	196.39	55.20	.78	3.33
November	87.92	12.08	6.24	197.60	54.28	.75	3.35
December	89.10	10.90	7.15	183.47	57.03	.77	3.58
1925							
January	89.25	10.75	8.52	176.38	57.46	.70	3.94
February	87.86	12.14	9.39	168.82	57.33	.66	4.00
March	87.42	12.58	9.64	156.41	59.50	.64	3.96
April	89.19	10.81	8.70	145.58	58.86	.63	4.03
May	85.74	14.26	8.69	153.29	58.38	.63	3.91
June	84.61	15.39	8.26	166.49	56.99	.67	3.74
July	87.76	12.24	8.08	184.18	56.31	.74	3.58
August	87.31	12.69	8.63	197.02	56.25	.75	3.37
September	83.94	16.06	8.80	197.55	56.29	.79	3.35
October	87.44	12.56	8.55	201.42	57.72	.78	3.38
November	86.85	13.15	8.22	188.67	59.25	.75	3.63
December	87.78	12.22	8.75	182.03	56.54	.76	3.58

[1] Unrendered.

TABLE 602.—*Livestock slaughter statistics: Sources of supply, classification slaughter costs, weights and yields, 1922–1925*—Continued

SWINE

Year and month	Medium of obtaining supply		Sex classification			Average live cost per 100 pounds	Average live weight	Dressed weight as percentage of live weight	By-product yields (on basis of live weight)			
	Stockyards	Other sources	Sows	Barrows	Stags and boars				Lard (rendered)	Edible offal	Trimmings	Inedible grease (unrendered)
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Dollars*	*Pounds*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1922												
July	77.50	22.50	58.40	40.90	0.70	10.00	239.39	76.58	16.04	2.13	4.07	1.36
August	78.32	21.68	62.99	36.31	.70	8.85	241.50	75.41	15.45	2.22	4.35	1.25
September	77.18	22.82	60.74	38.62	.64	8.85	234.25	75.86	16.56	2.42	4.96	1.36
October	76.79	23.21	54.99	44.36	.65	8.99	219.47	75.51	15.26	2.61	5.33	1.33
November	75.87	24.13	53.58	45.33	1.09	8.54	214.83	75.65	14.99	2.38	4.92	1.27
December	72.47	27.53	50.02	49.43	.55	8.17	220.07	77.03	15.81	2.24	4.44	1.34
1923												
January	74.03	25.97	48.42	50.92	.66	8.35	227.30	77.78	16.27	2.06	4.07	1.35
February	74.35	25.65	47.40	51.95	.65	8.22	227.63	78.14	16.76	2.17	4.36	1.38
March	74.49	25.51	46.58	52.78	.64	8.17	227.82	77.70	17.50	2.08	4.17	1.37
April	78.24	21.76	48.49	50.72	.79	8.04	228.85	77.11	17.19	1.99	4.37	1.42
May	78.55	21.45	50.16	49.08	.76	7.44	223.51	76.47	17.31	2.02	4.82	1.37
June	75.80	24.20	53.75	45.51	.74	6.83	227.73	76.71	17.60	2.00	4.36	1.46
July	73.89	26.11	56.66	42.56	.78	6.91	232.06	76.33	17.08	2.06	4.58	1.43
August	75.58	24.42	62.42	36.81	.77	7.78	236.22	76.74	17.39	2.07	4.71	1.37
September	79.83	20.17	61.15	37.94	.91	8.49	229.27	75.37	15.82	2.52	5.29	1.40
October	80.11	19.89	61.59	37.59	.82	7.38	219.48	75.26	14.63	2.40	5.20	1.24
November	74.60	25.40	52.54	46.80	.66	6.83	215.74	76.09	14.52	2.30	4.86	1.27
December	74.64	25.36	51.20	48.16	.64	6.82	217.80	76.20	15.91	2.12	4.42	1.35
1924												
January	76.51	23.49	48.55	50.79	.66	7.09	217.13	76.42	17.07	2.04	4.31	1.38
February	77.94	22.06	46.13	53.29	.58	7.07	220.80	76.65	17.21	2.04	4.20	1.40
March	75.53	24.47	47.71	51.50	.79	7.19	222.65	76.11	18.03	2.09	3.99	1.43
April	78.90	21.10	49.31	49.73	.96	7.24	223.67	76.10	17.82	2.02	4.32	1.48
May	76.50	23.50	50.94	48.26	.80	7.26	224.34	75.45	17.49	2.00	4.50	1.39
June	83.55	16.45	54.41	44.99	.60	6.98	228.87	75.41	17.53	1.83	4.53	1.35
July	75.93	24.07	58.84	40.38	.78	7.60	237.22	75.32	17.31	1.86	4.18	1.36
August	78.33	21.67	61.30	37.99	.71	9.47	239.29	75.03	16.29	2.23	4.91	1.42
September	79.44	20.56	60.44	38.83	.73	9.63	232.27	74.59	15.28	2.43	5.37	1.34
October	81.48	18.52	59.42	39.89	.69	10.03	219.79	73.11	13.69	2.62	5.82	1.25
November	75.75	24.25	53.22	46.14	.64	9.01	211.67	73.87	13.68	2.75	5.34	1.23
December	78.16	21.84	51.34	48.11	.55	9.17	208.96	74.72	15.00	2.42	4.61	1.19
1925												
January	77.13	22.87	51.81	47.78	.41	10.15	212.12	75.22	15.65	2.29	4.39	1.28
February	75.63	24.37	48.79	50.76	.45	10.89	215.67	75.70	16.27	2.30	4.65	1.33
March	80.56	19.44	48.11	51.15	.74	13.34	219.28	76.03	15.75	2.46	4.96	1.36
April	77.12	22.88	50.29	48.66	1.05	12.45	224.97	76.33	15.59	2.51	4.97	1.33
May	73.33	26.67	51.34	47.82	.84	11.96	228.51	76.65	15.82	2.43	5.17	1.36
June	74.65	25.35	54.71	44.53	.76	12.33	230.93	75.79	15.00	2.33	4.91	1.23
July	75.72	24.28	60.31	38.98	.71	13.31	241.14	75.63	14.27	2.28	4.87	1.29
August	79.56	20.44	60.92	38.31	.77	12.98	245.78	76.20	14.14	2.64	5.26	1.34
September	76.82	23.18	61.00	38.40	.60	12.51	239.02	74.60	14.06	2.73	6.30	1.31
October	76.95	23.05	58.02	41.37	.61	11.64	229.25	74.45	13.43	2.92	5.83	1.27
November	72.48	27.52	51.05	48.43	.52	11.36	221.61	75.31	13.90	2.82	5.88	1.21
December	73.74	26.26	48.48	51.07	.45	11.08	224.62	76.24	15.12	2.64	4.98	1.23

TABLE 602.—*Livestock slaughter statistics: Sources of supply, classification slaughter costs, weights and yields, 1922–1925*—Continued

SHEEP AND LAMBS

Year and month	Medium of obtaining supply		Age classification		Average live cost per 100 pounds	Average live weight	Dressed weight as percentage of live weight	By-product yields (on basis of live weight)	
	Stockyards	Other sources	Sheep	Lambs and yearlings				Edible fat [2]	Edible offal
1922	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Dollars*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
July	84.80	15.20	8.80	91.20	11.58	72.70	48.56	2.35	2.35
August	87.47	12.53	11.20	88.80	12.37	76.05	48.07	2.37	2.20
September	85.22	14.78	13.41	86.59	11.55	77.68	48.17	2.54	2.21
October	84.93	15.07	20.54	79.46	12.14	80.15	48.03	2.56	2.17
November	88.01	11.99	16.59	83.41	12.21	83.36	47.80	2.90	2.21
December	89.13	10.87	14.65	85.35	12.64	85.81	47.70	3.22	2.14
1923									
January	87.59	12.41	17.10	82.90	12.67	87.61	47.59	3.44	2.13
February	87.46	12.54	16.84	83.16	12.50	88.19	47.22	3.38	1.90
March	86.03	13.97	10.18	89.82	12.85	85.13	47.36	3.30	1.86
April	85.98	14.02	11.17	88.83	12.41	81.95	47.97	3.50	2.28
May	81.04	18.96	18.92	81.08	12.31	78.09	49.37	3.00	2.06
June	79.57	20.43	12.51	87.49	11.14	76.05	48.43	2.06	1.91
July	78.45	21.55	10.69	89.31	11.99	75.37	48.51	2.23	2.19
August	83.88	16.12	11.21	88.79	11.52	76.88	47.85	2.19	1.85
September	94.09	5.91	10.47	89.53	11.81	78.04	48.04	2.40	1.45
October	86.59	13.41	11.26	88.74	11.37	79.65	47.76	2.44	1.66
November	85.70	14.30	16.26	83.74	11.96	76.75	50.61	2.62	2.07
December	87.55	12.45	11.73	88.27	11.54	83.09	47.13	2.73	1.68
1924									
January	86.82	13.18	10.22	89.78	11.56	83.92	46.82	3.01	1.95
February	76.71	23.29	12.21	87.79	13.59	85.40	46.48	2.89	1.96
March	80.86	19.14	7.92	92.08	14.78	86.24	46.30	3.20	1.95
April	82.13	17.87	12.25	87.75	14.09	83.19	47.37	3.45	1.74
May	72.28	27.72	14.48	85.52	13.28	80.10	48.44	2.95	1.84
June	80.66	19.34	10.01	89.99	12.49	73.64	48.90	2.44	2.10
July	86.55	13.45	7.59	92.41	11.94	73.84	48.42	2.38	1.90
August	88.45	11.55	11.44	88.56	11.76	76.27	47.90	2.36	1.76
September	87.26	12.74	15.78	84.22	11.76	76.96	48.14	2.46	1.92
October	86.76	13.24	8.96	91.04	12.09	79.67	47.71	2.60	2.03
November	83.36	16.64	8.64	91.36	12.49	81.76	47.19	2.75	2.13
December	85.13	14.87	8.41	91.59	14.34	83.22	46.89	2.76	2.13
1925									
January	84.17	15.83	12.69	87.31	15.98	85.90	46.66	2.86	2.05
February	79.25	20.75	10.30	89.70	16.16	87.51	46.74	2.79	2.00
March	76.65	23.35	8.72	91.28	15.34	87.79	47.01	3.22	2.03
April	77.18	22.82	8.24	91.76	13.36	84.64	47.45	3.23	2.06
May	78.91	21.09	11.85	88.15	13.37	80.90	48.90	3.09	2.26
June	78.27	21.73	8.08	91.92	13.63	73.79	49.42	3.32	2.47
July	79.56	20.44	7.31	92.69	13.50	75.20	48.92	2.29	2.35
August	87.43	12.57	11.35	88.65	13.41	78.00	48.41	2.35	2.21
September	84.62	15.38	8.81	91.19	13.45	78.59	48.11	2.43	2.18
October	85.54	14.46	11.41	88.59	13.79	79.91	48.25	2.63	2.35
November	87.76	12.24	9.37	90.63	13.71	82.35	47.12	2.70	2.51
December	88.93	11.07	14.98	85.02	14.72	85.33	47.20	2.75	2.54

Division of Statistical and Historical Research. Compiled from reports of the Cold Storage Report Section.

[1] Based on reports from about 750 packers and slaughterers, whose slaughterings equaled nearly 85 per cent of total slaughter under Federal inspection.
[2] Unrendered.

TABLE 603.—*Meats, fresh: Supply at eastern markets, by months, 1925*

RECEIPTS

Market and month	Carcasses						
	Steers	Cows	Bulls	Veal	Hogs	Lambs	Mutton
Boston:	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
January	8,773	9,352	242	4,331	96	51,295	2,212
February	8,728	8,023	200	4,468	325	46,890	2,707
March	9,094	6,391	189	7,119	33	53,916	2,082
April	12,410	5,973	275	8,526		73,404	1,906
May	10,515	3,876	161	6,460	3	55,276	1,797
June	9,182	4,030	166	7,092		42,681	1,508
July	11,594	6,999	96	8,173		54,696	2,115
August	8,543	8,023	137	5,058		45,551	2,484
September	11,557	9,680	169	6,944		75,738	2,633
October	9,544	10,991	247	6,687		62,888	2,793
November	8,204	9,708	150	6,653		49,080	2,342
December	9,558	12,254	215	7,372		61,762	2,484
Total	117,702	95,300	2,247	78,883	457	673,177	27,063
New York:							
January	33,439	6,223	755	45,030		99,555	23,477
February	31,931	5,363	747	41,640	62	98,088	23,655
March	29,226	4,333	637	54,432	130	99,192	21,836
April	38,291	4,576	689	69,692	750	130,663	21,656
May	32,103	2,978	728	49,541	91	109,893	18,747
June	30,532	2,163	748	47,267	20	82,944	15,935
July	40,557	3,952	1,056	54,320		110,812	20,020
August	34,436	2,625	684	39,350		80,146	17,947
September	41,060	4,465	753	50,695		131,479	21,546
October	39,294	4,939	440	60,739		103,380	22,609
November	31,169	4,430	438	49,723	75	78,724	19,179
December	40,822	6,212	689	55,738	350	117,420	24,504
Total	422,860	52,259	8,364	618,167	1,478	1,242,296	251,111
Philadelphia:							
January	11,904	4,482	567	7,372		34,248	7,019
February	10,097	3,439	653	7,616		33,137	6,129
March	9,311	3,309	709	8,818		37,297	5,844
April	11,453	3,478	779	12,735		48,503	5,780
May	9,658	2,226	598	9,995		41,962	4,632
June	9,738	1,746	621	8,118		28,149	5,789
July	12,844	2,958	1,009	10,024		36,102	5,935
August	10,599	2,415	1,151	6,187		30,588	5,248
September	12,869	3,389	1,388	8,335		39,827	5,098
October	10,589	4,132	1,069	8,288		35,074	4,810
November	10,054	3,561	996	8,468		29,382	4,941
December	13,380	4,861	1,120	10,088		39,811	6,051
Total	132,516	39,996	10,660	106,044		434,080	67,276

Market and month	Cuts			
	Beef	Pork	Veal	Lamb
Boston:	*Pounds*	*Pounds*	*Pounds*	*Pounds*
January	12,625	2,782,017	18,000	16,910
February	11,695	2,345,324	31,741	
March	8,728	1,603,190	8,000	
April	19,104	2,522,722		
May	46,229	2,094,224	500	
June	4,863	1,977,222	44	
July	3,448	1,842,631	58	
August	11,699	1,421,386		
September	4,440	1,587,701		
October	27,011	1,798,835		
November	3,784	1,716,472		
December	2,310	2,882,896		
Total	155,936	24,574,620	58,343	16,910
New York:				
January	670,882	5,981,537		
February	748,926	5,588,294	6,000	171
March	1,086,740	4,623,079	12,103	44,161
April	1,227,246	5,430,997	88,850	
May	730,242	3,651,329	233,538	
June	956,018	3,040,518	354,880	159
July	855,284	4,018,341	47,167	[1] 23,980
August	1,023,902	2,991,441	138,217	1,340
September	1,591,937	4,188,919	209,182	[2] 37,839

[1] Includes 20,880 pounds of mutton.

[2] Includes 2,000 pounds of mutton.

TABLE 603.—*Meats, fresh: Supply at eastern markets, by months, 1925*—Con.

RECEIPTS—Continued

Market and month	Cuts			
	Beef	Pork	Veal	Lamb
New York—Continued.	*Pounds*	*Pounds*	*Pounds*	*Pounds*
October	1,646,871	4,635,908	163,474	16,073
November	1,180,332	3,669,505	165,499	
December	1,763,064	6,593,868	174,163	
Total	13,481,444	54,413,736	1,593,073	123,723
Philadelphia:				
January		2,235,422		
February		2,178,327		
March		1,641,836		
April		2,108,328		
May		1,242,358		
June		1,080,082		
July		1,602,707		
August		1,305,773		
September		1,716,753		
October		1,491,409		
November		1,577,014		
December		2,139,328		
Total		20,319,337		

SLAUGHTER

Market and month	Under Federal inspection				Under city inspection			
	Cattle	Calves	Hogs	Sheep	Cattle	Calves	Hogs	Sheep
Boston:	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
January	8,913	5,303	138,523	18,141	68	1,634	4,587	20
February	6,364	5,648	78,014	14,976	95	1,683	4,165	7
March	6,301	7,165	40,349	14,149	58	4,799	4,189	1
April	7,689	11,572	42,508	25,767	22	6,961	4,252	6
May	5,880	9,151	37,516	21,096	19	2,897	3,643	
June	5,004	7,638	65,849	23,587	16	1,574	3,028	
July	6,347	7,435	59,006	30,362	40	1,621	3,248	
August	5,794	5,585	28,937	26,926	84	805	2,768	
September	7,649	6,836	42,401	27,464	179	1,227	3,997	21
October	10,026	6,478	35,144	27,248	955	1,046	3,923	
November	9,441	5,833	50,488	25,857	470	1,381	4,994	
December	10,031	6,226	81,938	20,708	470	1,577	5,060	
Total	89,439	84,870	700,673	276,281	2,476	27,205	47,854	55
New York:								
January	48,149	60,459	289,391	166,849	106	12,027	611	1,224
February	42,498	56,644	236,651	161,215	47	12,983	315	1,729
March	41,531	59,642	184,987	147,182	165	17,758	248	2,789
April	49,885	90,712	219,383	181,971	154	16,654	150	6,091
May	41,355	70,158	178,914	158,910	50	9,250	106	2,447
June	39,911	65,536	148,255	191,658	28	5,453	40	812
July	48,428	75,079	158,943	232,062		4,710	81	98
August	36,945	56,294	125,308	188,311	1	3,190	66	15
September	45,006	69,958	195,248	233,939		7,355	21	18
October	38,414	57,736	210,219	188,849		6,526	384	372
November	35,754	49,028	258,375	193,795	1	6,665	1,049	459
December	47,639	65,631	294,092	211,792		10,237	1,334	893
Total	515,515	776,877	2,499,766	2,256,533	552	112,808	4,405	16,947
Philadelphia:								
January	6,819	6,286	92,527	12,766	1,411	3,885	1,899	8,067
February	5,563	6,154	75,912	11,404	1,174	3,867	1,452	8,230
March	6,530	5,711	59,041	11,745	1,580	3,978	1,166	6,743
April	8,438	8,560	79,258	14,111	1,812	5,219	959	10,410
May	6,699	8,189	61,103	11,831	1,562	4,899	594	9,595
June	6,036	6,643	53,826	12,910	2,119	4,670	374	8,689
July	8,799	9,280	54,820	22,249	1,509	5,801	514	10,213
August	6,480	6,121	41,760	16,480	1,132	4,458	370	8,584
September	9,132	7,334	71,942	21,247	1,803	5,266	671	9,620
October	6,689	5,374	73,755	13,317	1,809	4,687	978	8,910
November	5,877	4,837	88,104	13,519	1,786	3,802	1,050	8,509
December	7,244	6,794	90,142	15,995	2,403	4,175	1,330	8,773
Total	84,306	81,283	842,190	177,574	20,100	54,707	11,357	106,343

TABLE 603.—*Meats, fresh: Supply at eastern markets, by months, 1925*

SUMMARY

Market and month	Beef		Veal		Pork		Lamb and mutton	
	Carcasses	Cuts	Carcasses	Cuts	Carcasses	Cuts	Carcasses	Cuts
Boston:	*Number*	*Pounds*	*Number*	*Pounds*	*Number*	*Pounds*	*Number*	*Pounds*
January	27,348	12,625	11,268	18,060	143,206	2,782,017	71,698	16,910
February	23,410	11,695	11,799	31,741	82,504	2,345,324	64,586	
March	22,033	8,728	19,083	8,000	44,571	1,603,190	70,148	
April	26,369	19,104	27,059		46,760	2,522,722	101,083	
May	20,451	46,229	18,508	500	41,162	2,094,224	78,169	
June	18,398	4,863	16,304	44	68,877	1,977,222	67,716	
July	25,076	3,448	17,229	58	62,254	1,842,631	87,173	
August	22,581	11,699	11,448		31,705	1,421,336	74,961	
September	29,234	4,440	15,007		46,398	1,587,701	105,806	
October	31,763	27,011	14,211		39,067	1,798,835	92,929	
November	27,973	3,784	13,867		55,182	1,716,472	77,279	
December	32,528	2,310	15,175		86,998	2,882,896	84,954	
Total	307,164	155,936	190,958	58,343	748,984	24,574,620	976,576	16,910
New York:								
January	88,672	670,882	117,516		290,002	5,981,537	291,105	
February	80,586	748,926	111,267	6,000	237,028	5,588,294	284,687	171
March	75,892	1,086,740	131,832	12,103	185,365	4,623,079	270,599	41,161
April	93,595	1,227,246	177,058	88,850	220,283	5,430,997	349,381	
May	77,214	730,242	128,949	233,538	179,111	3,651,329	289,937	
June	73,382	956,018	118,256	354,880	148,315	3,040,518	291,349	159
July	93,993	855,284	134,109	47,167	159,024	4,018,341	362,092	23,080
August	74,691	1,023,902	98,834	138,217	125,374	2,991,441	286,429	1,349
September	91,284	1,591,937	128,008	209,182	195,269	4,188,919	386,882	37,539
October	83,087	1,646,871	125,001	163,474	210,603	4,635,908	345,216	16,073
November	71,792	1,180,332	105,416	165,499	259,499	3,669,505	292,157	
December	95,362	1,763,064	131,606	174,163	295,776	6,393,868	374,699	
Total	999,550	13,481,444	1,507,852	1,593,073	2,505,649	54,413,736	3,786,887	128,723
Philadelphia:								
January	25,183		17,543		94,426	2,235,422	62,100	
February	20,926		17,637		77,364	2,178,327	58,993	
March	21,439		18,507		60,207	1,641,836	61,629	
April	25,960		26,514		80,217	2,108,328	78,804	
May	20,748		23,083		61,697	1,242,358	68,620	
June	20,260		19,431		54,200	1,080,082	55,538	
July	27,119		25,105		55,334	1,602,707	74,490	
August	21,777		16,766		42,130	1,305,773	60,900	
September	28,581		20,935		72,613	1,716,753	75,792	
October	24,288		18,349		74,733	1,491,409	62,141	
November	22,294		17,107		89,154	1,577,014	56,381	
December	29,008		21,057		91,472	2,139,328	70,630	
Total	287,578		242,034		853,547	20,319,337	785,273	

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Includes 20,880 pounds of mutton.

[2] Includes 2,000 pounds of mutton.

TABLE 604.—*Meat and meat products: International trade, average 1911–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1911–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	3,487	1,173,461	295	1,440,264	542	1,961,053	529	2,406,404
Australia	1,967	507,143	[1] 4,278	[1] 468,724	[1] 11,222	[1] 212,406		[1] 342,186
Brazil	54,012	1,520	14,156	96,283	6,176	250,305		185,762
Canada	43,327	60,242	70,211	142,648	62,393	142,665	33,099	174,258
Chile	11,738	19,728	459	29,147	1,225	30,078		30,627
China	85	64,684	2,141	44,701	1,414	56,377	1,018	55,095
Denmark	32,184	368,188	20,619	335,776	19,239	492,220	18,522	528,423
Hungary			5,673	20,654	12,812	21,448		17,257
Irish Free State							72,510	113,445
Netherlands	359,864	497,402	201,659	321,986	262,927	368,508	281,613	515,244
New Zealand	960	326,539	834	460,904	832	405,712	1,182	425,445
Sweden	24,215	39,768	43,162	47,713	39,797	48,617	40,184	58,122
United States	18,719	1,277,524	114,558	1,863,547	69,960	2,342,809	62,223	2,063,522
Uruguay	[2] 702	196,911	99	320,869		456,041		
Yugoslavia				46,018	437	49,279	796	42,467
PRINCIPAL IMPORTING COUNTRIES								
Austria			123,925	8,278	165,474	1,160	179,045	2,647
Austria-Hungary	49,268	12,420						
Belgium	179,120	127,057	194,144	23,595	266,037	23,428	326,142	33,915
Cuba	128,362	([2] [3])	182,061		208,549		235,956	
Czechoslovakia			116,919	2,870	161,940	2,634	167,635	2,722
Finland	14,973	2,081	15,862	9,139	21,866	3,543	19,369	4,198
France	111,496	98,281	240,294	94,352	376,947	90,709	499,615	60,363
Germany	559,752	19,525	495,035	19,961	698,880	15,988	828,201	28,424
Italy	104,819	15,708	132,419	25,208	146,178	17,361	379,484	11,315
Japan	11,727		66,350		70,228		73,518	
Norway	42,416	3,365	79,693	2,732	69,349	2,797	55,385	1,679
Philippine Islands	21,902		17,671		13,424		16,421	
Poland			23,222	4,061	34,908	4,591	50,783	18,278
Russia	130,897	53,175			8,053	22		
Spain	37,974	3,200	21,045	6,155	23,085	9,533	[4] 13,737	[4] 5,117
Switzerland	60,174	3,169	32,026	3,726	38,432	2,886	34,062	2,647
Union of South Africa	31,103	404	10,554	2,767	16,753	2,992	18,464	18,810
United Kingdom	2,843,695	117,226	3,322,495	95,774	3,909,650	114,709	3,801,052	143,423
Other countries	111,722	35,935	129,520	37,765	136,710	51,805	98,395	32,870
All countries:								
Beef	2,044,172	2,162,336	2,344,145	2,365,255	2,849,214	2,910,511	3,110,950	3,134,890
Mutton	611,744	560,284	702,576	724,284	701,088	523,071	616,779	535,225
Pork	1,632,382	1,638,145	2,133,531	2,103,750	2,725,779	2,798,382	2,739,455	2,741,282
Other	702,072	663,891	499,777	782,318	579,358	948,812	841,756	913,268
Total	4,990,370	5,024,656	5,680,029	5,975,607	6,855,439	7,180,776	7,308,940	7,324,665

Division of Statistical and Historical Research. Official sources.

[1] Year beginning July 1.
[2] One year only.
[3] Less than 500 pounds.
[4] Six months.

TABLE 605.—*Meats: Total stocks in cold-storage warehouses and meat-packing establishments, United States, 1917–1925*

[Thousand pounds—i. e., 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1917	803, 609	875, 450	913, 659	851, 990	827, 951	831, 867	878, 598	893, 472	778, 119	632, 802	587, 245	709, 043
1918	981, 378	1, 117, 965	1, 265, 554	1, 354, 961	1, 319, 328	1, 299, 779	1, 149, 377	1, 135, 501	1, 035, 861	905, 326	882, 230	938, 066
1919	1, 199, 292	1. 452, 312	1, 436, 378	1, 388, 764	1, 332, 443	1, 283, 768	1, 254. 457	1, 171, 381	1, 061. 274	984, 259	880, 719	865, 101
1920	1, 015, 558	1, 186. 530	1, 278, 729	1, 304, 142	1, 252, 508	1, 208, 728	1, 194, 464	1, 115, 082	977, 225	783, 777	670, 295	655, 636
1921	820, 245	976, 058	1, 138, 033	1, 107, 706	1, 042, 552	1, 017, 209	989, 402	899, 406	776, 981	607, 455	490, 648	504, 659
1922	566, 603	624. 278	680, 553	717, 417	712, 887	745, 022	816, 689	788, 524	727, 111	589, 188	512, 396	569, 165
1923	754, 489	876, 251	957, 998	1, 031, 808	1, 093, 765	1, 045, 224	1, 040, 751	983, 159	868. 016	723, 459	628, 578	739, 493
1924	900, 242	987, 773	1, 062, 816	1, 107, 861	1, 063, 635	1, 028, 283	1, 005, 002	930, 589	825, 651	672. 437	535, 760	598, 345
1925	885, 752	1, 019, 995	1, 099, 621	1, 042, 093	999, 500	905, 019	878, 330	790, 425	694, 915	561, 759	486, 475	510, 555
Average 1921–1925	785, 467	896, 873	987, 787	1, 001, 377	982, 468	948, 152	946, 034	878, 420	778, 536	630, 858	530, 771	584, 444

Cold Storage Report Section.

TABLE 606.—*Meats, fresh and smoked: Average wholesale price per 100 pounds at Chicago and New York, by months, 1925* [1]

CHICAGO

Class of meat	January	February	March	April	May	June	July	August	September	October	November	December	Average
Beef:	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Steer—													
Choice	18. 40	17. 40	17. 70	17. 94	17. 75	17. 50	19. 49	20. 78	21. 46				
Good	16. 35	15. 70	16. 52	16. 50	16. 40	16. 20	17. 47	18. 05	18. 75				
Medium	13. 39	12. 80	14. 96	15. 00	14. 90	13. 88	14. 17	14. 32	14. 69				
Common	10. 56	9. 50	11. 35	12. 00	11. 95	10. 86	10. 81	10. 65	11. 27				
Cow—													
Good	12. 00	12. 30	13. 00	13. 57	13. 59	13. 22	13. 59	13. 00	13. 01				
Medium	10. 00	10. 00	10. 95	11. 00	11. 00	10. 36	10. 59	9. 92	10. 50				
Common	7. 50	7. 50	8. 69	9. 00	8. 35	7. 68	8. 03	7. 50	8. 50				
Bull, common	8. 12	7. 82	8. 12	7. 97	8. 25	8. 30	7. 82	7. 45	7. 51				
Veal:													
Choice	17. 78	19. 55	18. 88	16. 62	16. 75	16. 78	18. 66	20. 32	21. 14				
Good	15. 65	17. 55	16. 45	14. 18	15. 02	14. 70	16. 36	17. 85	18. 50				
Medium	13. 10	14. 30	13. 90	12. 52	13. 15	12. 05	13. 50	14. 05	14. 34				
Common	9. 80	10. 00	10. 50	9. 86	11. 28	10. 05	10. 34	10. 81	11. 52				

Lamb and mutton:													
Lamb—													
Choice	27.35	27.70	26.62	24.68	25.35	28.85	30.04	29.00	28.92				
Good	25.65	25.90	24.80	23.20	23.50	26.88	27.75	27.02	26.66				
Medium	24.10	24.32	23.25	21.28	21.22	24.00	25.00	24.28	24.48				
Common	20.68	21.32	20.50	18.70	18.75	20.42	21.10	20.70	20.54				
Mutton—													
Good	14.00	14.50	15.85	14.56	14.25	13.62	14.50	14.50	14.22				
Medium	12.00	12.00	12.85	12.56	12.75	11.65	12.00	12.00	11.86				
Common	10.00	10.00	10.00	10.00	10.75	9.65	9.50	9.85	9.58				
Fresh pork cuts:													
Hams, 12–16 lbs. average	19.25	20.19	23.62	24.25	21.56	23.31	25.40	25.84	24.56	21.85	21.62	20.02	22.62
Loins—													
8–10 lbs. average	16.61	16.99	25.90	24.76	24.40	23.32	28.16	29.10	31.18	24.65	24.28	21.47	24.24
10–12 lbs. average	16.02	16.02	24.52	22.72	22.30	21.50	26.26	26.85	28.76	23.18	23.17	20.77	22.67
12–15 lbs. average	15.44	15.21	23.22	20.82	20.45	19.98	23.12	24.12	25.74	21.82	22.00	19.86	20.98
15–18 lbs. average	14.44	14.42	21.58	19.20	18.15	18.55	19.88	19.78	21.93	19.68	19.55	18.68	18.82
18–22 lbs.	13.75	13.75	20.08	18.20	17.15	17.45	18.20	18.52	20.41	18.05	18.52	17.83	17.66
Shoulders—													
Skinned	13.08	12.60	16.61	16.91	15.80	15.72	17.49	18.29	19.41	[2] 18.21	[2] 17.66	[2] 16.25	16.50
Picnics, 4–6 lbs.	12.30	11.78	14.72	14.46	14.00	14.20	16.06	16.20	16.60	16.50	15.89	14.57	14.77
Butts, Boston style	15.66	15.50	19.92	21.28	19.59	19.92	22.92	23.85	24.20	22.04	21.68	19.26	20.48
Spareribs	11.10	11.35	15.41	14.18	13.58	12.80	14.21	13.54	15.01	17.16	18.65	16.24	14.44
Cured pork cuts and lard:													
Hams, smoked, 14-16 lbs. average	22.25	22.25	26.69	26.70	24.88	25.47	28.90	29.44	28.30	27.50	27.12	28.20	26.48
Shoulders, picnic smoked	15.88	14.97	17.53	18.02	15.94	17.66	19.93	20.06	19.70	20.00	20.00	21.00	18.39
Bacon, breakfast	25.19	25.62	31.50	33.20	32.28	33.91	35.20	35.44	35.70	36.38	34.50	32.60	32.63
Lard, tierces	17.59	17.03	18.25	17.07	16.50	18.13	18.42	18.94	18.95	18.75	18.50	16.67	17.90
Lard substitutes, tierces	14.69	13.88	14.72	14.38	14.06	14.00	14.20	14.75	14.40	13.31	13.50	13.50	14.12

NEW YORK

Beef:													
Steer—													
Choice	18.20	16.52	17.52	17.77	17.56	17.48	20.52	21.18	22.76				
Good	14.86	14.16	15.88	16.79	16.34	16.40	18.28	17.70	19.30				
Medium	12.28	12.38	14.21	15.69	15.31	14.71	14.50	13.55	14.82				
Common	10.29	10.91	12.84	13.90	13.44	11.54	11.31	10.25	11.48				
Cow—													
Good	11.15	10.88	13.38	14.08	13.85	13.39	13.84	12.88	13.54				
Medium	10.02	9.61	12.00	13.08	12.40	11.84	12.00	11.14	11.21				
Common	8.78	8.18	10.62	11.83	11.51	10.24	9.86	9.21	9.51				
Bull, common	7.70	7.91	8.40	8.25		8.88							
Veal:													
Choice	21.05	21.79	19.82	18.41	19.25	17.92	20.92	21.95	23.44				
Good	18.35	19.19	17.72	16.15	17.08	15.72	18.02	18.88	20.64				
Medium	16.12	16.33	14.89	13.81	14.85	13.60	15.01	15.48	16.84				
Common	12.28	13.03	11.90	10.94	12.42	11.08	11.96	12.22	13.06				

[1] Descriptions of beef, veal, lamb and mutton changed Oct. 1. (See Table 607).

TABLE 606.—*Meats, fresh and smoked: Average wholesale price per 100 pounds at Chicago and New York, by months, 1925*—Continued

NEW YORK—Continued

Class of meat	January	February	March	April	May	June	July	August	September	October	November	December	Average
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Lamb and mutton:													
Lamb—													
Choice	28.90	28.58	27.52	26.12	26.32	28.15	29.26	27.96	29.00				
Good	27.70	27.55	25.72	24.09	24.60	25.82	27.60	25.95	26.94				
Medium	26.45	25.80	24.02	21.49	22.35	23.05	25.28	24.08	24.94				
Common	25.43		20.20			20.24	22.18	20.60	21.47				
Mutton—													
Good	15.62	15.20	17.18	16.70	17.35	13.72	15.42	13.82	14.48				
Medium	14.54	14.04	15.70	15.20	15.75	11.90	13.28	12.02	12.58				
Common	12.08	12.04	13.71	13.20	13.88	10.25	11.10	10.11	10.21				
Fresh pork cuts:													
Hams, 12-16 lbs. average	20.75	19.88	25.00	25.00	24.50	24.12	26.60	26.00	26.40	26.25	25.50	24.10	24.51
Loins—													
8-10 lbs. average	18.51	18.45	26.19	26.21	26.15	25.10	28.84	31.00	33.70	27.10	27.54	23.12	25.99
10-12 lbs. average	17.92	17.55	25.28	25.01	24.85	23.95	27.44	28.35	31.50	25.82	26.44	22.15	24.69
12-15 lbs. average	17.30	16.81	24.02	22.68	22.58	22.18	24.94	25.02	27.60	24.08	25.26	21.03	22.79
15-18 lbs. average	16.60	16.20	22.88	21.02	20.38	20.42	22.44	22.15	24.68	22.35	23.99	20.29	21.12
18-22 lbs.	15.59	15.45	21.16	19.23	18.52	18.72	20.80	20.15	22.72	20.32	22.57	19.5	19.57
Shoulders—													
Skinned	14.32	13.59	17.25	18.48	16.92	17.08	18.62	19.46	20.60	[2] 21.15	[2] 19.25	[2] 17.42	17.84
Picnics, 4-6 lbs.	13.08	12.86	14.80	16.29	15.50	15.62	16.25						
Picnics, 6-8 lbs.	12.58	12.32	14.18	15.13	14.50	14.62	15.52	17.25	17.86	18.75	17.41	15.72	15.48
Butts, Boston style	17.31	17.10	21.12	22.56	18.95	19.85	23.08	23.85	25.04	25.10	23.76	21.91	21.64
Spareribs	13.00	13.25	15.25	16.20	15.00	15.00	15.00	14.75	15.90	17.38	18.25	18.60	15.63
Cured pork cuts and lard:													
Hams, smoked, 10-12 lbs. average	20.50	20.78	24.26	25.33	23.85	24.50	26.88	27.56	26.60	27.50	26.81	26.50	25.09
Shoulders, picnics, smoked	15.25	14.06	15.88	16.70	15.62	16.88	18.80	19.12	19.70	19.44	20.50	20.50	17.70
Bacon, breakfast	21.75	21.75	25.81	27.50	27.23	28.12	30.46	31.22	31.32	31.94	31.25	26.30	27.89
Lard, tierces	17.56	16.88	18.10	18.05	16.84	17.34	18.82	19.25	19.05	18.06	17.56	17.00	17.88
Lard substitutes, tierces	14.25	13.94	14.60	14.88	14.72	14.50	14.65	14.75	14.45	13.50	13.00	13.05	14.19

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats and Wool.

[2] New York style.

TABLE 607.—*Meats (fresh beef, veal, lamb, and mutton): Average wholesale price per 100 pounds at Chicago and New York, October–December, 1925*

Class of meat	Chicago			New York		
	October	November	December	October	November	December
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Beef:						
Steer—						
Heavy weight (700 lbs. up)—						
Choice	21.96	20.65	19.84	21.85	19.66	18.95
Good	19.06	17.65	16.99	18.45	16.72	17.18
Light and medium weight (700 lbs. down)—						
Choice	21.44	20.32	19.84	22.32	19.99	19.24
Good	18.08	17.00	16.99	18.72	16.60	16.54
All weights—						
Medium	13.52	12.68	13.23	14.08	13.15	14.74
Common	10.74	10.36	11.61	11.20	10.82	12.70
Cow—						
Good	12.81	11.35	12.00	13.12	11.56	13.06
Medium	10.52	9.32	10.38	11.18	10.01	11.85
Common	8.61	7.88	9.27	9.36	8.70	10.58
Veal:						
Vealers—						
Choice	20.20	17.99	18.99	21.28	19.76	22.36
Good	18.10	16.44	17.09	18.85	17.14	19.92
Medium	15.50	14.39	14.44	16.30	14.37	16.86
Common	13.50	12.60	12.68	13.98	12.10	14.16
Calf carcasses—						
Choice				15.82	13.86	16.03
Good	14.52	13.00	13.00	14.00	12.36	14.27
Medium	12.48	11.00	11.00	11.95	10.95	13.04
Common	10.50	9.42	9.50	10.38	9.88	12.04
Lamb and mutton:						
Lamb—						
Light and handy weight (30–42 lbs.)—						
Choice	27.48	29.20	29.41	28.00	28.90	29.82
Good	25.15	27.40	27.50	26.10	27.38	28.56
Medium and heavy weight (42–55 lbs.)—						
Choice	24.87			25.85	26.95	27.68
Good	23.20			24.18	25.05	26.27
All weights—						
Medium	22.98	25.28	25.61	23.22	23.85	24.95
Common	19.72	21.55	23.02	20.75	21.75	23.21
Mutton (ewes)—						
Good	14.68	14.19	15.00	15.65	16.38	16.61
Medium	12.10	12.19	13.00	14.58	15.19	15.09
Common	9.78	10.19	11.38	12.00	12.72	12.95

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

91044°—26——76

HIDES AND SKINS

TABLE 608.—*Hides and skins: Quarterly stocks of hides in United States, 1921-1925*

[Thousands—i. e., 000 omitted]

RAW PACKER

Description and year	Mar. 31	June 30	Sept. 30	Dec. 31	Description and year	Mar. 31	June 30	Sept. 30	Dec. 31
Steers:					Mixed cattle:				
1921	1,564	1,522	1,451	1,090	1921	265	378	273	305
1922	1,255	1,492	1,342	1,370	1922	292	202	208	241
1923	1,448	1,532	1,590	1,166	1923	239	188	164	210
1924	1,111	1,270	1,108	1,051	1924	186	140	154	210
1925	1,128	1,125	999	1,051	1925	213	118	119	166
Cows:					Calfskins:				
1921	2,251	1,537	1,169	1,173	1921	913	1,073	775	531
1922	1,145	1,054	1,186	1,584	1922	703	713	670	596
1923	1,368	1,182	1,279	1,492	1923	731	683	584	509
1924	1,302	946	1,038	1,559	1924	487	613	472	476
1925	1,246	974	1,174	1,616	1925	634	901	754	652
Bulls:					Kip skins:				
1921	188	165	162	125	1921	377	290	240	193
1922	100	99	132	144	1922	124	87	196	274
1923	138	111	148	161	1923	234	142	220	188
1924	138	123	120	109	1924	150	166	273	216
1925	101	109	109	131	1925	225	110	222	266

DOMESTIC AND FOREIGN CATTLE HIDES (OTHER THAN PACKER)

Calf, dry or dry salted:					Steers, green salted:				
1921	384	456	590	564	1921	685	545	354	259
1922	486	378	572	760	1922	291	202	340	405
1923	316	420	544	318	1923	444	522	282	133
1924	220	348	376	206	1924	151	206	194	283
1925	157	335	672	531	1925	231	231	110	113
Calf, green salted:					Mixed cattle, green salted:				
1921	1,763	2,362	2,110	1,870	1921	1,109	847	1,191	1,021
1922	1,775	2,507	2,432	1,942	1922	801	706	790	787
1923	1,643	2,362	1,516	1,357	1923	1,081	813	698	705
1924	1,205	1,702	1,800	1,483	1924	892	611	528	685
1925	1,483	2,257	2,307	2,052	1925	851	578	523	533
Cattle, dry or dry salted:					Kip, dry or dry salted:				
1921	984	885	937	1,012	1921	377	422	357	396
1922	1,064	968	1,020	1,143	1922	461	455	447	319
1923	1,217	1,144	872	595	1923	258	356	206	111
1924	344	276	255	212	1924	124	73	89	50
1925	175	107	103	105	1925	54	47	37	20
Bulls, green salted:					Kip, green salted:				
1921	58	76	54	58	1921	488	313	341	436
1922	54	44	37	37	1922	330	334	346	570
1923	45	43	43	41	1923	518	397	359	453
1924	44	49	44	28	1924	328	295	330	399
1925	22	32	31	27	1925	320	282	255	339
Cows, green salted:									
1921	703	1,105	496	775					
1922	660	579	462	636					
1923	768	551	412	582					
1924	520	343	334	448					
1925	536	433	393	499					

MISCELLANEOUS HIDES AND SKINS

Buffalo hides:					Cabretta skins:				
1921	211	188	170	141	1921	1,579	1,219	791	547
1922	138	139	156	109	1922	361	878	810	930
1923	117	180	117	88	1923	966	1,128	914	736
1924	59	54	14	11	1924	608	559	509	458
1925	45	80	48	7	1925	569	787	771	672

TABLE 608.—*Hides and skins: Quarterly stocks of hides in United States, 1921–1925*—Continued

[Thousands—i. e., 000 omitted]

MISCELLANEOUS HIDES AND SKINS—Continued

Description and year	Mar. 31	June 30	Sept. 30	Dec. 31
Calf and kip skins				
1921	4,302	4,916	4,413	3,990
1922	3,881	4,474	4,664	4,462
1923	3,700	4,360	3,429	2,935
1924	2,516	3,197	3,340	2,831
1925	2,873	3,932	4,247	3,860
Cattle and kip hides and skins (foreign tanned)				
1921	293	240	202	151
1922	124	62	46	75
1923	76	72	23	19
1924	13	18	19	16
1925	11	11	10	11
Cattle hides:				
1921	7,807	7,078	6,086	5,819
1922	5,662	5,347	5,515	6,346
1923	6,749	6,086	5,487	5,086
1924	4,689	3,963	3,775	4,585
1925	4,503	3,707	3,563	4,251
Deer and elk skins:				
1921	119	212	216	275
1922	136	166	187	188
1923	192	327	274	309
1924	311	397	413	330
1925	373	366	310	176
Goat and kid skins:				
1921	8,652	9,680	10,746	10,380
1922	8,044	10,799	8,641	8,730
1923	7,779	10,187	10,999	9,926
1924	7,195	9,196	8,018	6,153
1925	7,754	9,711	9,839	7,379
Horse, colt, ass, and mule hides:				
1921	385	386	306	260
1922	254	140	109	128
1923	166	128	100	111
1924	156	98	62	98
1925	138	103	70	80
Horse, colt, ass, and mule butts:				
1921	222	193	191	207
1922	220	224	310	456
1923	491	448	186	166
1924	114	119	87	131
1925	188	177	181	201
Horse, colt, ass, and mule fronts:				
1921	43	57	57	62
1922	44	62	94	115
1923	145	139	97	101
1924	59	98	31	86
1925	75	51	57	69
Horse, colt, ass, and muleshanks:				
1921	72	109	65	60
1922	56	42	60	154
1923	36	92	23	95
1924	15		11	17
1925	53	24	74	63
Kangaroo and Wallaby skins:				
1921	410	363	359	389
1922	268	240	177	243
1923	335	456	358	486
1924	397	278	175	335
1925	240	174	115	185
Pig and hog skins:				
1921	251	120	89	97
1922	111	111	106	96
1923	88	55	65	71
1924	79	83	23	23
1925	34	31	24	26
Pig and hog strips (pounds):				
1921	1,163	859	349	517
1922	226	483	390	319
1923	412	604	645	575
1924	561	738	390	292
1925	362	479	379	423
Sheep and lamb skins:				
1921	12,971	13,755	12,606	12,661
1922	11,941	10,971	10,475	9,151
1923	8,995	9,916	9,203	7,400
1924	6,193	6,770	7,282	5,515
1925	5,608	7,551	8,100	6,072
Skivers and fleshers (pieces):				
1921	1,611	1,778	1,784	1,770
1922	1,732	1,858	2,031	2,141
1923	1,540	1,638	1,584	1,408
1924	1,345	1,516	1,780	1,327
1925	934	1,119	1,452	1,632

Division of Statistical and Historical Research. Compiled from reports of the Bureau of Census.

TABLE 609.—*Hides and skins: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Algeria	3,103	9,335	2,225	10,350	4,793	11,216	3,369	9,041
Argentina	207	293,950		405,422		388,319		502,683
Australia	2,623	15,210	[1] 8,268	[1] 15,711	[1] 8,807	[1] 19,816		
Brazil		83,252		113,195		136,411		114,745
British India	20,376	169,857	6,171	101,738	6,533	105,000	[2] 4,544	[2] 96,644
Canada	46,820	45,469	44,131	50,455	43,884	54,521	49,902	53,198
Chile	41	13,235	85	8,888	98	10,181		13,078
China	2,317	72,751	6,943	62,552	5,042	64,926	4,500	47,954
Cuba	166	14,293	357	14,847	56	10,829		
Denmark	9,842	21,998	4,927	26,987	11,290	20,588	14,887	19,146
Dutch East Indies	135	16,708	188	14,159	213	15,613		[3] 12,849
Egypt		10,754	595	4,901	298	6,720	455	6,783
Madagascar		14,502		16,065		23,580		
Morocco		10,347	262	7,456	188	14,589	338	16,917
Netherlands	73,691	67,636	34,046	47,681	46,374	47,747	57,320	49,718
New Zealand	752	25,577	373	31,833	226	25,742	215	31,902
Norway	13,979	13,852	8,011	10,587	9,507	11,371	12,178	11,259
Peru		6,195		4,614		3,589		4,118
Switzerland	6,659	22,866	7,547	11,649	13,094	13,300	13,219	14,593
Union of South Africa	219	50,737	152	63,312	301	59,466	362	68,691
Uruguay		71,105	1	52,444		49,643		
Venezuela		9,764		5,449		6,836		[4] 3,196
Yugoslavia				7,178		5,624		7,167
PRINCIPAL IMPORTING COUNTRIES								
Austria			11,223	1,271	14,142	299	19,011	1,023
Austria-Hungary	87,566	79,265						
Belgium	180,930	117,213	60,911	20,289	83,329	20,609	90,830	18,927
British Malaya	[5] 9,332	[5] 6,436	7,066	2,792	7,955	4,802	8,817	6,385
Bulgaria	[6] 6,607	[6] 3,022	5,634	3,045	8,695	2,188	5,049	3,967
Czechoslovakia			6,229	5,361	15,888	1,920	53,476	545
Finland	10,717	7,136	12,138	3,404	17,506	5,323	10,713	12,637
France	155,508	131,041	119,595	88,117	169,564	83,843	192,564	72,270
Germany	440,200	152,373	261,628	5,015	219,305	4,605	320,159	4,185
Greece	5,770	2,283	9,122	4,855	7,318	4,629	12,094	6,464
Hungary			1,376	4,993	4,388	815		
Italy	53,524	48,428	70,547	51,650	72,252	61,434	84,060	59,804
Japan	6,321	710	16,363		22,557		28,188	
Russia	110,143	96,351						
Spain	19,119	17,457	22,560	18,111	16,293	27,541	[4] 6,387	[4] 14,642
Sweden	25,662	24,130	29,258	24,793	38,697	21,925	39,625	29,331
United Kingdom	107,350	38,100	116,611	27,019	205,486	42,791	231,487	38,381
United States	514,249	25,432	551,173	28,700	531,576	36,012	356,552	105,089
Other countries	45,593	182,585	5,979	39,693	6,668	41,987	39,764	57,199
Total	1,959,521	1,991,355	1,431,695	1,416,611	1,592,273	1,466,350	1,660,065	1,514,431

Division of Statistical and Historical Research. Official sources.

[1] Year beginning July 1.
[2] Twelve months' sea-trade, three months' land-trade.
[3] Java and Madura only.
[4] Six months.
[5] Singapore only.
[6] Four-year average.

TABLE 610.—*Hides, packer: Average price per pound at Chicago, 1893–1925*

Year	Steers					Cows			Bulls	
	Heavy native	Heavy Texas	Light Texas	Butt branded	Colorados	Heavy native	Light native	Branded	Native	Branded
Average:	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1894–1898	9.24	8.68	8.06	8.23	7.53	8.28	8.30	7.53	7.25	5.83
1899–1903	12.34	12.80	11.56	11.37	11.01	10.75	10.13	10.03	10.05	8.45
1904–1908	13.86	13.96	13.23	12.67	12.49	12.65	12.24	11.94	10.85	9.46
1909–1913	16.53	16.05	15.30	15.26	15.06	15.31	15.03	14.39	13.21	11.89
1914–1920	29.17	26.74	25.87	26.32	25.55	27.86	26.89	24.43	22.66	20.08
1921–1925	15.76	14.67	13.47	14.64	13.64	14.10	13.28	11.66	10.83	9.25
1893	7.31	6.45	5.49	6.29	5.59	5.21	4.74	4.71	5.20	4.07
1894	6.38	6.39	5.41	5.73	5.31	4.95	4.67	4.53	4.38	3.81
1895	10.20	9.48	8.60	8.97	8.39	8.76	8.52	8.00	7.41	6.42
1896	8.14	7.44	6.94	7.25	6.45	7.51	7.53	6.66	6.63	5.25
1897	9.96	9.33	8.94	9.14	8.28	9.35	9.74	8.74	8.27	6.36
1898	11.50	10.74	10.43	10.08	9.24	10.84	11.02	9.72	9.56	7.32
1899	12.34	12.07	11.55	11.44	10.70	11.27	10.40	10.90	10.04	8.50
1900	11.94	11.99	11.09	11.04	10.49	10.62	10.44	10.18	9.93	8.42
1901	12.37	12.88	11.53	11.46	11.21	10.66	10.07	9.87	10.19	8.54
1902	13.38	14.41	12.42	12.33	12.10	11.12	10.12	10.01	10.50	9.10
1903	11.69	12.64	11.19	10.57	10.54	10.07	9.64	9.19	9.61	7.69
1904	11.66	12.65	11.67	10.89	10.81	10.60	10.52	10.28	9.10	8.15
1905	14.30	14.44	13.91	13.21	13.08	13.16	13.10	12.74	10.77	9.76
1906	15.43	14.89	14.84	13.99	13.65	14.96	14.84	14.27	12.21	10.56
1907	14.55	13.96	13.26	12.99	12.70	13.10	11.71	11.98	12.13	10.08
1908	13.36	13.86	12.46	12.28	12.21	11.43	11.04	10.43	10.03	8.73
1909	16.47	16.41	15.35	15.49	15.29	15.21	14.83	14.11	13.10	12.04
1910	15.29	14.88	13.77	13.71	13.42	13.79	13.04	12.40	11.96	11.10
1911	14.81	14.32	13.54	13.50	13.47	13.87	13.50	12.56	12.11	10.50
1912	17.69	16.58	16.14	16.17	15.88	16.40	16.50	15.71	14.07	12.03
1913	18.38	18.06	17.72	17.42	17.26	17.28	17.27	17.19	14.82	13.80
1914	19.76	19.23	18.77	18.56	18.20	18.94	19.27	18.49	16.20	15.15
1915	24.26	21.48	21.12	21.37	20.39	23.55	22.97	20.90	19.24	16.39
1916	26.28	24.23	24.06	23.86	23.34	24.89	24.89	23.94	21.41	18.47
1917	32.70	30.94	29.58	30.23	29.73	31.59	29.59	27.35	25.03	21.72
1918	29.91	27.81	26.00	27.13	26.32	27.37	22.72	21.12	20.76	18.62
1919	39.60	35.96	35.17	35.85	34.84	37.63	39.56	34.25	31.00	27.90
1920	31.65	27.52	26.38	27.25	26.02	31.08	29.23	24.93	24.97	22.28
1921	13.88	13.10	11.43	12.83	11.85	12.41	11.37	10.00	8.40	7.13
1922	17.83	16.57	15.29	16.51	15.59	16.10	15.16	13.47	11.96	10.17
1923	16.46	14.79	13.77	14.89	13.86	14.21	12.94	11.11	11.69	9.85
1924	14.67	13.82	12.80	13.80	12.79	12.95	12.29	10.41	10.14	8.79
1925	15.96	15.08	14.06	15.16	14.12	14.82	14.62	13.30	11.98	10.29

Division of Statistical and Historical Research. Compiled from annual reports of the Chicago Board of Trade, 1909, page 97, and 1925, page 108.

TABLE 611.—*Hides, country: Average price per pound at Chicago, 1893–1925*

Year	Extremes	Heavy steers	Heavy cows	No. 1 buffs	No. 2 buffs	Bulls	Country packer brands	Country brands	No. 1 calfskins	No. 1 kipskins
Average:	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1894–1898	8.06	8.11	7.56	7.54	7.05	6.43	7.15	6.84	10.55	8.94
1899–1903	9.28	10.46	9.35	9.05	8.20	8.33	9.31	8.65	12.12	10.06
1904–1908	11.21	11.80	11.05	10.97	9.95	9.29	10.67	9.91	14.56	11.88
1909–1913	13.67	13.64	13.11	13.06	12.07	10.99	12.20	11.36	17.21	14.42
1914–1920	23.35	23.07	21.05	21.03	19.88	18.14	21.48	17.82	38.79	29.23
1921–1925	11.96	11.40	9.90	10.06	8.89	7.98	10.48	8.24	19.30	16.61
1893	4.49	6.09	4.57	4.26	3.65	4.37	4.82	3.91	8.35	6.21
1894	4.76	5.30	4.41	4.21	3.73	3.89	4.89	4.02	7.84	6.12
1895	8.07	8.79	7.97	7.86	7.36	6.51	8.07	7.26	11.23	8.93
1896	7.43	7.20	6.86	6.85	6.36	5.83	6.16	6.21	9.10	7.96
1897	9.55	9.00	8.65	8.86	8.35	7.45	7.77	7.88	12.08	10.50
1898	10.49	10.25	9.90	9.94	9.43	8.46	8.85	8.85	12.49	11.20

TABLE 611.—*Hides, country: Average price per pound at Chicago, 1893–1925*—Continued

Year	Extremes	Heavy steers	Heavy cows	No. 1 buffs	No. 2 buffs	Bulls	Country packer brands	Country brands	No. 1 calfskins	No. 1 kipskins
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1899	10.43	10.79	10.13	10.08	9.58	8.71	9.69	9.56	12.84	10.95
1900	9.52	10.29	9.30	9.11	8.26	8.05	8.75	8.73	11.91	10.16
1901	8.77	10.50	9.25	8.73	7.73	8.43	8.84	8.56	11.93	9.36
1902	8.83	10.99	9.41	8.74	7.78	8.73	9.45	8.55	11.89	9.67
1903	8.87	9.71	8.66	8.59	7.63	7.75	9.82	7.85	12.05	10.16
1904	9.75	10.03	9.47	9.45	8.49	7.87	9.42	8.42	13.37	11.08
1905	12.14	12.47	11.92	11.88	10.96	9.39	11.86	10.93	14.84	12.58
1906	13.43	13.83	13.49	13.43	12.47	11.29	12.48	12.51	15.54	14.05
1907	10.99	12.05	11.02	10.79	9.64	10.02	10.69	9.66	14.90	11.60
1908	9.75	10.61	9.35	9.29	8.21	7.86	8.90	8.04	14.17	10.09
1909	13.55	14.17	13.40	13.24	12.21	11.13	12.55	11.44	17.92	14.11
1910	11.51	12.16	11.26	11.13	10.02	9.86	10.20	9.49	16.02	12.03
1911	12.80	12.24	11.82	11.82	10.79	10.01	10.72	10.02	16.34	13.23
1912	14.91	14.25	14.06	14.05	13.02	11.22	13.12	12.33	18.60	16.01
1913	15.60	15.39	15.00	15.05	14.31	12.73	14.43	13.54	17.18	16.74
1914	17.70	16.56	16.42	16.63	15.64	13.98	16.34	14.53	21.90	19.26
1915	19.65	19.67	19.06	18.98	17.92	15.90	18.62	16.13	21.60	19.60
1916	22.68	20.75	20.17	20.37	19.35	17.28	21.86	17.84	34.55	24.84
1917	25.23	25.74	23.46	23.60	21.91	20.39	24.31	20.30	39.43	29.05
1918	19.80	21.89	18.96	18.73	17.48	15.12	19.62	15.02	40.92	26.52
1919	35.58	32.66	30.02	29.96	28.90	25.54	29.01	25.99	72.15	51.37
1920	22.79	24.20	19.27	18.93	17.93	18.76	20.60	14.94	40.98	33.97
1921	8.95	9.35	7.32	7.10	5.77	5.43	7.43	5.33	18.57	15.58
1922	12.93	12.03	10.85	10.86	9.52	8.23	12.53	8.42	18.95	17.29
1923	11.65	11.39	10.43	10.45	9.26	8.93	10.12	8.70	17.18	15.42
1924	11.86	11.31	9.24	9.63	8.63	7.86	9.81	8.23	20.39	16.62
1925	14.41	12.94	11.64	12.26	11.25	9.46	12.52	10.54	21.88	18.12

Division of Statistical and Historical Research. Compiled from annual reports of the Chicago Board of Trade, 1909, page 97, and 1925, page 108.

HORSES AND MULES

TABLE 612.—*Horses and mules: Number and value on farms, United States, January 1, 1910–1926*

Jan. 1—	Horses			Mules		
	Number	Price per head Jan. 1	Farm value Jan. 1	Number	Price per head Jan. 1	Farm value Jan. 1
	Thousands	*Dollars*	*Thousand dollars*	*Thousands*	*Dollars*	*Thousand dollars*
1910, Apr. 15	*19,833*	108.03	2,142,524	*4,210*	120.20	506,049
1911	20,277	111.46	2,259,981	4,323	125.92	544,359
1912	20,509	105.94	2,172,694	4,362	120.51	525,657
1913	20,567	110.77	2,278,222	4,386	124.31	545,245
1914	20,962	109.32	2,291,638	4,449	123.85	551,017
1915	21,195	103.33	2,190,102	4,479	112.36	503,271
1916	21,159	101.60	2,149,786	4,593	113.83	522,834
1917	21,210	102.89	2,182,307	4,723	118.15	558,006
1918	21,555	104.24	2,246,970	4,873	128.81	627,679
1919	21,482	98.45	2,114,897	4,954	135.83	672,922
1920	19,848	96.52	1,915,653	5,475	148.46	812,828
Av. 1914–1920	21,047	102.38	2,154,764	4,785	126.62	605,889
1921	19,134	84.57	1,618,120	5,586	117.52	656,455
1922	18,564	71.18	1,321,396	5,638	89.14	502,563
1923	17,943	70.65	1,267,624	5,702	87.17	497,044
1924	17,222	65.48	1,127,619	5,730	85.90	492,209
1925	16,554	64.18	1,062,511	5,758	82.51	475,068
1926 [1]	15,778	65.08	1,026,905	5,780	81.30	469,887

Division of Crop and Livestock Estimates; figures in italics are census returns.

[1] Preliminary.

TABLE 613.—*Horses: Number and value on farms, by States, January 1, 1920–1926*

State	Number Jan. 1—				Average value per head Jan. 1—				Farm value Jan. 1—			
	1920	1921	1922	1923	1920	1921	1922	1923	1920	1921	1922	1923
	Thousands	*Thousands*	*Thousands*	*Thousands*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Maine	94	92	90	88	157.00	148.00	126.00	124.00	14,720	13,590	11,329	10,871
N. Hampshire	38	37	36	35	144.00	131.00	113.00	116.00	5,468	4,850	4,080	4,044
Vermont	77	77	73	71	143.00	125.00	112.00	106.00	11,007	9,660	8,193	7,548
Massachusetts	51	49	48	47	156.00	151.00	134.00	138.00	7,947	7,388	6,444	6,490
Rhode Island	7	6	6	6	162.00	150.00	140.00	135.00	1,134	900	840	810
Connecticut	38	36	36	35	166.00	147.00	135.00	130.00	6,321	5,306	4,850	4,550
New York	536	513	496	480	144.00	130.00	118.00	116.00	77,391	66,627	58,294	55,564
New Jersey	73	70	67	64	153.00	143.00	132.00	130.00	11,159	10,010	8,840	8,320
Pennsylvania	506	486	473	463	126.00	122.00	112.00	111.00	63,986	59,216	53,201	51,243
Ohio	811	790	770	740	113.00	109.00	100.00	94.00	91,923	86,075	76,786	69,699
Indiana	717	650	620	590	105.00	95.00	82.00	75.00	75,301	61,571	50,636	43,998
Illinois	1,297	1,232	1,190	1,150	97.00	85.00	69.00	71.00	126,252	104,786	82,659	81,621
Michigan	606	576	559	542	99.00	97.00	94.00	92.00	59,784	55,840	52,557	50,074
Wisconsin	683	669	655	641	114.00	108.00	93.00	105.00	77,588	72,184	61,233	67,016
Minnesota	933	914	905	887	94.00	86.00	77.00	79.00	87,986	78,742	69,772	69,654
Iowa	1,387	1,338	1,300	1,266	93.00	85.00	74.00	80.00	129,124	114,138	96,564	101,715
Missouri	906	876	841	801	86.00	74.00	52.00	53.00	77,574	64,458	43,991	42,157
North Dakota	856	830	815	790	83.00	64.00	57.00	58.00	70,909	53,264	46,193	45,985
South Dakota	817	784	773	760	72.00	63.00	50.00	53.00	58,539	49,364	38,891	40,338
Nebraska	961	924	892	882	77.00	71.00	57.00	59.00	74,296	65,767	50,854	52,472
Kansas	1,083	1,040	1,019	978	80.00	67.00	49.00	46.00	86,853	69,501	50,331	44,996
Delaware	28	27	25	24	85.00	80.00	66.00	79.00	2,387	2,162	1,638	1,888
Maryland	141	134	127	121	100.00	98.00	87.00	87.00	14,893	13,153	11,097	10,484
Virginia	312	306	295	284	113.00	101.00	85.00	82.00	35,231	30,840	25,016	23,370
West Virginia	169	166	164	158	110.00	104.00	90.00	92.00	18,531	17,203	14,805	14,489
N. Carolina	171	163	155	147	156.00	125.00	108.00	108.00	26,730	20,344	16,775	15,905
S. Carolina	78	72	66	60	180.00	134.00	88.00	93.00	14,068	9,644	5,786	5,560
Georgia	101	92	83	74	160.00	112.00	76.00	82.00	16,178	10,317	6,338	6,081
Florida	41	40	39	38	140.00	123.00	115.00	103.00	5,737	4,905	4,474	3,928
Kentucky	382	370	360	343	105.00	87.00	69.00	66.00	39,958	32,064	24,682	22,542
Tennessee	318	306	294	282	117.00	94.00	75.00	73.00	37,224	28,652	21,984	20,543
Alabama	130	124	118	108	130.00	91.00	77.00	79.00	16,960	11,295	9,028	8,520
Mississippi	215	195	183	171	114.00	88.00	70.00	72.00	24,542	17,115	12,774	12,240
Arkansas	252	240	225	214	98.00	77.00	58.00	54.00	24,809	18,392	12,984	11,555
Louisiana	182	174	157	150	108.00	85.00	78.00	72.00	19,690	14,867	12,244	10,742
Oklahoma	738	720	705	680	84.00	64.00	46.00	41.00	61,904	46,131	32,340	28,183
Texas	1,050	1,015	980	940	100.00	78.00	58.00	54.00	105,036	78,719	57,302	50,626
Montana	669	669	650	643	61.00	50.00	42.00	39.00	40,949	33,766	27,490	24,985
Idaho	293	284	274	261	80.00	71.00	65.00	60.00	23,333	20,223	17,696	15,617
Wyoming	198	205	205	202	53.00	47.00	40.00	35.00	10,518	9,652	8,256	6,993
Colorado	421	421	415	400	79.00	63.00	56.00	48.00	33,375	26,612	23,133	19,229
New Mexico	183	180	180	184	69.00	60.00	51.00	46.00	12,650	10,724	9,122	8,456
Arizona	136	128	124	123	72.00	89.00	69.00	64.00	9,850	11,450	8,520	7,827
Utah	132	132	128	123	81.00	79.00	71.00	71.00	10,671	10,417	9,146	8,745
Nevada	61	60	58	57	62.00	59.00	48.00	57.00	3,795	3,553	2,800	3,231
Washington	296	282	270	257	96.00	83.00	71.00	71.00	28,310	23,388	19,048	18,243
Oregon	272	265	260	248	87.00	84.00	78.00	83.00	23,618	22,383	20,308	20,680
California	402	375	360	335	98.00	98.00	84.00	83.00	39,434	36,912	30,072	27,797
U. S	19,848	19,134	18,564	17,943	96.52	84.57	71.18	70.65	1,915,653	1,618,120	1,321,396	1,267,624

Division of Crop and Livestock Estimates.

TABLE 613.—*Horses: Number and value on farms, by States, January 1, 1920–1926*—Continued

State	Number Jan. 1—			Average value per head Jan. 1—			Farm value, Jan. 1—		
	1924	1925	1926 [1]	1924	1925	1926	1924	1925	1926 [1]
	Thousands	*Thousands*	*Thousands*	*Dollars*	*Dollars*	*Dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Maine	85	82	77	124.00	119.00	130.00	10,576	9,795	10,010
New Hampshire	34	31	27	113.00	105.00	100.00	3,842	3,255	2,700
Vermont	67	63	59	107.00	104.00	109.00	7,165	6,550	6,431
Massachusetts	46	44	41	136.00	123.00	117.00	6,260	5,427	4,797
Rhode Island	6	5	5	125.00	124.00	120.00	750	620	600
Connecticut	35	34	32	130.00	127.00	120.00	4,550	4,318	3,840
New York	465	447	426	111.00	107.00	110.00	51,587	47,915	46,860
New Jersey	60	57	53	116.00	109.00	107.00	6,960	6,210	5,671
Pennsylvania	433	416	393	100.00	95.00	101.00	43,354	39,721	39,693
Ohio	690	635	601	81.00	85.00	91.00	55,807	54,027	54,691
Indiana	570	557	527	67.00	69.00	78.00	38,298	38,258	41,106
Illinois	1,090	1,032	985	68.00	69.00	73.00	74,613	71,025	71,905
Michigan	520	496	474	81.00	83.00	87.00	42,046	41,136	41,238
Wisconsin	626	618	591	97.00	88.00	92.00	60,716	54,164	54,372
Minnesota	852	837	800	72.00	77.00	80.00	61,559	64,094	64,000
Iowa	1,240	1,192	1,140	75.00	72.00	73.00	93,353	85,501	83,220
Missouri	765	714	675	49.00	48.00	48.00	37,545	33,934	32,400
North Dakota	760	732	699	51.00	56.00	58.00	38,975	40,807	40,542
South Dakota	742	720	688	50.00	48.00	49.00	36,816	34,760	33,712
Nebraska	852	863	833	57.00	58.00	61.00	48,754	49,913	50,813
Kansas	958	938	896	43.00	46.00	48.00	41,112	43,304	43,008
Delaware	22	20	18	64.00	74.00	79.00	1,405	1,475	1,422
Maryland	119	117	112	77.00	74.00	77.00	9,203	8,695	8,624
Virginia	272	261	249	77.00	71.00	66.00	21,058	18,552	16,434
West Virginia	145	143	136	80.00	76.00	74.00	11,586	10,904	10,064
North Carolina	138	130	120	103.00	99.00	86.00	14,236	12,812	10,320
South Carolina	58	55	50	103.00	97.00	89.00	5,997	5,309	4,450
Georgia	64	56	51	82.00	85.00	80.00	5,267	4,751	4,080
Florida	36	31	30	98.00	94.00	91.00	3,545	2,910	2,730
Kentucky	330	314	296	56.00	50.00	49.00	18,516	15,820	14,504
Tennessee	270	255	238	66.00	60.00	53.00	17,816	15,361	12,614
Alabama	99	87	81	78.00	70.00	68.00	7,711	6,074	5,508
Mississippi	155	142	129	69.00	61.00	59.00	10,643	8,688	7,611
Arkansas	200	188	180	43.00	42.00	43.00	8,540	7,881	7,740
Louisiana	140	132	126	67.00	62.00	55.00	9,435	8,149	6,930
Oklahoma	640	614	593	35.00	40.00	36.00	22,516	24,782	21,348
Texas	900	857	827	56.00	54.00	48.00	50,296	46,342	39,696
Montana	611	596	576	33.00	32.00	28.00	19,859	19,123	16,128
Idaho	250	236	221	53.00	45.00	52.00	13,249	10,682	11,492
Wyoming	198	197	190	31.00	29.00	29.00	6,223	5,756	5,510
Colorado	385	367	352	45.00	43.00	47.00	17,248	15,666	16,544
New Mexico	184	187	175	40.00	38.00	37.00	7,330	7,111	6,475
Arizona	118	112	104	64.00	59.00	49.00	7,540	6,650	5,096
Utah	118	110	106	64.00	60.00	61.00	7,575	6,640	6,466
Nevada	53	50	47	56.00	56.00	51.00	2,979	2,792	2,397
Washington	251	242	233	72.00	63.00	63.00	17,982	15,180	14,679
Oregon	235	225	214	71.00	66.00	63.00	16,634	14,912	13,482
California	335	317	302	85.00	78.00	76.00	28,592	24,760	22,952
United States	17,222	16,554	15,778	65.48	64.18	65.08	1,127,619	1,062,511	1,026,905

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 614.—*Mules: Number and value on farms, by States, January 1, 1920–1926*

State	Number, Jan. 1—				Average farm value per head, Jan. 1—				Farm value, Jan. 1—			
	1920	1921	1922	1923	1920	1921	1922	1923	1920	1921	1922	1923
	Thousands	*Thousands*	*Thousands*	*Thousands*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
New York	7	7	8	8	158.00	144.00	140.00	129.00	1,106	1,008	1,120	1,034
New Jersey	6	6	6	5	176.00	165.00	155.00	135.00	1,056	990	930	675
Pennsylvania	55	55	55	55	141.00	141.00	126.00	126.00	7,754	7,728	6,930	6,939
Ohio	32	32	32	33	119.00	112.00	100.00	100.00	3,814	3,591	3,196	3,298
Indiana	100	101	101	102	123.00	111.00	87.00	81.00	12,315	11,162	8,831	8,274
Illinois	168	168	168	170	120.00	100.00	79.00	83.00	20,091	16,729	13,221	14,144
Michigan	6	6	6	6	110.00	107.00	104.00	98.00	660	642	624	585
Wisconsin	4	5	5	6	125.00	110.00	105.00	86.00	500	550	525	514
Minnesota	10	11	11	12	99.00	94.00	80.00	80.00	988	1,031	876	966
Iowa	82	84	96	97	113.00	104.00	84.00	88.00	9,302	8,725	8,040	8,492
Missouri	389	430	440	410	119.00	98.00	69.00	68.00	46,285	41,944	30,244	27,874
North Dakota	8	8	8	9	92.00	79.00	69.00	62.00	733	635	554	561
South Dakota	15	16	17	19	93.00	82.00	69.00	68.00	1,399	1,310	1,177	1,301
Nebraska	100	107	120	120	106.00	91.00	74.00	75.00	10,628	9,779	8,858	8,968
Kansas	243	279	284	305	114.00	92.00	63.00	64.00	27,731	25,614	17,986	19,465
Delaware	9	9	9	9	115.00	115.00	90.00	90.00	1,035	1,035	810	810
Maryland	33	32	32	32	134.00	124.00	114.00	114.00	4,437	3,983	3,644	3,634
Virginia	97	98	100	101	141.00	130.00	106.00	103.00	13,632	12,725	10,636	10,407
West Virginia	15	15	15	15	122.00	115.00	96.00	103.00	1,826	1,720	1,437	1,546
North Carolina	257	260	264	268	192.00	157.00	130.00	129.00	49,236	40,724	34,209	34,512
South Carolina	220	220	210	200	233.00	188.00	129.00	124.00	51,297	41,410	27,040	24,760
Georgia	406	400	380	365	217.00	154.00	99.00	105.00	88,250	61,542	37,767	38,416
Florida	45	45	45	45	198.00	168.00	149.00	139.00	8,912	7,575	6,685	6,237
Kentucky	293	285	280	287	130.00	111.00	82.00	77.00	38,026	31,689	22,932	22,041
Tennessee	353	363	370	370	142.00	111.00	87.00	87.00	50,009	40,413	32,301	32,165
Alabama	296	302	297	297	174.00	114.00	95.00	100.00	51,450	34,340	28,152	29,718
Mississippi	308	299	299	310	155.00	121.00	93.00	94.00	47,745	36,320	27,753	29,144
Arkansas	323	325	328	335	134.00	107.00	80.00	74.00	43,210	34,926	26,247	24,689
Louisiana	185	187	177	176	168.00	143.00	118.00	113.00	31,046	26,731	20,871	19,856
Oklahoma	337	337	350	360	120.00	90.00	67.00	60.00	40,521	30,355	23,434	21,736
Texas	885	905	925	965	144.00	111.00	85.00	80.00	127,582	100,160	78,706	77,602
Montana	9	9	10	10	88.00	84.00	67.00	56.00	794	755	670	562
Idaho	8	8	8	8	95.00	80.00	72.00	64.00	762	640	578	516
Wyoming	3	3	4	4	104.00	90.00	71.00	49.00	312	270	284	195
Colorado	31	32	34	36	102.00	91.00	70.00	62.00	3,170	2,912	2,380	2,228
New Mexico	20	24	27	29	104.00	90.00	73.00	67.00	2,086	2,160	1,968	1,929
Arizona	12	11	10	12	108.00	125.00	86.00	74.00	1,300	1,380	855	885
Utah	3	3	4	4	80.00	78.00	74.00	70.00	241	234	294	278
Nevada	2	3	3	4	80.00	80.00	65.00	66.00	160	240	195	263
Washington	23	22	24	25	113.00	95.00	90.00	84.00	2,589	2,066	2,154	2,091
Oregon	14	14	15	16	91.00	92.00	79.00	77.00	1,278	1,282	1,182	1,230
California	63	60	61	62	120.00	123.00	103.00	105.00	7,560	7,400	6,267	6,513
United States	5,475	5,586	5,639	5,702	148.46	117.52	89.14	87.17	812,828	656,455	502,563	497,044

Division of Crop and Livestock Estimates.

TABLE 614.—*Mules: Number and value on farms, by States, January 1, 1920–1926*—Continued

State	Number, Jan. 1—			Average farm value per head, Jan. 1—			Farm value, Jan. 1—		
	1924	1925	1926 [1]	1924	1925	1926	1924	1925	1926 [1]
	Thousands	*Thousands*	*Thousands*	*Dollars*	*Dollars*	*Dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
New York	8	8	8	109.00	107.00	104.00	871	854	831
New Jersey	5	5	5	124.00	125.00	114.00	620	625	570
Pennsylvania	55	55	55	113.00	105.00	113.00	6,216	5,787	6,226
Ohio	33	34	34	92.00	92.00	95.00	3,052	3,116	3,224
Indiana	102	103	101	75.00	76.00	86.00	7,606	7,812	8,736
Illinois	169	169	169	80.00	80.00	85.00	13,569	13,485	14,380
Michigan	7	7	7	84.00	83.00	90.00	586	582	630
Wisconsin	7	8	8	73.00	75.00	81.00	508	600	649
Minnesota	13	14	14	77.00	80.00	82.00	1,005	1,124	1,155
Iowa	99	99	100	86.00	82.00	85.00	8,512	8,162	8,531
Missouri	400	390	382	69.00	67.00	71.00	27,532	25,942	27,284
North Dakota	10	10	10	57.00	59.00	55.00	569	587	554
South Dakota	20	21	22	61.00	61.00	67.00	1,218	1,281	1,474
Nebraska	121	121	115	73.00	74.00	78.00	8,882	8,931	8,937
Kansas	282	260	244	61.00	63.00	66.00	17,099	16,372	16,089
Delaware	9	9	9	85.00	90.00	100.00	765	810	900
Maryland	31	31	31	104.00	94.00	104.00	3,214	2,911	3,219
Virginia	102	104	104	100.00	91.00	87.00	10,247	9,458	9,016
West Virginia	15	15	15	88.00	85.00	84.00	1,313	1,272	1,256
North Carolina	273	279	285	129.00	119.00	117.00	35,217	33,291	33,442
South Carolina	203	199	203	134.00	121.00	120.00	27,186	24,176	24,260
Georgia	350	338	341	109.00	114.00	111.00	38,280	38,685	38,002
Florida	45	45	45	142.00	139.00	134.00	6,377	6,240	6,020
Kentucky	293	301	304	67.00	61.00	61.00	19,545	18,439	18,455
Tennessee	360	352	355	81.00	74.00	71.00	29,091	25,946	25,375
Alabama	299	301	304	100.00	90.00	95.00	29,950	27,219	28,996
Mississippi	320	330	336	96.00	89.00	86.00	30,814	29,256	29,034
Arkansas	339	339	346	62.00	64.00	62.00	21,116	21,844	21,597
Louisiana	180	180	182	94.00	90.00	89.00	16,836	16,116	16,246
Oklahoma	360	369	373	56.00	61.00	57.00	20,104	22,607	21,160
Texas	1,005	1,042	1,052	87.00	83.00	75.00	87,701	86,177	78,444
Montana	11	11	11	51.00	47.00	52.00	566	514	576
Idaho	8	8	8	62.00	52.00	61.00	496	417	487
Wyoming	5	6	6	50.00	49.00	49.00	249	293	296
Colorado	38	39	39	61.00	57.00	59.00	2,314	2,213	2,293
New Mexico	31	33	34	59.00	58.00	54.00	1,843	1,911	1,845
Arizona	12	13	13	90.00	82.00	82.00	1,083	1,070	1,070
Utah	4	4	4	66.00	62.00	72.00	262	248	288
Nevada	4	5	5	60.00	64.00	72.00	238	320	360
Washington	26	27	27	80.00	68.00	68.00	2,089	1,840	1,848
Oregon	17	18	19	73.00	72.00	72.00	1,234	1,305	1,362
California	59	56	55	106.00	98.00	87.00	6,234	5,230	4,770
United States	5,730	5,758	5,780	85.90	82.51	81.30	492,209	475,068	469,887

Division of Crop and Livestock Estimates.

[1] Preliminary.

TABLE 615.—*Horses and mules:* [1] *Estimated yearly losses per 1,000 from disease, 1909–1925*

Year ended Apr. 30—	Losses per 1,000	Year ended Apr. 30—	Losses per 1,000	Year ended Apr. 30—	Losses per 1,000
1909	18.2	1915		1921	14.7
1910	19.9	1916	17.5	1922	15.7
1911	19.0	1917	16.9	1923	15.0
1912	21.9	1918	16.5	1924	15.2
1913	22.6	1919	15.7	1925	12.6
1914	20.6	1920	17.8		

Division of Crop and Livestock Estimates. As reported by crop reporters on May 1 for year ending April 30.

[1] Including mules since 1912.

TABLE 616.—*Horses and mules: Receipts at principal markets and at all markets reported, 1900–1925*

[Thousands—i. e., 000 omitted]

Year	Chicago	Denver	East St. Louis	Fort Worth	Kansas City	Omaha	South St. Joseph	South St. Paul	Sioux City	Total	All other markets reporting[1]	Total all markets reporting[1]
1900	99	23	145	(2)	103	60	13	27	31	501	----	----
1901	109	17	129	(2)	97	36	23	15	18	444	----	----
1902	102	24	109	5	77	42	20	8	19	406	----	----
1903	101	19	129	10	67	53	20	8	12	419	----	----
1904	106	13	181	18	68	47	29	6	4	472	----	----
1905	127	16	178	18	66	45	32	6	15	503	----	----
1906	127	17	166	21	70	42	28	9	19	499	----	----
1907	102	11	117	19	62	44	27	15	16	413	----	----
1908	92	11	109	12	56	40	23	7	13	363	----	----
1909	91	15	122	21	68	32	23	6	15	398	----	----
1910	83	16	130	34	70	30	28	5	16	412	----	----
1911	105	18	171	37	85	32	42	8	17	515	----	----
1912	93	15	164	49	73	33	39	5	10	481	----	----
1913	91	16	157	57	82	32	32	5	10	482	----	----
1914	106	17	148	48	87	31	25	6	10	478	----	----
1915	165	72	271	55	102	42	41	10	22	780	327	1,107
1916	205	53	267	79	123	27	27	12	17	810	668	1,478
1917	107	20	280	115	128	33	34	10	29	756	720	1,476
1918	88	15	242	79	85	22	39	7	23	600	616	1,216
1919	46	23	250	60	83	25	43	11	16	557	511	1,068
1920	43	18	141	45	72	19	30	10	23	401	324	25
1921	34	10	68	13	30	7	12	5	7	186	131	317
1922	32	13	95	29	38	9	16	2	8	242	201	443
1923	26	23	102	58	43	17	15	3	15	302	249	551
1924	21	37	64	46	36	12	11	4	14	245	223	468
1925	18	44	65	34	34	15	9	5	18	242	226	468
1925												
January	1	4	11	5	6	1	1	(3)	1	30	38	68
February	2	5	11	2	4	2	1	1	2	30	31	61
March	3	3	7	1	3	2	1	1	2	23	29	52
April	2	1	1	(3)	1	1	(3)	(3)	1	7	9	16
May	1	1	1	1	1	(3)	(3)	(3)	(3)	5	8	13
June	1	3	1	(3)	1	(3)	(3)	(3)	(3)	6	6	12
July	1	3	2	1	1	1	1	(3)	1	11	6	17
August	2	4	4	3	3	2	1	(3)	2	21	12	33
September	1	6	7	6	3	2	1	1	2	29	21	50
October	1	7	9	7	5	2	1	1	3	36	28	64
November	1	4	5	4	3	1	1	1	2	22	23	45
December	2	3	6	4	3	1	1	(3)	2	22	15	37

Division of Statistical and Historical Research. Prior to 1915 receipts compiled from yearbooks of stock yard companies; subsequent figures compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Figures prior to 1915 not available. [2] Not in operation. [3] Not over 500.

TABLE 617.—*Horses and mules: Receipts at all public stockyards, 1915–1925*

[Thousands—i. e., 000 omitted]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1915	97	95	95	88	98	103	94	74	85	111	97	70	1,107
1916	118	105	111	84	120	104	162	138	139	153	129	115	1,478
1917	148	95	117	93	68	63	83	58	129	236	223	163	1,476
1918	161	149	133	44	36	45	53	84	128	162	145	76	1,216
1919	115	87	71	53	37	43	53	92	148	130	146	93	1,068
1920	146	112	87	48	43	34	38	75	62	40	23	17	725
1921	35	41	44	25	18	14	11	17	22	36	29	25	317
1922	48	37	47	29	21	16	17	24	41	61	55	47	443
1923	86	54	61	36	20	14	17	32	50	75	59	47	551
1924	77	58	39	25	15	14	16	31	50	52	48	43	468
1925	68	61	52	16	13	12	17	33	50	64	45	37	468

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

TABLE 618.—*Horses and mules: Receipts at public stockyards in the United States, 1916–1925*

Market	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Albany, N. Y.	6,014	3,303				40			33	20
Amarillo, Tex.	14,390	13,367	14,655	15,014	12,804	2,050	3,331	6,230	6,994	11,616
Atlanta, Ga.			78,160	60,327	25,931	3,119	7,955	33,865	35,195	40,914
Augusta, Ga.		23,125	33,219	22,089	7,055	905	269	471	182	85
Baltimore, Md.	13,901	7,442	8,670	4,961	4,313	2,284	2,453	2,714	1,416	1,656
Boston, Mass.	8,106	627	253	276						
Buffalo, N. Y.	56,482	16,515	10,034	18,594	22,526	23,687	21,159	18,365	12,312	10,608
Cheyenne, Wyo.		5,539	3,824	2,076	1,782	965	3,264	1,365	1,406	1,975
Chicago, Ill.	205,449	107,311	87,820	45,762	43,020	33,723	31,689	26,065	21,030	17,683
Cincinnati, Ohio	19,671	27,279	18,521	18,880	14,181	5,699	4,248	4,244	3,486	3,039
Cleveland, Ohio		9,060	4,320	5,260	5,580	2,300	2,020	1,100	440	240
Dayton, Ohio	221	58	74	47				52	117	118
Denver, Colo.	52,800	19,758	14,599	22,936	17,591	9,639	13,485	22,591	36,844	43,922
Detroit, Mich.		13,755	3,544	1,835	2,584	667	821	1,847	2,572	1,114
East St. Louis, Ill.	266,818	279,837	241,751	250,311	141,230	67,756	95,048	101,535	64,012	65,433
El Paso, Tex.	23,385	15,052	9,126	16,295	13,931	9,574	6,106	6,758	5,879	18,531
Evansville, Ind.	658	993	1,080	1,135	962	43	192	412	761	579
Fort Wayne, Ind.								2		
Fort Worth, Tex.	79,209	115,233	78,881	60,363	45,362	13,086	28,610	58,437	46,071	34,233
Indianapolis, Ind.	29,444	61,692	19,608	9,080	8,814	2,710	2,481	1,409	1,269	1,240
Jacksonville, Fla.	526	131		18	6		14	154	286	1,339
Jersey City, N. J.	154,721	70,268	42,185	10,574	2,624	1,602	1,267	678	1,771	1,874
Kansas City, Mo.	123,141	127,823	84,628	82,852	71,797	30,453	38,310	42,987	36,288	34,059
Knoxville, Tenn.	7,378	8,254	6,430	7,214	4,160	2,276	4,057	9,122	5,999	6,030
Lancaster, Pa.	1,417	8,342	11,228	2,068	3,432	1,360	1,790	2,603	1,474	893
Laredo, Tex.								801	625	2,137
Los Angeles, Calif.								130	24	81
Louisville, Ky.	5,200	14,127	16,967	11,274	9,031	1,598	2,718	2,487	1,344	1,241
Marion, Ohio			141	977	2,444	836	914	480	336	218
Memphis, Tenn.	39,816	60,848	33,116	32,598	8,006	14,770	46,249	60,216	47,283	43,348
Milwaukee, Wis.	1,714	1,849	2,185	1,879	2,246	1,243	1,878	1,502	1,573	1,336
Montgomery, Ala.		7,169	24,102	22,291	11,969	4,002	14,133	4,801	9,430	12,369
Nashville, Tenn.	15,855	74,280	103,818	97,425	29,572	101			436	409
New Orleans, La.	852	2,614	556	368	1,254	51	224	268	657	1,206
New York, N. Y.	8,529	7,574	307	1,952	1,723	568	1,007	2,340	2,280	1,977
North Salt Lake, Utah	1,785	1,981	1,573	1,484	1,641	627	1,715	2,867	2,303	1,874
Ogden, Utah		25,425	18,809	6,467	5,630	1,460	1,387	2,359	1,970	2,139
Oklahoma City, Okla.	47,381	62,306	12,687	9,951	5,847	1,824	4,798	8,321	10,155	8,706
Omaha, Nebr.	27,486	32,781	22,212	25,201	18,751	6,779	8,871	16,869	12,435	15,332
Pasco, Wash.			159	380	303	126	320	226	235	398
Peoria, Ill.	764	637	125	171	535	501	475	351	591	541
Philadelphia, Pa.	11,002	9,892	7,800	7,222	5,792	2,731	2,836	2,902	2,065	2,417
Pittsburgh, Pa.	53,505	39,073	35,265	17,992	20,472	10,742	14,131	12,442	8,354	3,939
Portland, Oreg.	2,904	6,933	2,483	2,308	1,887	1,042	1,076	1,388	2,039	1,302
Pueblo, Colo.	8,250	6,665	3,798	3,812	3,563	857	1,314	1,429	2,671	2,718
Richmond, Va.	17,514	25,004	23,970	25,100	16,167	10,266	13,161	16,185	8,616	40
South St. Joseph, Mo.	27,206	33,584	39,260	43,380	29,768	11,580	15,961	15,199	11,068	8,861
South St. Paul, Minn.	11,777	9,959	6,541	11,228	10,488	4,848	2,053	3,309	3,578	5,478
San Antonio, Tex.	41,105	31,898	29,955	29,881	24,573	6,314	9,212	10,531	14,405	7,920
Seattle, Wash.	20		420	923	671	292	443	413	607	411
Sioux City, Iowa	16,717	29,391	23,306	16,272	23,238	7,262	7,954	14,921	13,935	17,739
Sioux Falls, S. Dak.		49	243	253	176	69	375	370	189	573
Spokane, Wash.	6,493	7,125	4,733	2,926	2,535	761	1,103	828	991	1,057
Toledo, Ohio	1,336	1,969	1,789	2,788	4,558	960	922	442	297	351
Washington, D. C.	178	1,556	396	30	60	43	220	64	18	16
Wichita, Kans.	17,146	19,312	11,150	16,750	24,714	10,885	17,936	22,863	21,358	19,250
Discontinued [1]	49,717	27,089	15,300	16,347	7,512	369	691	453		
Total	1,477,983	1,475,854	1,215,776	1,067,597	724,811	317,445	442,646	550,703	467,703	467,585

Division of Statistical and Historical Research. Compiled from data of the reporting service of the Division of Livestock, Meats, and Wool.

[1] Includes only those markets which have been totally discontinued.

TABLE 619.—*Colts foaled per 1,000 horses and mules on farms and ranges, 1910 and 1920–1926*

State and division	Census			Farms of crop reporters [1]						
	1910 [2]	1920 [3]	1925 [4]	1920	1921	1922	1923	1924	1925	1926
Maine	34	18	8	40	23	18	14	26	17	11
New Hampshire	24	22	7	33	12	12	10	2	0	11
Vermont	44	29	12	44	47	22	12	15	6	22
Massachusetts	15	22	7	29	13	12	5	10	5	14
Rhode Island	10	20	5	24	44	22	30	8	12	10
Connecticut	14	16	6	6	19	33	10	0	14	10
New York	43	24	17	41	35	21	18	15	11	12
New Jersey	25	13	9	20	7	15	8	4	6	7
Pennsylvania	55	28	16	42	44	30	24	30	24	31
North Atlantic	42.9	24.6	14.6	39.3	34.5	23.2	17.8	20.9	15.9	20.2
Ohio	82	38	26	64	64	70	57	34	36	37
Indiana	94	57	27	85	68	64	44	39	27	34
Illinois	102	68	35	91	85	70	50	48	49	44
Michigan	69	20	25	49	36	33	40	29	20	22
Wisconsin	76	35	29	56	53	45	25	18	25	26
Minnesota	85	50	30	76	63	49	36	36	32	36
Iowa	111	66	46	92	120	72	66	54	52	54
Missouri	119	96	48	121	110	79	56	53	54	46
North Dakota	98	81	37	116	74	66	86	52	47	40
South Dakota	109	90	50	112	68	97	85	70	57	60
Nebraska	108	81	42	108	110	73	78	54	46	53
Kansas	109	96	50	115	104	97	74	57	54	63
North Central	100.4	69.3	39.1	94.2	85.8	70.9	59.8	47.5	44.1	45.4
Delaware	66	22	16	40	67	24	39	15	11	25
Maryland	76	34	30	58	51	57	46	50	37	34
Virginia	88	40	29	82	71	68	47	47	42	42
West Virginia	94	38	27	78	67	43	56	39	24	40
North Carolina	28	16	8	43	40	27	26	13	9	15
South Carolina	11	10	7	32	20	16	9	7	6	19
Georgia	14	9	9	26	26	24	20	13	2	9
Florida	32	23	31	32	68	27	64	15	0	11
South Atlantic	47.4	21.9	16.8	49.1	44.7	35.7	32.6	24.6	18.3	22.6
Kentucky	92	62	37	100	78	70	46	43	40	35
Tennessee	99	74	48	95	102	82	64	51	33	33
Alabama	29	26	12	68	56	56	39	34	35	16
Mississippi	47	43	28	107	104	93	45	33	38	36
Arkansas	62	48	23	94	57	61	47	40	35	25
Louisiana	44	38	22	58	39	53	34	30	40	28
Oklahoma	95	86	43	130	121	90	75	59	49	45
Texas	79	48	29	83	95	92	76	60	47	36
South Central	76.0	56.4	32.2	95.3	89.7	81.1	61.4	49.6	42.0	34.4
Montana	138	127	74	157	97	122	96	106	91	70
Idaho	120	96	52	126	109	88	48	84	81	22
Wyoming	137	139	84	144	102	144	117	102	100	126
Colorado	107	101	50	137	100	78	86	56	46	53
New Mexico	100	84	74	117	280	137	166	124	153	106
Arizona	119	107	79	138	147	84	172	94	38	83
Utah	129	106	64	134	115	94	126	80	89	26
Nevada	138	114	88	159	108	144	116	116	135	32
Washington	103	67	36	76	86	81	70	56	48	18
Oregon	118	88	52	104	94	64	98	59	58	44
California	91	50	28	71	48	69	47	32	26	38
Far Western	113.0	96.1	58.0	121.5	105.4	97.7	91.3	77.5	72.5	56.2
United States	87.7	63.0	36.5	91.0	82.9	71.3	59.5	48.6	43.8	40.6

Division of Crop and Livestock Estimates.

[1] Number of horses and mules on Jan. 1 and number of colts born during preceding year on farms of about 30,000 crop reporters.

[2] 1910 census of all horses and mules adjusted to Jan. 1, basis with colts born during 1909.

[3] 1920 census of all horses and mules Jan. 1 with colts under 1 year Jan. 1.

[4] 1925 census of all horses and mules Jan. 1 with colts under 2 years Jan. 1, divided by 2 to approximate number under 1 year.

TABLE 620.—*Horses and mules: Farm value per head, by age groups, United States, January 1, 1910–1926*

Jan. 1—	Horses			Mules		
	Under 1 year old	1 and under 2 years	2 years and over	Under 1 year old	1 and under 2 years	2 years and over
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1910	46.05	72.63	116.57	56.76	84.53	128.36
1911	48.09	75.68	120.04	59.89	88.13	135.11
1912	45.75	71.96	114.24	56.12	83.00	129.46
1913	48.75	76.54	121.06	59.31	86.56	134.05
1914	47.95	74.87	119.77	57.45	83.87	133.76
1915	45.36	70.62	113.10	51.80	76.46	121.46
1916	44.30	69.08	111.34	51.59	76.82	123.55
1917	45.17	70.21	112.64	53.98	80.28	128.17
1918	45.20	70.21	114.30	57.61	86.32	139.88
1919	42.62	65.94	108.17	59.14	89.14	147.65
1920	37.22	58.81	103.52	60.16	90.14	160.55
1921	31.59	49.66	90.35	47.55	71.77	125.85
1922	26.50	41.07	75.61	35.55	52.82	94.81
1923	26.51	40.48	74.53	34.35	50.94	92.14
1924	24.68	37.36	68.64	31.83	47.06	90.42
1925	24.75	36.73	66.84	31.05	45.87	86.24
1926	25.90	39.00	68.11	31.66	46.74	84.94

Division of Crop and Livestock Estimates.

TABLE 621.—*Horses: Price per head received by producers, United States, 1910–1925*

Year	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Weighted average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1910	140	147	150	154	148	151	148	148	145	144	143	141	146
1911	143	144	145	147	146	145	139	141	139	137	136	134	141
1912	134	137	140	142	144	145	142	142	141	140	139	139	140
1913	140	146	146	148	145	146	143	141	141	138	136	135	142
Av. 1910–1913	139	144	145	148	146	147	143	143	142	140	138	137	142
1914	137	139	138	138	139	136	137	135	132	131	130	130	135
1915	130	132	132	132	133	132	134	131	131	129	127	126	130
1916	128	129	131	133	134	132	133	131	131	130	129	129	130
1917	129	131	133	136	138	137	135	132	132	130	129	129	132
1918	130	133	137	137	136	135	132	131	128	126	122	121	130
1919	120	121	124	127	129	127	127	125	119	114	113	113	121
1920	118	123	127	131	132	130	127	124	119	112	103	97	119
Av. 1914–1920	127	130	132	133	134	133	132	130	127	125	122	121	128
1921	96	98	101	100	98	98	94	93	89	85	82	81	92
1922	82	84	86	87	89	88	88	86	84	81	79	79	84
1923	81	85	85	86	88	87	85	78	82	80	78	75	82
1924	73	74	75	76	78	77	77	79	78	77	76	73	76
1925	73	78	81	83	82	81	81	80	77	76	75	74	78

Division of Crop and Livestock Estimates as reported by country dealers.

TABLE 622.—*Horses: Estimated price per head received by producers, by States, 1925*

State	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	145	147	140	135	140	123	130	147	132	135	127	126	136
New Hampshire	105	120	118	125	130	133	118	133	150	121	125	111	124
Vermont	95	110	116	150	155	133	162	125	133	113	116	138	129
Massachusetts	------	125	------	150	150	162	125	------	------	150	150	150	145
Rhode Island	125	140	------	155	160	125	125	150	------	150	150	------	142
Connecticut	150	140	146	150	160	141	150	133	150	150	162	142	148
New York	110	115	114	118	124	133	128	123	122	123	116	115	120
New Jersey	140	130	140	138	138	125	130	120	140	153	133	160	137
Pennsylvania	104	101	110	115	124	115	114	113	123	126	96	104	112
Ohio	91	91	96	92	90	99	99	99	99	93	93	91	94
Indiana	72	81	89	85	81	82	80	79	79	82	77	75	80
Illinois	78	87	94	90	91	85	76	91	80	81	83	80	85
Michigan	95	99	105	110	114	105	98	97	99	97	97	87	100
Wisconsin	98	110	111	112	111	108	109	110	111	115	101	102	108
Minnesota	91	95	100	105	107	105	103	98	93	96	93	89	98
Iowa	90	88	93	96	98	100	98	94	90	91	92	89	93
Missouri	50	55	57	54	58	58	56	56	54	59	52	55	55
North Dakota	67	69	75	85	89	87	90	85	74	74	70	69	78
South Dakota	58	70	73	70	71	63	71	61	66	63	67	58	66
Nebraska	72	82	85	87	85	84	86	82	74	76	77	77	81
Kansas	53	57	65	70	67	69	69	69	61	63	60	59	64
Delaware	70	65	------	68	------	87	75	60	58	65	67	55	67
Maryland	76	77	90	91	95	86	100	87	90	82	89	69	86
Virginia	75	76	82	80	81	74	78	72	63	65	67	58	73
West Virginia	80	79	84	86	97	82	81	98	82	75	77	76	81
North Carolina	92	90	96	97	89	80	95	90	84	88	81	90	89
South Carolina	97	98	110	100	96	99	85	87	81	77	79	79	91
Georgia	80	90	91	88	85	90	83	74	79	78	76	77	83
Florida	90	95	108	108	100	89	100	87	93	98	75	87	94
Kentucky	53	53	60	62	64	60	61	54	54	55	49	51	56
Tennessee	60	65	63	68	68	66	63	63	58	58	56	58	62
Alabama	67	68	74	78	67	70	73	69	69	67	65	69	70
Mississippi	65	63	66	68	59	68	66	67	61	66	66	60	65
Arkansas	48	55	54	58	53	60	61	54	52	52	53	51	54
Louisiana	52	52	60	57	53	55	63	55	50	60	61	59	56
Oklahoma	43	50	53	58	56	52	51	53	54	46	44	42	50
Texas	57	59	57	56	56	56	50	53	48	52	54	50	54
Montana	42	47	51	48	46	49	49	53	45	40	47	44	47
Idaho	60	66	63	57	54	65	72	62	73	52	64	69	63
Wyoming	42	40	35	40	40	32	40	41	49	40	37	34	39
Colorado	56	63	70	75	64	62	62	69	66	53	61	58	63
New Mexico	------	67	------	------	36	40	50	40	40	50	46	56	47
Arizona	55	------	------	50	60	41	74	------	45	40	41	43	50
Utah	78	70	74	78	82	85	84	83	82	76	78	77	79
Nevada	------	------	62	------	------	------	------	------	------	------	75	------	------
Washington	75	90	75	74	65	80	86	79	87	107	95	80	83
Oregon	70	90	85	92	88	80	81	86	80	68	73	84	81
California	88	101	102	105	105	97	92	102	95	78	93	95	96
United States	72.94	77.63	81.49	82.64	82.15	80.90	80.77	80.06	76.86	76.42	74.84	73.50	78.35

Division of Crop and Livestock Estimates as reported by country dealers.

POULTRY

TABLE 623.—*Poultry, dressed: Receipts, gross weight, at four markets, 1920–1925*

[Thousand pounds—i. e., 000 omitted]

BOSTON

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1920	3,934	1,749	1,597	1,037	1,464	2,221	1,858	1,696	2,096	2,628	5,911	7,895	34,086
1921	3,377	2,229	1,465	1,707	1,795	2,086	1,499	2,437	2,482	3,581	7,472	9,791	39,921
1922	4,175	2,765	2,478	1,705	2,551	2,883	2,091	2,198	2,479	3,306	7,488	10,444	44,563
1923	7,690	3,785	2,917	1,946	2,439	2,778	2,427	2,661	2,674	4,418	10,752	11,526	56,013
1924	6,210	4,607	3,072	2,235	2,602	2,952	3,492	2,856	3,270	4,402	11,842	13,724	61,264
1925	4,200	3,252	2,697	2,181	2,582	2,893	2,893	2,786	2,554	4,336	7,907	8,439	46,720
Av. 1921–1925	5,130	3,328	2,526	1,955	2,394	2,718	2,480	2,588	2,692	4,009	9,092	10,785	49,696

NEW YORK

1920	11,217	7,557	3,928	1,367	5,480	5,292	6,129	4,428	6,273	8,053	17,651	23,718	101,093
1921	11,441	7,006	5,190	5,021	4,883	6,150	5,314	8,992	10,277	11,887	21,182	27,208	124,551
1922	10,783	6,909	6,371	6,399	7,896	8,822	6,785	7,768	9,115	12,594	22,232	32,538	138,212
1923	21,739	12,335	8,390	6,916	6,804	8,589	9,414	9,497	9,653	16,509	26,822	27,289	163,948
1924	15,603	11,927	9,893	7,368	10,172	10,157	10,502	10,504	12,981	15,916	28,875	35,464	179,362
1925	14,400	10,871	7,949	8,119	10,245	10,717	11,668	11,110	12,409	16,696	28,857	27,216	170,257
Av. 1921–1925	14,791	9,810	7,559	6,765	8,000	8,887	8,737	9,574	10,887	14,720	25,594	29,943	155,266

PHILADELPHIA

1920	1,553	1,881	1,906	918	1,466	1,286	1,019	1,215	1,044	1,588	2,348	5,382	21,606
1921	1,498	1,071	1,411	1,005	1,303	1,565	1,226	1,419	1,587	2,020	2,882	5,905	22,892
1922	1,947	1,790	1,077	664	1,182	1,304	1,237	1,217	1,237	1,356	2,653	5,655	21,319
1923	2,206	1,530	1,388	1,042	1,055	1,509	1,343	1,618	1,348	1,749	3,281	6,542	24,611
1924	2,614	1,818	1,704	1,194	1,234	1,458	1,536	1,660	1,421	1,873	4,053	7,075	27,640
1925	2,818	2,030	2,183	1,450	1,343	1,638	1,739	1,810	1,552	1,924	4,702	6,106	29,295
Av. 1921–1925	2,217	1,648	1,553	1,071	1,223	1,495	1,416	1,545	1,429	1,784	3,514	6,257	25,151

CHICAGO

1920	6,646	2,687	980	816	1,512	2,369	2,379	2,659	3,370	4,001	10,752	19,153	57,324
1921	6,343	3,328	2,794	2,104	2,421	2,524	2,097	2,615	3,804	4,157	15,723	17,082	64,992
1922	5,345	3,042	3,394	2,744	2,744	3,597	3,590	4,250	4,290	4,178	13,167	23,320	73,661
1923	11,497	5,208	4,057	2,532	2,912	3,329	3,679	4,018	4,724	5,411	15,163	27,743	90,273
1924	12,723	8,043	5,675	4,385	3,311	3,295	4,042	2,523	2,196	4,791	15,675	21,805	88,464
1925	6,167	3,230	2,219	1,573	1,996	2,239	1,376	1,760	2,168	4,303	20,022	25,033	72,086
Av. 1921–1925	8,415	4,570	3,628	2,668	2,677	2,997	2,957	3,033	3,436	4,568	15,950	22,997	77,895

TOTAL

1920	23,350	13,874	8,411	4,138	9,922	11,168	11,385	9,998	12,783	16,270	36,662	56,148	214,109
1921	22,659	13,634	10,860	9,837	10,402	12,325	10,136	15,463	18,150	21,645	47,259	59,986	252,356
1922	22,250	14,506	13,320	11,512	14,373	16,606	13,703	15,433	17,121	21,434	45,540	71,957	277,755
1923	43,123	22,858	16,752	12,436	13,210	16,205	16,863	17,794	18,399	28,087	56,018	73,100	334,845
1924	37,150	26,395	20,344	15,182	17,319	17,862	19,572	17,543	19,868	26,982	60,445	78,068	356,730
1925	27,585	19,383	15,048	13,323	16,166	17,487	17,676	17,466	18,683	27,259	61,488	66,794	318,358
Av. 1921–1925	30,553	19,355	15,265	12,458	14,294	16,097	15,590	16,740	18,444	25,081	54,150	69,981	308,009

Division of Statistical and Historical Research. Compiled from reports of the Division of Dairy and Poultry Products.

TABLE 624.—*Poultry, dressed: Receipts, gross weight, at six markets by State of origin, 1922–1925*

[Thousand pounds—i. e., 000 omitted]

BOSTON

State	1922	1923	1924	1925											
				Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Illinois	19,618	23,308	20,155	12,292	1,353	782	828	718	724	619	674	705	791	1,185	1,858	2,055
Indiana	5,939	6,558	7,382	6,524	564	572	494	447	588	497	472	480	489	668	686	567
Iowa	4,422	7,131	6,834	6,957	764	380	338	270	356	561	663	476	419	964	875	891
Ohio	1,708	1,141	1,216	255	36	31	7	3	4	37	22	15	5	1	53	41
Kansas	1,454	2,114	2,864	3,566	257	367	207	162	179	277	266	412	237	298	670	234
New York	1,454	1,850	1,111	1,045	13	9	207	70	74	85	87	14	16	75	272	123
Oklahoma	1,253	1,043	1,737	1,699	108	191	------	105	140	173	85	123	101	68	448	157
Minnesota	1,076	2,222	3,878	3,929	286	245	74	130	89	246	256	329	274	469	594	937
Michigan	1,015	527	911	622	51	11	27	1	52	9	1	------	3	54	205	208
Kentucky	1,005	1,330	854	822	45	1	1	28	2	------	------	------	(1)	(1)	490	257
Missouri	774	1,086	2,540	1,822	267	250	274	78	126	179	182	52	------	52	138	224
Wisconsin	680	291	612	375	62	18	------	------	17	------	------	------	------	124	87	67
Maine	647	791	706	706	44	33	18	10	7	15	19	28	73	176	188	98
Nebraska	471	682	1,336	1,707	122	220	76	88	143	116	136	114	88	153	118	333
Massachusetts	413	357	344	205	13	8	11	10	9	9	14	9	14	27	29	52
Vermont	200	149	105	74	4	3	(1)	4	(1)	1	(1)	1	2	10	36	13
Tennessee	65	39	73	118	(1)	(1)	------	------	------	------	------	------	12	------	53	53
New Hampshire	53	47	50	41	3	1	1	1	1	4	3	3	4	6	8	6
Pennsylvania	49	72	114	180	2	------	102	------	------	------	------	------	25	(1)	51	(1)
Maryland	39	59	92	11	(1)	------	------	------	------	------	11	------	------	------	(1)	------
North Dakota	14	294	314	237	30	19	6	(1)	------	------	------	22	------	------	12	148
South Dakota	3	121	101	92	1	1	1	(1)	24	44	------	------	------	------	------	21
Texas	(2)	(2)	6,185	2,797	125	89	22	18	------	------	------	------	------	------	970	1,573
Other States	2,189	4,681	1,750	467	52	21	3	17	47	21	2	3	1	6	66	228
Canada	22	120	------	174	------	------	------	21	------	------	------	------	------	(1)	(1)	153
Total	44,563	56,013	61,264	46,720	4,200	3,252	2,697	2,181	2,582	2,893	2,893	2,786	2,554	4,336	7,907	8,439

CHICAGO

Iowa	19,001	18,654	21,023	21,538	1,585	603	290	523	619	954	484	283	246	1,490	6,084	8,377
Illinois	18,720	17,497	13,184	4,517	361	204	99	45	62	112	121	204	111	186	1,301	1,711
Wisconsin	7,555	7,372	7,771	5,384	352	233	202	85	47	56	79	123	170	359	1,912	1,766
Minnesota	7,310	10,764	11,425	10,267	1,382	665	304	171	58	92	121	64	165	353	2,941	3,951

[1] Not over 500 pounds.

[2] Included in other States.

91044°—26——77

TABLE 624.—*Poultry, dressed: Receipts, gross weight, at six markets by State of origin, 1922–1925*—Continued

[Thousand pounds—i. e., 000 omitted]

CHICAGO—Continued

State	1922	1923	1924	1925											
				Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Missouri	3,952	6,231	5,980	4,621	211	232	405	180	325	63	31	245	455	459	1,068	947
South Dakota	3,348	4,509	6,396	5,954	617	368	237	88	94	155	118	79	265	612	1,605	1,726
North Dakota	3,292	7,594	5,984	5,714	471	321	208	56	43	12	6	10	27	172	1,851	2,537
Kansas	2,499	3,602	3,262	3,411	230	76	68	21	203	243	171	194	235	339	932	699
Nebraska	1,959	1,813	1,690	2,149	316	234	186	175	111	127	49	61	78	77	190	545
Indiana	1,347	818	849	731	57	45	45	5	58	45	8	233	38	6	69	122
Kentucky	849	937	508	80	1	11	23	2	2	2	11	2	3	(1)	14	9
Oklahoma	801	2,217	2,164	2,476	81	86	32	133	169	185	45	92	225	130	862	435
Texas	709	4,507	4,077	1,802	232	41	24	(1)	76	69	27	21	77	20	341	874
Tennessee	694	810	564	186	2	3	4	2	9	2	47	76	1	2	28	10
Michigan	332	276	186	82	9	5	23	6	5	(1)	(1)	1	(1)	1	18	14
Montana	271	1,500	2,095	1,738	135	68	35	13	10	44		(1)		35	546	852
Arkansas	256	372	315	117	8	8	20	6	9	4	12	7	3	2	15	23
New York	247	335	339	385	9	20	2	41	51	27	37	61	65	56	12	4
Mississippi	169	94	49	12	1	2	1	2	1	(1)	(1)	1	1	1	1	1
Idaho	69	40	75	131	(1)									(1)	(1)	131
Colorado	63	80	169	390	99	11	5	3	(1)	(1)	4	1	1	(1)	176	90
Wyoming	17	39	109	81	4	2	2	(1)					(1)	(1)	28	45
Other States	173	182	200	179	4	2	4	16	44	46	5	2	2	3	28	23
Canada	28	30		141												141
Total	73,661	90,273	88,464	72,086	6,167	3,230	2,219	1,573	1,996	2,239	1,376	1,760	2,168	4,303	20,022	25,033

NEW YORK

Illinois	40,911	48,267	57,246	45,861	4,921	4,042	2,881	3,435	3,352	2,993	2,617	2,332	3,618	4,412	6,038	5,220
Indiana	17,021	15,814	14,886	15,215	1,605	1,419	1,255	953	1,121	1,142	711	744	769	1,486	1,793	2,217
Iowa	15,854	19,520	18,775	18,776	2,047	1,078	414	364	391	647	1,148	1,108	1,111	2,408	4,117	3,943
Missouri	10,522	14,630	18,629	17,148	1,659	979	921	628	878	909	1,339	1,316	1,280	1,824	2,823	2,592
Kansas	10,174	15,151	8,429	11,379	458	628	488	371	492	547	832	999	1,180	1,604	2,121	1,659
Texas	5,296	7,266	12,108	6,665	396	183	163	43	98	196	86	138	101	63	2,325	2,871
Ohio	5,113	4,131	4,337	4,352	478	257	306	169	95	414	229	305	159	500	869	571
Minnesota	4,412	6,382	9,143	9,372	619	438	168	149	150	299	733	732	742	1,251	1,762	2,329
Tennessee	3,964	3,445	4,670	2,773	152	96	82	40	258	92	276	323	321	208	640	285
Kentucky	3,873	5,524	5,082	4,361	194	111	220	469	601	389	150	258	388	340	733	499

New York	3,572	3,062	3,119	11,459	238	211	334	909	1,796	2,111	2,167	1,457	923	571	541	196
Nebraska	2,515	3,036	4,610	4,288	382	563	244	131	349	304	319	229	225	422	444	675
Oklahoma	2,254	2,704	2,553	3,105	110	52	(1)	58	(1)	129	204	291	366	119	1,206	576
Virginia	1,904	1,956	2,588	1,899	62	26	8	4	19	81	188	177	182	335	586	231
Michigan	1,901	1,683	1,399	702	80	10	41	4	62	75	37	95	95	37	83	83
Wisconsin	1,503	2,364	2,862	3,058	104	152	34	78	152	88	143	156	328	368	848	607
New Jersey	1,395	1,552	1,661	1,303	273	208	46	32	41	35	39	29	39	88	168	365
Maryland	1,226	860	959	1,021	65	35	17	18	17	45	59	56	74	109	260	266
Pennsylvania	1,220	1,095	1,148	922	35	32	20	63	129	48	86	70	53	94	173	119
South Dakota	976	1,140	1,299	1,795	186	95	31	1	5	14	17	104	114	252	324	652
Massachusetts	848	632	1,408	1,146	118	4	105	86	107	70	153	100	135	40	135	93
California	649	1,061	528	459	35	107	84	35	52	11	10	9	35	9	9	63
North Dakota	165	769	515	668	43	35	11							2	188	389
Arkansas	129	326	(2)	760	20	77	22		20	54		38	99	64	238	128
Delaware	109	64	84	91	7	4	6	4	4	8	8	7	7	6	11	19
Colorado	(2)	(2)	530	434	74	21									130	209
Washington	(2)	238	173	205	22		24		23	12	63	31	30			
Idaho	(2)	(2)	242	176									25		119	32
Montana	(2)	(2)	203	123	1	1									79	42
Other States	503	814	601	462	16	7	15	37	33	4	54	6	5	82	100	103
Canada	203	532	175	279	(1)			38	(1)							241
Total	138,212	163,948	179,362	170,257	14,400	10,871	7,949	8,119	10,245	10,717	11,668	11,110	12,409	16,696	28,857	27,216

PHILADELPHIA

Illinois	7,165	9,497	9,456	8,728	1,024	716	938	538	381	506	690	594	303	421	1,278	1,339
Virginia	2,241	2,588	2,448	2,331	143	110	117	115	113	94	101	70	89	110	542	727
Indiana	1,907	1,762	1,231	1,750	66	68	245	133		166	72	87	74	153	324	362
Pennsylvania	1,372	1,260	919	901	46	44	53	52	59	59	68	56	60	65	104	235
Minnesota	1,274	2,389	2,252	2,732	324	118	102	20	25	200	132	210	197	202	334	868
Ohio	1,153	820	1,206	741	185	101	39	5	20	79	14	51	2	58	92	95
Missouri	1,088	622	1,002	2,315	146	222	152	145	120	158	223	231	161	203	323	231
Iowa	1,017	1,124	1,883	2,700	314	223	143	77	168	28	113	178	249	290	424	493
West Virginia	985	957	982	1,034	64	51	55	60	60	53	50	26	38	39	198	340
Kansas	660	655	932	910	217	111	95	56	45	74	14	28	28	64	81	97
New York	424	368	1,947	676	1	122		86	57	16	61	89	77	49	52	66
Wisconsin	396	406	268	697	40	1	20				22	4	46	59	199	315
Oklahoma	321	446	880	1,302	64	78	115	110	177	140	66	108	65	45	151	183
Delaware	262	138	77	77	5	1	10	5	3	5	7	2	1	3	11	24
Texas	213	130	798	303			11			21					93	178
Maryland	201	256	162	233	19	4	8	22	10	15	12	15	6	25	68	29
Nebraska	167	298	453	377	55	9	3	(1)			22		20	20	129	119
Michigan	142	36	39	256	8	6	3					12	29	48	81	69
Kentucky	81	68	459	171	24	(1)	52	22	57						12	4
New Jersey	63	71	227	15	1	1	1			12		(1)				
South Dakota	45	16	17	321	4	4	1		18	10	49	46	104	27	26	32

[1] Not over 500 pounds.

[2] Included in other States.

TABLE 624.—*Poultry, dressed: Receipts, gross weight, at six markets by State of origin, 1922–1925*—Continued

[Thousand pounds—i. e., 000 omitted]

PHILADELPHIA—Continued

State	1922	1923	1924	1925												
				Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
North Dakota	4	650	595	436	46	37	17	1			22			7	103	203
Other States	138	154	307	289	22	3	3	3	30	2	1	3	3	36	86	97
Total	21,319	24,611	27,640	29,295	2,818	2,080	2,183	1,450	1,343	1,638	1,739	1,810	1,552	1,924	4,702	6,106

SAN FRANCISCO

California	3,397	4,178	4,178	2,708	501	311	36	48	55	251	169	116	85	82	374	680
Kansas	496	349	459	648	125		26	87	55			27		48	82	198
Oregon	280	278	414	464	83	37	29		1	68	20	16	16	11	16	167
Washington	149	339	339	268	14	6	87	6	27	7	1	4	13	45	30	28
Illinois	102	255	164	147				26	24	67	30					
Nevada	57	175	250	58		8									29	21
Idaho	(1)	218	336	633	29	23	30	21		15	36	12	6	58	169	234
Other States	485	121	313	689	65	133	62	28	25	23		2	1	3	84	263
Total	4,966	5,913	6,453	5,615	817	518	270	216	187	431	256	177	121	247	784	1,591

[1] Not over 500 pounds.

TABLE 624.—*Poultry, dressed: Receipts, gross weight, at six markets, by State of origin, 1922–1925*—Continued

[Thousand pounds—i. e., 000 omitted]

LOS ANGELES

State	1925												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
California	623	129	57	39	58	28	5	15	35	21	82	79	75
Arizona	170	12	5	1	------	(1)	1	------	------	------	(1)	133	18
Colorado	104	1	1	1	(1)	(1)	1	------	2	30	------	29	39
Idaho	515	167	37	31	1	4	13	8	9	3	21	29	192
Illinois	69	(1)	------	------	23	------	39	6	------	------	------	------	1
Iowa	44	24	------	------	------	------	------	------	20	------	------	------	------
Kansas	1,033	145	73	89	35	35	30	36	28	58	71	330	103
Montana	86	43	2	7	------	------	20	4	------	------	------	5	5
Nebraska	192	1	34	------	------	------	------	(1)	------	------	------	53	104
Nevada	60	1	1	22	------	------	------	------	------	------	------	28	8
New Mexico	155	12	10	1	3	4	4	4	2	3	8	38	66
New York	90	------	8	------	7	------	------	------	7	1	4	18	45
Oklahoma	526	8	3	1	75	28	1	9	7	5	89	127	173
Oregon	161	4	14	32	1	------	9	------	------	11	3	1	86
Texas	465	3	4	29	------	1	1	26	29	------	------	66	306
Utah	261	2	(1)	------	------	------	------	2	29	------	------	72	156
Washington	36	------	2	4	------	------	------	------	------	29	------	1	------
Wisconsin	73	(1)	------	------	------	35	------	------	------	------	38	------	------
Wyoming	113	------	------	------	------	------	------	------	------	------	------	------	113
Other States	25	------	------	------	------	------	25	------	------	------	------	------	------
Total	4,801	552	251	257	203	135	149	110	168	161	316	1,009	1,490

Division of Statistical and Historical Research. Compiled from monthly reports of the Division of Dairy and Poultry Products.

[1] Not over 500 pounds.

TABLE 625.—*Frozen poultry: Cold-storage holdings, United States, 1916–1925*

[Thousand pounds—i. e., 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1916	------	------	------	------	17,847	6,559	6,216	7,032	8,882	20,041	31,175	27,139
1917	32,184	35,601	27,796	25,988	67,242	64,286	60,194	54,132	56,093	46,737	51,743	49,561
1918	64,557	68,238	56,950	44,115	26,523	18,929	17,652	18,756	23,034	29,798	44,433	71,238
1919	108,722	119,675	109,627	92,897	71,162	55,616	49,212	40,573	32,918	30,492	33,139	54,749
1920	87,512	92,253	78,421	61,436	40,525	30,535	24,790	22,364	21,331	22,953	31,070	49,046
1921	79,025	81,096	79,001	62,315	47,651	35,408	27,268	21,188	20,064	25,602	34,876	65,167
1922	103,697	103,350	88,709	68,471	50,840	38,602	34,837	30,659	27,671	25,984	30,238	51,781
1923	100,170	121,632	113,503	94,872	74,562	57,274	49,100	41,250	34,131	33,142	40,363	63,274
1924	93,434	99,486	93,497	76,067	52,068	39,299	34,886	33,604	33,837	40,070	55,139	87,939
1925	133,990	138,189	130,513	108,608	82,732	68,126	58,562	53,558	47,946	44,345	53,787	86,733
Average 1921–1925	102,063	108,750	101,045	82,066	61,570	47,742	40,930	36,051	32,730	33,829	42,881	70,979

Cold Storage Report Section.

TABLE 626.—*Poultry (live): International trade, average 1909–1913, annual 1922–1924*

[Thousands—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Canada	15	(1)	418	609	473	579	604	820
China	15	2,462	31	3,743	27	3,639	52	4,989
Italy [2]	2,010	9,606	3,967	2,575	5,552	2,742	3,674	4,009
Netherlands	(3)	(3)	63	339	83	247	83	1,426
PRINCIPAL IMPORTING COUNTRIES								
Belgium [2]	1,797	685	1,299	1,412	1,024	2,176	940	2,646
Denmark	26	2	2	(4)	1 [2] 1	(4) (2,4)	(3) [2] 1	1 [2] 1
France [2]	8,967	795	17,500	299	21,253	1,041	24,441	665
Germany:								
Geese	8,111	32	54	1	25	(3)	594	1
Other poultry [2]	29,829	278	339	76	415	36	5,736	13
Switzerland [2]	1,382	28	879	4	987	5	954	8
United Kingdom	877	50	239	14	1,170	18	1,404	26
United States [2]	(1)	(1)	878	455	1,249	543	1,779	806
Total of those reported in number	9,044	2,546	807	4,706	1,779	4,483	2,737	7,263
Total of those reported in pounds	43,985	11,392	24,862	4,851	30,180	6,543	37,525	8,148

Division of Statistical and Historical Research. Official sources.

[1] Expressed only in value. [2] Reported in thousands of pounds instead of thousands of poultry.
[3] Not separately stated.
[4] Less than 500.

TABLE 627.—*Poultry (dead): International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	(1)	(1)	-------	1,119	-------	1,036	-------	1,148
Austria-Hungary	371	9,854	-------	-------	-------	-------	-------	-------
Belgium	232	1,649	159	290	138	901	19	1,233
China	(2)	1,211	(2)	1,989	(2)	2,837	(2)	3,281
Finland	373	1,162	1	797	3	914	-------	1,170
France	2,920	12,296	3,699	6,627	3,666	10,546	2,466	14,960
Italy	288	6,019	1,029	3,786	792	4,075	921	4,085
Netherlands	(2)	(2)	44	933	68	1,653	95	3,523
United States	(2)	(2)	1,661	[3] 6,107	2,183	[3] 5,846	2,160	[3] 4,062
PRINCIPAL IMPORTING COUNTRIES								
Austria	-------	-------	3,747	1,052	7,560	491	12,878	615
Cuba	76	-------	147	-------	203	-------	-------	-------
Denmark	1,765	10	866	39	522	17	327	31
Germany	18,875	535	65	69	166	44	8,775	20
Norway	63	-------	75	(4)	60	16	-------	-------
Sweden	349	12	284	2	270	1	297	3
Switzerland	8,319	13	4,245	4	4,884	12	5,783	3
United Kingdom	10,994	127	18,644	272	34,684	321	30,038	580
Total 17 countries	44,625	32,888	34,666	23,086	55,199	28,710	64,359	34,694

Division of Statistical and Historical Research. Official sources.

[1] Expressed only in value.
[2] Not separately stated.
[3] Includes some game.
[4] Less than 500 pounds.

TABLE 628.—*Chickens: Estimated price per pound, received by producers, United States, 1910–1925*

Year beginning July—	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	Weighted average
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1910	12.2	12.0	11.8	11.4	11.0	10.6	10.6	10.6	10.7	10.9	11.0	11.1	11.0
1911	11.2	11.2	11.0	10.6	10.0	9.7	10.0	10.4	10.6	11.0	11.1	11.0	10.4
1912	11.2	11.3	11.4	11.4	11.0	10.8	10.8	11.0	11.4	11.7	11.9	12.0	11.2
1913	13.0	12.8	12.7	13.0	11.4	11.3	11.5	12.0	12.4	13.0	12.7	13.1	12.0
Av. 1910–1913	11.9	11.8	11.7	11.6	10.8	10.6	10.7	11.0	11.3	11.6	11.7	11.8	11.2
1914	13.4	13.1	12.8	12.0	11.1	10.7	10.9	11.3	11.7	11.9	12.0	12.2	11.5
1915	12.2	12.2	12.0	11.8	11.5	11.2	11.5	12.1	12.5	13.1	13.6	14.0	12.0
1916	14.1	14.1	14.2	14.4	13.9	13.6	14.1	15.1	15.7	17.3	17.5	17.7	14.6
1917	17.4	16.7	18.4	18.5	17.0	17.5	18.4	20.3	20.2	20.7	20.6	21.3	18.4
1918	23.2	23.4	23.6	22.2	21.7	22.4	22.1	21.8	23.4	25.7	26.7	26.4	23.0
1919	26.8	26.1	25.0	23.3	22.0	22.0	23.3	25.7	26.9	28.4	28.0	27.4	24.2
1920	28.4	26.6	26.9	24.6	22.9	20.6	21.7	22.3	22.8	22.2	21.8	21.5	22.8
Av. 1914–1920	19.4	18.9	19.0	18.1	17.2	16.9	17.4	18.4	19.0	19.9	20.0	20.1	18.1
1921	21.7	21.4	20.2	19.1	18.6	18.2	18.9	19.0	19.4	20.0	20.2	20.6	19.3
1922	20.7	18.9	18.6	18.1	17.2	17.2	17.3	18.6	18.8	19.4	20.1	20.3	18.2
1923	20.6	19.8	19.7	19.0	17.7	16.6	17.5	18.2	18.9	19.4	20.3	20.5	18.3
1924	20.2	20.0	19.8	19.4	18.5	17.9	18.5	19.1	20.0	21.1	22.0	21.6	19.2
1925	21.4	20.8	20.4	20.0	19.2	19.5							

Division of Crop and Livestock Estimates.

TABLE 629.—*Turkeys: Estimated price per pound, received by producers, United States, 1912–1925*

Year beginning October—	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Year beginning October—	Oct. 15	Nov. 15	Dec. 15	Jan. 15
	Cents	*Cents*	*Cents*	*Cents*		*Cents*	*Cents*	*Cents*	*Cents*
1912	13.6	14.4	14.8	14.9	1919	26.6	28.3	31.1	32.0
1913	14.6	15.2	15.5	15.5	1920	30.0	31.8	33.1	33.0
1914	14.1	14.1	14.5	14.5	1921	25.7	28.2	32.5	30.7
1915	13.7	14.8	15.5	15.6	1922	25.1	29.5	32.3	29.7
1916	17.0	18.6	19.6	19.5	1923	26.6	27.9	24.5	23.1
1917	20.0	21.0	23.0	22.9	1924	23.3	24.2	25.8	26.2
1918	23.9	25.7	27.0	27.3	1925	24.0	28.3	31.1	31.7

Division of Crop and Livestock Estimates

EGGS

TABLE 630.—*Eggs: Receipts, at five markets, 1917–1925*

[Thousand cases—i. e., 000 omitted]

BOSTON

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1917	56	75	171	252	318	193	113	87	84	80	43	30	1,502
1918	31	59	192	309	305	171	133	119	91	96	46	52	1,604
1919	67	116	184	327	235	189	148	128	80	97	48	40	1,659
1920	72	113	149	253	384	204	119	110	95	66	49	34	1,648
1921	84	138	206	359	294	183	137	130	100	88	52	52	1,823
1922	101	133	214	403	312	224	143	105	85	106	74	70	1,970
1923	99	106	244	285	381	219	128	131	101	108	73	69	1,944
1924	91	97	185	282	367	212	163	121	85	90	64	72	1,829
1925	61	129	222	303	282	206	169	126	102	112	58	63	1,833
Av. 1921–1925	87	121	214	326	327	209	148	123	95	101	64	65	1,880

TABLE 630.—*Eggs: Receipts, at five markets, 1917–1925*—Continued

[Thousand cases—i. e., 000 omitted]

NEW YORK

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1917	143	139	405	747	738	565	395	337	333	284	169	102	4,357
1918	106	155	712	908	681	551	483	450	333	288	183	177	5,027
1919	214	486	667	1,026	911	669	532	438	377	318	192	178	6,068
1920	207	315	618	563	697	725	470	370	334	272	209	211	4,991
1921	314	476	999	1,012	742	681	525	517	440	362	251	260	6,579
1922	335	424	919	1,178	994	784	574	427	381	337	226	242	6,821
1923	386	447	981	924	1,163	796	596	528	416	377	270	272	7,156
1924	301	410	717	1,082	970	789	599	429	405	361	221	253	6,543
1925	325	550	872	1,115	871	838	550	490	427	328	208	320	6,894
Av. 1921–1925	332	461	898	1,062	948	778	569	478	414	353	235	271	6,799

PHILADELPHIA

1918	----	----	112	164	190	164	147	107	102	112	63	56	1,217
1919	64	100	174	301	271	185	129	115	107	119	76	63	1,704
1920	76	81	120	164	242	180	107	116	118	81	57	54	1,396
1921	64	120	202	237	235	158	121	145	124	100	66	70	1,642
1922	109	113	192	316	273	142	126	124	108	76	60	64	1,703
1923	104	111	179	187	278	196	131	128	141	110	74	88	1,727
1924	88	96	152	270	249	158	139	117	108	90	50	78	1,595
1925	77	121	161	279	196	188	117	99	121	79	65	69	1,572
Av. 1921–1925	88	112	177	258	246	168	127	123	120	91	63	74	1,648

CHICAGO

1917	118	86	376	927	1,200	897	626	450	361	295	193	150	5,679
1918	103	29	415	1,027	926	733	564	460	338	246	124	85	5,050
1919	101	253	458	1,024	915	767	401	275	220	125	51	27	4,617
1920	109	251	458	840	800	620	380	260	217	132	47	40	4,154
1921	133	356	679	750	684	460	297	258	203	137	86	114	4,155
1922	210	296	525	887	898	695	389	300	191	140	82	71	4,684
1923	198	308	619	775	943	765	424	332	276	191	84	96	5,009
1924	176	347	519	823	879	637	458	318	228	156	76	62	4,679
1925	102	329	514	781	775	715	406	327	226	145	58	122	4,498
Av. 1921–1925	164	327	571	803	836	654	395	307	224	152	77	93	4,605

SAN FRANCISCO

1917	50	76	94	91	92	79	52	45	35	37	28	37	716
1918	53	81	80	93	83	71	51	39	34	27	26	29	667
1919	48	59	73	83	93	80	66	62	42	32	27	33	698
1920	44	55	102	114	80	76	67	55	42	43	36	43	757
1921	58	71	123	109	100	79	62	57	44	40	33	35	811
1922	54	59	102	118	106	81	72	63	51	45	42	45	838
1923	65	60	95	97	87	92	70	61	54	58	54	62	855
1924	58	56	81	82	79	75	72	57	50	51	46	53	760
1925	53	47	77	85	69	78	73	64	54	47	44	52	743
Av. 1921–1925	58	59	96	98	88	81	70	60	51	48	44	49	801

TOTAL

1919	494	1,014	1,556	2,761	2,425	1,890	1,276	1,018	826	691	394	341	14,686
1920	508	815	1,447	1,934	2,203	1,805	1,143	911	806	594	398	382	12,946
1921	653	1,161	2,209	2,467	2,055	1,561	1,142	1,107	909	727	488	531	15,010
1922	809	1,025	1,952	2,902	2,583	1,926	1,304	1,019	816	704	484	492	16,016
1923	852	1,032	2,118	2,268	2,852	2,066	1,349	1,180	988	844	555	587	16,691
1924	714	1,006	1,654	2,539	2,544	1,878	1,431	1,042	876	748	457	524	15,406
1925	618	1,176	1,846	2,563	2,193	2,025	1,315	1,106	930	709	433	626	15,540
Av. 1921–1925	729	1,080	1,956	2,548	2,445	1,890	1,308	1,091	904	746	483	552	15,733

Division of Statistical and Historical Research. Compiled from reports of the Division of Dairy and Poultry Products.

TABLE 631.—*Eggs: Receipts at six markets, by State of origin, 1922–1925*

[Thousand cases—i. e., 000 omitted]

BOSTON

State	1922	1923	1924	1925											
				Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Illinois	710	845	691	390	18	19	46	89	72	50	32	21	15	14	9	5
Indiana	320	233	185	156	3	9	19	35	21	15	13	15	8	11	4	3
Iowa	142	146	186	259	4	7	18	50	41	30	33	26	20	21	5	4
Minnesota	108	109	191	250	2	4	20	39	45	39	33	23	15	10	12	8
Ohio	108	87	75	39	2	3	4	3	5	4	3	4	3	6	1	1
Missouri	100	78	80	158	7	25	33	22	19	10	10	7	2	8	8	7
Maine	99	122	99	100	9	8	10	14	13	12	9	6	5	4	3	7
Kansas	83	61	57	174	4	32	31	8	21	16	7	6	12	21	6	10
Michigan	42	43	48	40	(1)	1	3	5	7	4	6	4	4	3	2	1
New York	40	36	37	28	2	1	1	1	3	2	5	1	4	3	2	3
New Hampshire	38	44	28	32	3	4	5	4	4	3	2	1	1	1	1	3
Vermont	37	36	25	27	2	2	3	4	4	3	3	2	1	1	(1)	2
Massachusetts	24	21	16	12	2	1	1	1	3	(1)	(1)	1	2	(1)	(1)	1
Nebraska	19	19	31	61	(1)	11	13	10	4	4	3	3	3	3	3	4
Other States	100	64	80	107	3	2	15	18	20	14	10	6	7	6	2	4
Total	1,970	1,944	1,829	1,833	61	129	222	303	282	206	169	126	102	112	58	63

CHICAGO

Missouri	1,045	880	661	604	15	34	74	108	123	96	50	33	24	24	9	14
Iowa	843	996	892	888	20	70	95	165	152	148	75	58	40	36	12	17
Kansas	532	501	433	439	16	57	61	45	75	72	35	26	19	9	3	21
Wisconsin	474	584	592	473	15	30	41	88	91	67	38	41	29	15	5	13
Minnesota	462	610	644	573	11	27	57	107	100	90	55	53	36	18	7	12
South Dakota	405	551	595	564	4	20	52	114	85	98	65	56	43	17	5	5
Nebraska	352	359	465	511	4	31	62	84	90	96	60	35	21	14	5	9
Illinois	310	256	194	170	7	15	18	32	29	28	11	10	6	4	2	8
Oklahoma	103	101	72	87	4	24	29	10	8	3	2	1	-------	(1)	1	5
North Dakota	23	33	46	42	1	2	3	8	6	4	5	7	5	1	(1)	(1)
Texas	22	49	25	14	(1)	8	3	-------	1	2	-------	-------	-------	(1)	(1)	-------
Michigan	18	18	20	14	2	1	2	2	2	1	1	1	1	(1)	(1)	1

[1] Not over 500 cases.

TABLE 631.—*Eggs: Receipts at six markets, by State of origin, 1922–1925*—Continued

[Thousand cases—i. e., 000 omitted]

CHICAGO—Continued

State	1922	1923	1924	1925												
				Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Arkansas	14	20	3	15	(1)	4	3	3	4	(1)	1	(1)	-------	(1)	(1)	(1)
Other States	81	51	37	104	3	6	14	15	9	10	8	6	2	5	9	17
Total	4,684	5,009	4,679	4,498	102	329	514	781	775	715	406	327	226	143	58	122

NEW YORK

Illinois	1,379	1,342	1,223	1,258	56	79	170	250	182	150	101	89	72	60	24	25
Iowa	921	934	942	924	9	31	73	172	130	152	91	100	96	44	13	13
Indiana	726	575	526	568	15	30	68	117	85	79	49	42	31	28	8	16
Ohio	514	436	327	324	6	11	26	62	55	50	30	29	23	17	5	10
New York	491	645	615	688	45	44	73	103	100	96	65	47	38	26	19	32
Missouri	438	453	415	364	18	43	54	77	29	35	17	21	19	16	13	22
California	354	430	331	456	48	77	62	17	16	27	26	24	23	37	44	55
Pennsylvania	265	238	274	244	11	14	26	33	34	32	27	22	20	10	5	10
Tennessee	251	249	141	189	10	41	60	30	23	11	4	2	1	1	2	4
Kansas	222	242	181	197	9	23	36	30	17	22	14	10	10	9	6	11
Minnesota	217	264	261	246	3	6	19	41	40	43	27	25	25	10	3	4
Washington	143	271	254	375	35	39	32	17	30	30	26	23	23	26	36	58
Kentucky	143	103	61	74	3	9	21	19	5	5	3	2	1	3	1	2
New Jersey	134	199	222	216	15	20	30	29	28	22	15	12	11	8	10	16
Michigan	100	107	97	70	4	4	2	12	13	10	6	7	6	4	1	1
Maryland	84	124	124	118	6	10	17	19	15	12	11	9	6	4	3	6
Virginia	65	99	104	92	5	9	19	18	14	8	6	4	3	2	1	3
Wisconsin	54	54	68	90	1	2	11	16	18	20	9	3	5	3	1	1
Delaware	52	63	82	80	4	7	10	12	11	10	8	5	4	3	2	4
Nebraska	38	55	57	56	2	5	10	15	2	8	2	3	1	5	1	2
Other States	230	273	238	265	20	46	53	26	24	16	13	11	9	12	10	25
Total	6,821	7,156	6,543	6,894	325	550	872	1,115	871	838	550	490	427	328	208	320

PHILADELPHIA

Illinois	274	312	304	264	28	21	29	42	25	29	21	15	15	9	16	14
Missouri	152	147	134	131	6	16	9	-------	10	22	-------	16	16	17	8	11
Indiana	149	125	103	98	2	5	4	21	20	11	10	9	7	4	2	3
Ohio	149	100	103	129	3	4	11	29	19	27	10	6	9	5	3	3
Pennsylvania	147	174	155	133	10	12	20	23	17	12	9	6	5	4	6	9
Michigan	145	103	148	123	(1)	1	5	26	32	21	12	11	6	6	3	(1)
Virginia	144	149	153	120	7	10	27	20	17	12	10	4	3	4	3	3
Iowa	71	80	106	109	2	2	5	23	16	16	10	10	15	5	3	2
Maryland	68	66	58	55	4	6	11	11	8	4	3	2	1	1	1	3
Minnesota	63	75	84	113	1	5	4	15	6	10	11	11	25	14	6	5
Tennessee	61	25	12	27	1	5	8	7	1	(1)	-------	1	-------	1	2	1
Kansas	48	70	45	43	1	9	4	8	3	8	2	2	3	2	(1)	1
Delaware	46	53	46	35	3	5	6	5	5	4	2	1	1	1	(1)	2
Wisconsin	29	34	34	37	(1)	(1)	-------	8	7	3	1	1	8	3	4	2
West Virginia	27	26	21	17	2	2	2	2	2	1	1	1	1	1	1	1
New York	17	35	26	29	2	4	1	6	(1)	2	2	1	2	(1)	6	3
Nebraska	15	36	15	17	1	3	5	3	1	2	(1)	-------	-------	(1)	(1)	2
Other States	98	57	48	92	4	11	10	30	7	4	13	2	4	2	1	4
Total	1,703	1,727	1,595	1,572	77	121	161	279	196	188	117	99	121	79	65	69

SAN FRANCISCO

California	824	825	737	686	52	47	73	79	64	72	62	55	50	44	41	47
Oregon	7	13	10	37	(1)	(1)	3	5	3	4	6	6	3	3	2	2
Washington	6	10	6	11	1	-------	-------	(1)	1	1	3	2	-------	(1)	1	2
Idaho	1	6	3	6	-------	-------	1	1	1	1	1	(1)	(1)	(1)	(1)	1
Other States	-------	1	4	3	-------	(1)	-------	-------	(1)	(1)	1	1	1	-------	(1)	(1)
Total	838	855	760	743	53	47	77	85	69	78	73	64	54	47	44	52

1 Not over 500 cases.

TABLE 631.—*Eggs: Receipts at six markets, by State of origin, 1922–1925*—Con.

[Thousand cases—i. e., omitted]

LOS ANGELES

State	1925												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
California	456	34	37	57	63	65	47	36	27	18	24	22	26
Idaho	62	------	(1)	4	8	10	15	9	9	5	(1)	1	1
Oregon	24	1	(1)	------	3	6	5	6	(1)	1	1	1	------
Utah	16	------	(1)	1	1	(1)	3	4	1	1	1	1	3
Other States	17	1	------	(1)	------	3	4	5	2	1	(1)	(1)	1
Total	575	36	37	62	75	84	74	60	39	26	26	25	31

Division of Statistical and Historical Research. Compiled from monthly reports of the Division of Dairy and Poultry Products.

[1] Not over 500 cases.

TABLE 632.—*Case eggs* [1]*: Cold-storage holdings, United States, 1915–1925*

[Thousand cases—i. e., 000 omitted]

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
1915	------	------	------	------	------	------	------	5,029	5,683	5,019	3,687	2,788
1916	1,508	458	35	264	2,327	4,593	5,574	6,060	5,600	4,868	3,985	2,146
1917	920	149	7	190	2,105	4,922	6,617	6,895	6,436	5,837	4,638	2,948
1918	1,300	200	20	344	2,957	5,499	6,554	6,568	6,265	5,369	3,812	2,071
1919	740	130	26	320	3,278	6,098	7,659	7,850	7,685	6,858	5,087	3,341
1920	1,542	342	29	122	2,135	5,143	6,747	6,872	6,372	5,295	3,838	1,824
1921	408	43	43	1,926	4,909	6,844	7,534	7,605	7,210	6,269	4,380	2,403
1922	889	179	13	950	4,648	8,056	9,811	10,161	9,608	7,924	5,726	3,257
1923	1,311	213	13	453	3,737	7,890	10,222	10,509	9,883	8,737	6,045	4,028
1924	1,927	500	44	579	3,563	6,875	8,686	9,267	8,778	7,409	5,267	3,102
1925	1,050	81	21	1,240	4,872	7,712	9,482	10,024	9,573	8,612	5,322	3,786
Av. 1921–1925	1,117	203	27	1,030	4,346	7,475	9,147	9,513	9,070	7,790	5,668	3,315

Cold Storage Report Section.

[1] 30-dozen cases.

TABLE 633.—*Eggs: Estimated price per dozen, received by producers, United States, 1910–1925*

Year beginning April	Apr. 15	May 15	June 15	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	Jan. 15	Feb. 15	Mar. 15	Weighted av.
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1910	18.6	18.4	18.2	17.9	18.5	20.9	23.8	27.2	29.7	26.2	19.3	15.7	19.3
1911	14.8	14.6	14.4	14.8	16.4	18.7	21.8	26.1	29.1	29.3	26.8	21.2	18.2
1912	17.4	16.9	16.7	17.0	18.2	20.6	24.0	27.8	28.2	24.8	21.1	17.9	18.9
1913	15.9	16.5	16.8	16.4	17.7	21.3	26.0	31.3	32.9	29.8	25.3	22.2	19.8
Av. 1910–1913	16.7	16.6	16.5	16.5	17.7	20.4	23.9	28.1	30.0	27.5	23.1	19.2	19.0
1914	16.4	16.9	17.2	17.5	19.1	22.5	23.7	28.2	31.9	31.7	23.7	16.5	19.3
1915	16.6	16.5	16.1	16.3	17.3	20.6	24.6	29.4	31.1	28.8	24.2	18.2	19.0
1916	17.7	18.5	18.9	19.9	21.6	25.3	30.4	34.9	38.3	38.1	35.7	25.3	23.3
1917	28.5	30.2	29.9	29.0	30.5	35.8	38.5	41.2	45.9	48.9	45.8	30.9	33.0
1918	30.4	30.6	29.5	33.0	35.2	39.1	44.9	51.7	59.3	55.3	34.8	33.9	34.9
1919	36.0	38.9	36.1	37.9	40.6	43.1	51.0	59.1	69.6	60.9	48.5	40.5	41.8
1920	36.6	37.5	35.9	37.8	42.5	48.6	54.6	62.9	67.1	54.5	31.0	26.8	39.3
Av. 1914–1920	26.0	27.0	26.2	27.3	29.5	33.6	38.2	43.9	49.0	45.5	34.8	27.4	30.1
1921	20.5	19.4	20.1	24.3	28.9	30.9	39.4	50.0	51.1	31.7	31.4	19.5	25.3
1922	20.0	20.9	20.2	20.3	20.6	27.3	34.6	43.6	47.2	37.8	29.9	25.4	24.7
1923	21.6	21.8	20.9	21.3	23.6	29.8	34.6	45.6	45.5	35.4	33.6	20.4	25.2
1924	19.1	19.8	21.1	22.8	26.1	31.8	38.2	45.8	49.9	48.6	35.7	23.9	26.1
1925	24.2	24.8	26.1	27.9	30.0	31.1	37.7	46.8	48.1	------	------	------	------

Division of Crop and Livestock Estimates.

TABLE 634.—*Eggs in the shell: International trade, average 1909–1913, annual 1922–1924*

[Thousand dozens—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Argentina	2,351		317	3,557	1,903	3,336	3,003	4,555
Austria			1,661	41	9,564	26	17,203	
Austria-Hungary	91,561	177,163						
China	270	25,542	234	98,498	788	91,754	847	78,688
Denmark	2,243	34,340	414	61,258	578	66,603	1,215	69,374
Finland	2,899	3	11	324	228	35		58
Italy	4,104	33,482	2,534	13,363	3,621	13,173	4,005	38,345
Netherlands	19,542	29,360	1,392	13,087	964	19,874	6,839	49,386
United States	[1] 1,701	12,108	1,019	34,620	412	30,659	383	28,117
PRINCIPAL IMPORTING COUNTRIES								
Belgium	19,148	11,521	9,506	1,181	5,458	5,365	2,675	13,819
Canada	6,341	148	8,141	3,619	6,623	2,900	4,981	2,717
Cuba	4,732		11,006		11,075			
France	37,215	8,920	20,892	5,139	22,610	23,994	12,245	5,762
Germany	228,279	675	194	1,069	1,150	93	104,471	705
Japan	6,867		47,617		46,168		38,157	
Norway	387	4	4,522	3	1,828	6	92	1,090
Sweden	4,207	3,781	2,519	814	3,101	1,135	2,861	1,057
Switzerland	19,747	48	14,633	[2]	17,623	2	16,874	12
United Kingdom	190,015		135,670	38	200,003	349	200,079	628
Total 19 countries	641,609	337,095	262,282	236,611	333,697	259,304	415,930	294,313

Division of Statistical and Historical Research. Official sources.

[1] One year only. [2] Less than 500 dozens.

TABLE 635.—*Eggs, not in the shell: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Austria-Hungary	1,100	188						
China		17,217		94,455		100,387		94,712
PRINCIPAL IMPORTING COUNTRIES								
Denmark	526	[1] 6	557	2	674	3	782	20
France	1,967	426	3,283	12	4,883	43	5,657	99
Germany	11,214	3,225	9,717	1,362	6,417	1,350	10,254	1,606
Italy	381	4	1,056	6	949	1	1,348	12
Netherlands			3,247	796	2,833	3,582	5,485	5,593
Sweden	[2] 255	[3]	318	12	527	[3]	560	7
United Kingdom	[4]	[4]	41,875	452	51,060	619	48,461	653
United States			24,809	718	23,300	328	19,722	505
Total 10 countries	15,443	21,066	84,862	97,815	90,643	106,313	92,269	103,207

Division of Statistical and Historical Research. Official sources.

[1] Three-year average.
[2] Two-year average.
[3] Less than 500 pounds.
[4] Not separately stated.

TABLE 636.—*Eggs: Average price per dozen at certain cities, 1910–1925*

WESTERN FIRSTS AT BOSTON

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1910	$0.32	$0.27	$0.23	$0.22	$0.21	$0.20	$0.19	$0.21	$0.24	$0.26	$0.30	$0.32	$0.25
1911	.27	.19	.17	.17	.17	.16	.18	.18	.20	.25	.29	.33	.21
1912	.33	.36	.22	.21	.20	.19	.20	.21	.25	.28	.31	.30	.26
1913	.26	.24	.20	.20	.21	.20	.18	.23	.28	.30	.40	.36	.26
1914	.33	.30	.25	.20	.21	.20	.21	.23	.25	.26	.34	.38	.26
1915	.36	.27	.20	.21	.20	.19	.19	.20	.25	.28	.32	.34	.25
1916	.31	.27	.23	.22	.23	.23	.24	.27	.31	.34	.40	.45	.29
1917	.45	.43	.31	.34	.36	.33	.34	.37	.41	.41	.49	.56	.40
1918	.63	.57	.38	.36	.35	.35	.41	.42	.46	.54	.65	.68	.48
1919	.63	.45	.42	.44	.47	.43	.45	.46	.47	.61	.67	.80	.52
1920	.71	.60	.48	.45	.45	.43	.45	.50	.55	.62	.76	.80	.57
Av. 1914–1920	.49	.41	.32	.32	.32	.31	.33	.35	.39	.44	.52	.57	.40
1921	.68	.43	.31	.27	.25	.26	.32	.34	.38	.49	.60	.54	.41
1922	.42	.40	.26	.26	.27	.25	.24	.25	.38	.44	.53	.55	.35
1923	.43	.38	.31	.28	.27	.25	.25	.28	.33	.40	.55	.48	.35
1924	.44	.38	.25	.24	.26	.27	.28	.32	.37	.44	.52	.58	.36
1925	.60	.42	.31	.30	.32	.32	.33	.33	.37	.44	.56	.51	.40
Av. 1921–1925	.51	.40	.29	.27	.27	.27	.28	.30	.37	.41	.55	.53	.37

FRESH FIRSTS AT NEW YORK

1910	$0.38	$0.27	$0.23	$0.22	$0.21	$0.20	$0.18	$0.21	$0.24	$0.26	$0.31	$0.34	$0.25
1911	.28	.19	.17	.17	.17	.15	.17	.18	.21	.24	.32	.35	.22
1912	.34	.36	.22	.20	.19	.19	.20	.21	.24	.26	.31	.29	.25
1913	.24	.22	.19	.19	.20	.19	.19	.23	.27	.29	.39	.36	.25
1914	.33	.29	.26	.20	.20	.21	.21	.24	.26	.27	.35	.38	.27
1915	.38	.26	.20	.21	.20	.20	.20	.22	.26	.30	.35	.34	.26
1916	.31	.26	.22	.22	.22	.23	.25	.29	.33	.34	.41	.46	.30
1917	.46	.45	.31	.34	.35	.33	.34	.38	.41	.41	.49	.57	.40
1918	.65	.58	.38	.35	.35	.36	.41	.43	.47	.53	.65	.67	.49
1919	.62	.44	.44	.43	.46	.44	.46	.48	.51	.62	.69	.79	.53
1920	.71	.59	.48	.44	.44	.43	.47	.51	.57	.64	.77	.78	.57
Av. 1914–1920	.49	.41	.33	.31	.32	.31	.33	.36	.40	.44	.53	.57	.40
1921	.67	.42	.31	.27	.25	.27	.33	.35	.39	.49	.58	.54	.41
1922	.41	.38	.25	.26	.27	.25	.24	.26	.39	.43	.53	.53	.35
1923	.42	.37	.31	.27	.27	.24	.25	.29	.35	.39	.52	.47	.35
1924	.42	.39	.25	.24	.25	.27	.29	.33	.39	.44	.52	.57	.36
1925	.59	.44	.30	.29	.32	.33	.33	.33	.37	.43	.56	.51	.40
Av. 1921–1925	.50	.40	.28	.27	.27	.27	.29	.31	.38	.44	.54	.52	.37

WESTERN EXTRA FIRSTS AT PHILADELPHIA

1910	$0.36	$0.29	$0.23	$0.22	$0.22	$0.21	$0.22	$0.24	$0.26	$0.29	$0.33	$0.37	$0.27
1911	.28	.21	.18	.18	.18	.17	.18	.20	.23	.27	.34	.33	.23
1912	.34	.36	.23	.21	.20	.21	.22	.23	.26	.30	.34	.31	.27
1913	.26	.23	.19	.19	.21	.21	.22	.27	.30	.33	.39	.37	.26
1914	.34	.28	.27	.20	.21	.22	.22	.26	.28	.30	.35	.40	.28
1915	.39	.27	.20	.21	.20	.20	.20	.23	.27	.32	.39	.36	.27
1916	.31	.26	.23	.22	.23	.24	.26	.29	.33	.36	.41	.45	.30
1917	.47	.45	.31	.35	.36	.35	.36	.39	.42	.42	.48	.56	.41
1918	.62	.61	.37	.37	.36	.39	.43	.46	.50	.56	.67	.69	.50
1919	.63	.44	.41	.44	.47	.46	.51	.52	.54	.65	.73	.80	.55
1920	.73	.62	.48	.44	.45	.47	.50	.54	.60	.67	.81	.80	.59
Av. 1914–1920	.50	.42	.32	.32	.33	.33	.35	.38	.42	.47	.55	.58	.41
1921	.66	.43	.32	.28	.25	.28	.35	.39	.41	.53	.64	.57	.43
1922	.42	.40	.26	.27	.27	.27	.26	.27	.39	.48	.59	.55	.37
1923	.43	.38	.31	.28	.29	.27	.29	.33	.42	.43	.62	.52	.38
1924	.43	.40	.24	.25	.27	.29	.31	.37	.46	.52	.61	.63	.40
1925	.60	.42	.32	.31	.33	.35	.37	.36	.42	.51	.63	.51	.43
Av. 1921–1925	.51	.41	.29	.28	.28	.29	.32	.34	.42	.49	.62	.56	.40

TABLE 636.—*Eggs: Average price per dozen at certain cities, 1910–1925*—Continued

FRESH FIRSTS AT CHICAGO

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct	Nov.	Dec.	Average
1910	$0.34	$0.26	$0.21	$0.20	$0.19	$0.18	$0.16	$0.18	$0.22	$0.24	$0.28	$0.30	$0.23
1911	.26	.18	.16	.15	.15	.13	.14	.16	.18	.21	.28	.29	.19
1912	.33	.32	.21	.19	.18	.17	.18	.19	.22	.24	.26	.25	.23
1913	.24	.21	.18	.18	.18	.18	.17	.21	.24	.26	.33	.33	.23
1914	.32	.27	.22	.18	.19	.18	.19	.21	.22	.23	.28	.32	.23
1915	.34	.25	.18	.19	.18	.17	.17	.19	.23	.26	.29	.29	.23
1916	.29	.24	.19	.20	.21	.21	.22	.24	.28	.31	.36	.39	.26
1917	.41	.42	.28	.32	.34	.31	.32	.34	.37	.37	.43	.48	.37
1918	.58	.51	.35	.33	.32	.32	.37	.38	.43	.50	.61	.62	.44
1919	.58	.38	.39	.40	.43	.40	.42	.42	.46	.57	.63	.73	.48
1920	.65	.52	.45	.41	.41	.39	.42	.47	.53	.57	.68	.71	.52
Av. 1914–1920	.45	.37	.29	.29	.30	.28	.30	.32	.36	.40	.47	.51	.36
1921	.60	.35	.27	.24	.22	.24	.28	.30	.33	.44	.52	.51	.36
1922	.37	.32	.23	.23	.24	.22	.21	.22	.29	.35	.48	.48	.30
1923	.38	.33	.26	.25	.24	.23	.23	.26	.31	.35	.48	.42	.31
1924	.41	.35	.22	.22	.24	.25	.26	.30	.36	.41	.48	.52	.34
1925	.56	.39	.29	.27	.30	.30	.31	.34	.34	.42	.53	.44	.37
Av. 1921–1925	.46	.35	.25	.24	.25	.25	.26	.28	.33	.39	.50	.47	.34

FRESH EXTRAS AT SAN FRANCISCO

1910	$0.34	$0.26	$0.21	$0.24	$0.25	$0.27	$0.30	$0.35	$0.41	$0.47	$0.54	$0.40	$0.34
1911	.31	.25	.19	.19	.21	.21	.26	.31	.38	.46	.51	.40	.31
1912	.33	.24	.20	.21	.21	.22	.25	.29	.38	.44	.48	.34	.30
1913	.28	.21	.18	.19	.20	.24	.27	.32	.39	.50	.57	.47	.32
1914	.40	.27	.20	.22	.23	.24	.28	.33	.40	.47	.48	.46	.33
1915	.31	.23	.21	.22	.23	.23	.25	.31	.36	.46	.51	.41	.31
1916	.33	.26	.20	.22	.23	.25	.27	.33	.39	.47	.50	.40	.32
1917	.38	.32	.26	.31	.34	.31	.35	.43	.46	.53	.57	.52	.40
1918	.63	.46	.39	.40	.40	.43	.48	.55	.62	.75	.82	.80	.56
1919	.61	.41	.42	.48	.52	.52	.54	.59	.69	.78	.87	.78	.60
1920	.64	.49	.44	.44	.46	.47	.57	.60	.72	.83	.87	.78	.61
Av. 1914–1920	.47	.35	.30	.33	.34	.35	.39	.45	.52	.61	.66	.59	.45
1921	.60	.37	.33	.29	.26	.29	.41	.45	.52	.65	.68	.57	.45
1922	.39	.30	.26	.28	.27	.28	.29	.33	.48	.64	.61	.52	.39
1923	.38	.28	.24	.27	.27	.28	.27	.34	.38	.44	.43	.43	.33
1924	.34	.26	.23	.23	.23	.29	.31	.35	.41	.45	.47	.45	.34
1925	.48	.28	.31	.29	.32	.35	.36	.38	.41	.47	.45	.41	.38
Av. 1921–1925	.44	.30	.27	.27	.27	.30	.33	.37	.44	.53	.53	.48	.38

Division of Statistical and Historical Research. Average of daily prices from New York Journal of Commerce, Philadelphia Commercial List, and Price Current and Chicago Dairy Produce; average of weekly prices in reports of the Boston Chamber of Commerce and Pacific Dairy Review.

SILK

TABLE 637.—*Raw silk: Production in specified countries, average 1909–1913, annual 1917–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Average 1909–1913	1917	1918	1919	1920	1921	1922	1923	1924
WESTERN EUROPE									
Italy	8,524	6,217	5,942	4,079	7,330	7,154	8,234	10,803	11,585
France	992	452	529	408	551	430	437	562	739
Spain	182	154	165	154	176	132	170	154	209
Total	9,698	6,823	6,636	4,641	8,057	7,716	8,841	11,519	12,533
Eastern Europe, Levant and Central Asia [1]	6,611	2,624	2,624	2,039	1,653	1,213	1,543	1,675	2,414
FAR EAST									
China:									
Exports from Shanghai	12,576	10,097	10,251	8,598	7,859	8,840	10,648	9,689	10,505
Exports from Canton	5,146	5,170	4,134	5,071	4,167	5,688	7,000	5,974	6,504
Japan—Exports from Yokohama	21,898	34,050	31,416	32,188	24,008	40,984	41,546	38,107	54,068
British India—Exports from Bengal and Cashmere	428	232	242	220	176	187	165	110	77
Indo-China—Exports from Saigon, Haiphong, etc	[2] 32	11	11	11	33	44	55	88	99
Total	40,080	49,560	46,054	46,088	36,243	55,743	59,414	53,968	71,253
Grand total	56,389	59,007	55,314	52,768	45,953	64,672	69,798	67,162	86,200

Division of Statistical and Historical Research. Compiled from Statistique de la Production de la Soie, Silk Merchants Union, Lyon, France.

[1] Includes Hungary, Czechoslovakia, Yugoslavia, Rumania, Bulgaria, Greece, Salonika, Adrianople, Crete, the Caucasus, Anatolia, Turkestan, Central Asia, Syria, Cyprus, and Persia.
[2] For years 1911–1913.

TABLE 638.—*Silk, Japanese, filatures, Kansai No. 1: Average wholesale price per pound, New York, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average [1]
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	4.098	4.195	4.244	4.195	3.807	3.759	3.856	3.662	3.662	3.662	3.516	3.419	3.840
1910	3.516	3.468	3.322	3.419	3.516	3.419	3.419	3.371	3.419	3.613	3.856	3.953	3.524
1911	3.795	3.795	3.659	3.480	3.407	3.407	3.359	3.310	3.419	3.274	3.274	[2]	------
1912	3.322	3.346	3.444	3.444	3.444	3.395	3.322	3.444	3.589	3.686	3.492	3.414	3.445
1913	3.468	3.492	3.395	3.492	3.444	3.613	3.613	4.050	4.026	3.759	3.686	3.638	3.640
Av. 1909–1913	3.640	3.659	3.613	3.606	3.524	3.519	3.514	3.567	3.623	3.599	3.565	3.606	------
1914	3.832	3.977	4.026	3.977	4.074	4.074	3.977	3.953	3.468	3.201	2.910	2.862	3.694
1915	2.910	3.177	3.031	3.201	3.201	3.201	3.007	3.080	3.322	3.322	3.783	4.583	3.318
1916	4.462	4.996	5.432	4.777	4.462	4.363	4.527	4.874	4.704	4.996	5.432	5.384	4.867
1917	5.335	5.141	4.947	5.384	5.287	5.675	5.675	6.645	6.063	5.432	5.432	5.093	5.494
1918	5.384	5.481	5.481	5.772	6.160	6.160	6.887	6.790	6.887	6.742	6.984	6.548	6.273
1919	5.675	5.772	6.063	6.645	7.663	9.603	9.749	8.827	9.506	11.058	12.368	13.629	8.880
1920	16.975	14.065	12.998	9.506	6.305	6.451	4.608	4.705	6.321	5.978	5.782	5.635	8.277
Av. 1914–1920	6.368	6.087	5.997	5.609	5.307	5.647	5.490	5.553	5.753	5.818	6.099	6.248	5.829
1921	5.782	5.733	5.880	5.782	5.635	5.733	5.733	5.390	5.978	6.027	7.154	7.595	6.035
1922	6.762	6.566	6.027	6.517	7.203	7.301	7.056	7.105	7.644	8.330	7.889	8.232	7.219
1923	8.183	8.771	8.624	9.310	8.428	7.693	7.154	7.350	9.800	7.840	7.840	7.742	8.228
1924	7.350	6.860	6.223	5.635	4.802	4.998	5.390	6.076	5.439	5.733	6.174	6.321	5.917
1925	6.076	6.223	5.831	5.978	6.174	6.370	6.321	6.468	6.615	6.664	6.566	6.811	6.341
Av. 1921–1925	6.831	6.831	6.517	6.644	6.448	6.419	6.331	6.478	7.095	6.919	7.125	7.340	6.748

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.
[2] No quotations.

HONEY

TABLE 639.—*Honey: Monthly average prices in producing sections and at consuming markets, 1920–1925*

EXTRACTED HONEY, PER POUND

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
CALIFORNIA WHITE ORANGE												
F. o. b. Southern California shipping points: [1]	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
1920	18¼	18¼	17¾	17¼	21	19¾	19½	19¼	18½	18¼	17¾	16¾
1921	16¼	13¾	13	12	11¼	11¼	9¼	10½	11	11¾	12¼	11½
1922	11½	11½	11	------	8½	9	9½	9½	9½	10¼	10¾	10¾
1923	10¾	10½	10¼	10¼	11¾	------	12	------	------	------	------	13¼
1924	13	------	14	14½	11¾	13¼	12	12½	13	13¼	14½	14¼
1925	14¼	------	15	------	13½	13	11¾	11¾	------	14½	15½	------
New York City: [2]												
1920	20¾	18¾	17½	19¼	20	21¾	18	17¼	18¾	17	17	16¼
1921	17½	14¾	12¼	11	11½	12	11½	11	12¼	12½	12¾	12¾
1922	13½	13	13¼	12½	13	12	11¾	11¾	11¾	12	12½	12¾
1923	12¾	12¾	12¾	12¾	13	13½	13¾	13¾	14½	14	15	16
1924	15½	16	15	15½	15½	13½	14½	14	------	13¾	13½	------
1925	------	------	------	------	------	14¼	------	14½	14¼	13½	14	14½
INTERMOUNTAIN WHITE SWEET CLOVER AND ALFALFA												
F. o. b. Intermountain points: [3]												
1921	------	------	------	8¼	7¾	7½	7¼	7¾	7¾	7¾	8	8½
1922	8½	8½	8½	8½	8½	8¾	9¼	------	8	8	8	8
1923	7¾	8	7¼	7½	7½	7¾	8½	8¾	8	9	9	9
1924	9	9¼	9¼	9¼	9¼	9	8¾	9	9	9	9	9¼
1925	9½	9¼	9¼	9¼	9	------	8½	8½	8½	8½	8½	8½
Chicago: [2]												
1921	14¾	13¾	12	12¼	11¾	9¾	9¾	10¼	10	11	11	11¼
1922	11¼	11	10¾	10½	10¼	10¾	10¼	10	10	10¼	10¼	9½
1923	9½	9	10	10	10	10¼	10¼	10¼	10¾	11¼	11½	11¼
1924	11¼	11¼	11¼	11¼	11	------	------	10¾	11	11¼	11¼	11
1925	11	11	11	11¼	------	------	------	------	------	11	11	11
NORTHEASTERN AND CENTRAL WHITE CLOVER												
F. o. b. Clover Belt points: [4]												
1921	------	------	------	------	------	------	------	------	9¾	9¾	9¾	10¾
1922	10½	10	10¾	10¾	10½	11¼	11½	11	11	11	10¾	11
1923	11	10¾	10	10	10½	11	11	11¾	11¼	10¾	10¾	10¾
1924	10¾	10¾	10¾	11	11	10¾	10½	11	10¾	10¾	11¼	11
1925	11¼	11¼	11¼	11¼	11½	11½	11½	10¾	11	11	10¾	10½
Chicago: [2]												
1921	------	------	------	------	------	------	------	------	11¾	12½	12¼	12½
1922	11¾	11¾	11¼	11	11¼	12	------	------	10¼	11½	11½	10¼
1923	10	9¼	9½	9¾	10½	------	10½	10¾	11¼	11½	12½	11¾
1924	12¼	10¾	10¾	11	11¼	10½	10½	11¾	11½	12	12	12
1925	11¼	11¾	11½	11¼	11½	11¼	11¼	11	11	10¾	11½	11¼
NORTHEASTERN BUCKWHEAT												
F. o. b. New York and Pennsylvania points: [4]												
1921	------	------	------	------	------	------	------	------	9	8¼	7½	8
1922	7	8	7½	7½	------	8	8½	6½	7¾	8	8	8
1923	7¾	8	8½	------	------	8	------	9	9	9¼	9	9
1924	9	9	8½	8¾	8½	8½	8¾	------	9	9¼	9	9
1925	8¾	9	10	9	------	------	------	9¼	9	8½	8½	8¾

[1] Price to beekeepers or other shippers in car lots to July, 1923; thereafter, price in large lots, mostly less than car lots.
[2] Sales by original receivers to bottlers, confectioners, bakers, and jobbers.
[3] Price to beekeepers and other shippers, in car lots.
[4] Price to beekeepers in large lots, mostly less than car lots.

TABLE 639.—*Honey: Monthly average prices in producing sections and at consuming markets, 1920–1925*—Continued.

COMB HONEY, 24-SECTION CASES

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
NORTHEASTERN AND CENTRAL WHITE CLOVER COMB, NO. 1 AND FANCY												
F. o. b. Clover Belt points:[4]	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1921	------	------	------	------	------	------	------	------	5.10	5.00	5.10	4.65
1922	5.00	5.10	5.00	4.50	------	------	4.45	5.00	4.55	4.90	4.70	4.70
1923	4.75	4.75	------	------	4.00	------	5.00	5.00	5.25	5.10	4.75	5.15
1924	4.75	4.75	5.05	4.80	5.50	------	4.80	4.85	4.95	4.80	5.10	4.95
1925	4.95	4.95	4.75	4.90	5.25	4.50	5.10	5.20	5.00	5.00	4.65	4.45
Chicago:[5]												
1921	6.75	6.50	6.75	7.00	6.60	6.40	6.25	6.60	6.00	6.10	6.00	5.50
1922	5.25	5.25	------	4.75	------	5.10	------	------	4.10	4.50	4.25	4.50
1923	4.10	4.00	4.00	4.00	4.25	4.25	4.25	4.40	4.75	4.75	4.90	4.90
1924	4.90	4.75	4.60	5.00	4.75	4.60	4.75	5.00	5.10	5.00	4.90	4.75
1925	4.50	4.25	4.40	4.60	4.50	4.50	4.60	4.40	4.40	4.50	4.25	4.10

Fruit and Vegetable Division.

[4] Price to beekeepers in large lots, mostly less than car lots.
[5] Sales by original receivers to retailers.

BEESWAX

TABLE 640.—*Beeswax: Monthly average price per pound in producing sections and at Chicago, 1920–1925*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
F. O. B. PRODUCING SECTIONS[1]												
Southern California (average yellow to light):	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1921	35	34	30	------	27	28	25	23½	21	21	23	22½
1922	------	22	22	------	22	22	22½	20	20	21	23½	23½
1923	26	27	27	28	28	27	------	------	------	------	21	22
1924	23	23½	23½	22	22½	22½	21	22½	23	24	23	24½
1925	26	27	28½	29½	29½	28	29	28	28	28½	30½	34½
Intermountain region (average yellow to light):												
1921	35½	------	32	------	30	------	28	------	23	23	22	23½
1922	22	23	23	------	22	------	22½	20	20	22	22½	21
1923	25	26	26	25½	26	24½	24	25	24½	24½	24	24
1924	23½	23½	23½	23	22½	22½	22½	21½	20½	22½	22½	24
1925	25	25½	27	30	30	29½	30	28	28	30	32	34
Chicago:[2]												
Light—												
1920	44	41½	42¾	43¾	45¾	44	43¼	41	40	40¼	37	34¾
1921	31½	31¼	30½	31	32¼	31½	31¾	29	29	30¼	30¼	31
1922	31	31	29¾	28¾	33	31¼	31½	30¾	31	31½	31½	30½
1923	30¾	31½	32	32½	32	32	31	29	30	30	29	29½
1924	29¼	28½	29	31¼	28¾	27½	27	27	29	32½	32¼	33¼
1925	36	35	38	41¾	38	35	33½	33½	34	37¾	38	38
Dark—												
1920	38½	36¼	39	40¾	42	40½	39½	37	35½	36½	34½	32¼
1921	29¼	28½	27¾	25¾	25¼	27¾	26¾	25¾	26½	27	27¼	27½
1922	28½	28	24½	25½	29	28	29	28	27¼	28	27¾	27¾
1923	28	28½	28½	28¾	29	29¼	28½	25½	25¼	26	26	21
1924	26	26¼	26	27	25¼	25½	25½	24½	26	29	28	27½
1925	31	31	33¾	36¾	34	29½	29½	29¾	29½	34½	34	34

Fruit and Vegetable Division.

[1] Price to beekepers.
[2] Sales by original receivers to wholesalers, polish and laundry-supply manufacturers, etc.

FOREIGN TRADE OF THE UNITED STATES IN AGRICULTURAL PRODUCTS

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*

Article exported	Year ended June 30						
	Quantity				Value		
	Unit	1923	1924	1925 preliminary	1923	1924	1925 preliminary
ANIMALS AND ANIMAL PRODUCTS							
Animals, live:		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Cattle—							
Bulls for breeding	No.	2	1	2	274	125	200
Cows for breeding	No.	20	9	21	884	495	634
Other cattle	No.	40	23	83	1,796	676	1,597
Horses—							
For breeding	No.	(1)	(1)	(1)	137	112	163
Other horses	No.	8	11	10	912	842	1,092
Mules, asses, and burros	No.	13	16	18	1,324	1,712	1,967
Sheep	No.	16	9	19	165	89	205
Swine	No.	76	95	63	990	1,217	1,054
Poultry	Lb.	491	695	777	268	323	372
Other live animals	Lb.	429	520	999	168	196	263
Total animals, live					6,918	5,787	7,547
Dairy products:							
Butter	Lb.	9,410	5,425	8,384	3,706	2,472	3,423
Cheese	Lb.	8,446	3,938	9,432	2,170	1,088	2,414
Milk and cream—							
Fresh and sterilized	Gal.	89	89	95	80	86	68
Condensed, sweetened	Lb.	47,966	67,112	49,297	6,760	9,812	7,334
Evaporated, unsweetened	Lb.	109,072	146,500	124,250	10,107	14,108	11,550
Powdered, dried	Lb.	2,918	2,706	5,623	504	609	839
Total dairy products					23,327	28,175	25,633
Eggs and egg products:							
Eggs in shell	Doz.	34,284	32,832	25,107	9,311	8,659	7,300
Eggs and yolks, frozen, dried, or canned.	Lb.	555	488	270	89	75	37
Total eggs and egg products.					9,400	8,734	7,337
Hides and skins, raw (except fur):							
Calf	Lb.	3,158	7,120	11,999	764	1,537	2,702
Cattle	Lb.	11,200	73,116	54,381	1,796	7,639	7,031
Sheep and goat	Lb.	974	1,807	3,003	227	388	869
Other hides and skins, including fresh and pickled splits.	Lb.	5,656	9,865	9,899	709	1,098	1,142
Total hides and skins	Lb.	20,988	91,908	79,282	3,496	10,662	11,744
Meats and meat products:							
Meats—							
Beef and veal—							
Beef, canned	Lb.	2,312	1,545	1,835	630	367	538
Beef, fresh	Lb.	3,656	2,476	3,036	555	423	480
Beef, pickled or cured.	Lb.	24,185	21,851	22,407	2,308	2,170	2,303
Veal, fresh	Lb.	361	341	108	55	60	20
Total beef and veal.	Lb.	30,514	26,213	27,386	3,548	3,020	3,341
Mutton and lamb	Lb.	1,769	1,633	1,460	331	307	287
Pork—							
Bacon	Lb.	408,334	408,099	211,706	59,052	50,951	33,935
Canned	Lb.	2,699	2,691	4,185	942	690	1,317
Carcasses, fresh	Lb.	9,462	12,555	6,841	1,338	1,485	904
Hams and shoulders.	Lb.	319,269	369,459	277,567	55,205	56,252	49,910

[1] Less than 500.

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*—Continued

Article exported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
ANIMALS AND ANIMAL PRODUCTS—continued							
Meats and meat products—Continued.							
Meats—Continued.							
Pork—Continued.							
Loins and other fresh.	Lb.	*Thousands* 34,310	*Thousands* 36,558	*Thousands* 20,763	*1,000 dollars* 5,437	*1,000 dollars* 5,392	*1,000 dollars* 3,504
Pickled	Lb.	40,934	37,469	26,726	4,953	4,293	3,666
Sides—							
Cumberland	Lb.	[2]	[3] 15,401	24,557	[2]	[3] 2,009	4,322
Wiltshire	Lb.	[4]	[3] 12,105	14,647	[4]	[3] 1,544	2,584
Total pork	Lb.	815,008	894,337	586,992	126,927	122,616	100,142
Poultry and game—							
Canned	Lb.	125	69	[5]	46	33	[5]
Fresh	Lb.	5,906	4,042	4,922	1,744	1,185	1,498
Sausage—							
Canned	Lb.	2,694	3,213	3,818	712	901	1,006
Not canned	Lb.	7,719	8,707	8,798	2,059	2,114	2,271
Miscellaneous meats—							
Meats, canned, n. e. s.	Lb.	7,522	9,493	6,659	2,898	2,933	1,989
Meat extracts and bouillon cubes.	Lb.	482	289	171	546	443	346
Other meats, n. e. s., including edible offal.	Lb.	47,292	56,869	42,386	4,493	4,973	3,784
Total meats	Lb.	919,031	1,004,865	682,592	143,304	138,525	114,664
Oils and fats, animal—							
Lard	Lb.	952,642	1,014,898	792,735	116,594	129,091	123,223
Lard compounds	Lb.	11,140	6,907	8,923	1,397	935	1,296
Lard, neutral	Lb.	26,494	24,239	20,421	3,424	3,242	3,521
Lard oil	Lb.	737	715	[6]	89	81	[6]
Neat's foot oil	Lb.	1,233	1,349	1,695	188	235	257
Oleomargarine	Lb.	2,028	1,125	732	328	180	122
Oleo oil	Lb.	104,956	92,965	105,146	12,068	11,358	14,659
Oleo stock	Lb.	12,521	11,345	15,129	1,359	1,277	1,891
Stearins and fatty acids—							
Grease stearin	Lb.	2,962	4,097	2,412	278	382	257
Oleic acid or red oil.	Lb.	2,379	2,693	1,432	202	220	127
Oleo and lard stearin.	Lb.	10,135	7,081	7,139	1,051	761	868
Stearic acid	Lb.	3,686	2,191	2,059	404	281	278
Other fatty acids	Lb.	[3] 66	291	[6]	[3] 7	25	[6]
Tallow	Lb.	[7]	[7]	28,776	[7]	[7]	2,619
Edible	Lb.	1,914	1,175	[8]	161	92	[8]
Inedible	Lb.	23,751	36,197	[8]	1,939	2,855	[8]
Miscellaneous, n. e. s., including other animal oils.	Lb.	52,993	81,837	87,554	4,375	7,044	9,365
Total oils and fats	Lb.	1,209,637	1,289,105	1,074,153	143,864	158,059	158,483
Total meats and meat products.	Lb.	2,128,668	2,293,970	1,756,745	287,168	296,584	273,147
Wool and mohair, unmanufactured.	Lb.	451	465	315	121	134	133

[2] Included with "Bacon."
[3] Jan. 1–June 30.
[4] Included with "Hams and shoulders."
[5] Included with "Meats canned, n. e. s."
[6] Included with Animal oils and fats, "Miscellaneous, n. e. s., including other animal oils."
[7] Classified as "Edible" and "Inedible."
[8] Classified as "Tallow."

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*—Continued

Article exported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
ANIMALS AND ANIMAL PRODUCTS—continued							
Miscellaneous animal products:		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Beeswax	Lb	79	136	[9]	25	42	[9]
Bones, hoofs, and horns, unmanufactured	Lb	6,301	5,457	4,189	310	286	152
Feathers, crude	Lb	4,370	3,093	4,872	310	232	439
Gelatin	Lb	310	418	377	201	279	270
Glue	Lb	2,905	2,295	2,431	431	369	372
Hair, unmanufactured—							
Cattle	Lb	7,369	5,087	6,981	424	441	849
Other hair	Lb	8,068	9,869	13,056	824	1,075	1,540
Honey	Lb	2,891	1,921	6,214	290	228	650
Sausage casings	Lb	20,043	27,427	39,972	4,935	5,454	8,698
Miscellaneous animal products, n. e. s.	Lb	2,177	2,404	4,324	223	245	446
Total animals and animal products.					338,403	358,727	338,957
VEGETABLE PRODUCTS							
Chocolate and cocoa:							
Chocolate, including sweetened	Lb	974	1,594	1,478	224	372	306
Cocoa, powdered	Lb	8,047	4,583	3,032	389	337	301
Coffee:							
Green	Lb	26,272	23,845	25,282	4,949	4,997	7,146
Roasted	Lb	1,319	2,028	1,983	361	538	625
Extracts and substitutes	Lb	713	695	826	380	422	514
Cotton, unmanufactured:							
Long staple (1⅛ inches or over)—							
Sea-island (500 lbs.)	Bale	1	[1]	1	148	61	179
Other long staple (500 lbs.)	Bale	886	937	1,594	114,285	145,832	210,519
Short staple (under 1⅛ inches) (500 lbs.)	Bale	4,318	4,847	6,644	542,871	753,289	842,962
Linters (500 lbs.)	Bale	48	115	200	1,679	4,793	7,226
Total cotton, unmanufactured (500 lbs.)	Bale	5,253	5,899	8,439	658,983	903,975	1,060,886
Fruits:							
Dried and evaporated—							
Apples	Lb	12,817	30,323	19,225	1,447	3,332	2,315
Apricots	Lb	11,193	38,777	13,292	2,617	4,428	2,013
Peaches	Lb	5,586	12,975	4,668	711	996	451
Prunes	Lb	79,229	136,448	171,771	7,533	8,572	11,458
Raisins	Lb	93,962	88,152	90,783	10,284	7,893	6,788
Other dried and evaporated fruit	Lb	10,632	13,933	11,242	1,352	1,348	1,342
Total dried and evaporated	Lb	213,419	320,608	310,981	23,994	26,569	24,367
Fresh—							
Apples	Bbl	593	2,032	1,505	2,674	9,506	6,811
Apples	Box	3,491	6,198	5,148	6,525	13,655	12,571
Berries	Lb	8,180	11,149	8,453	881	1,084	971
Citrus—							
Grapefruit	Box	252	305	427	830	827	1,301
Lemons	Box	159	228	173	909	952	848
Oranges	Box	1,799	2,592	2,197	7,561	8,566	9,319
Grapes	Lb	14,022	20,257	20,302	1,051	1,229	1,206
Pears	Lb	36,785	50,237	41,452	1,617	2,499	2,253
Peaches	Lb	13,170	15,065	16,172	583	574	680
Pineapples	Box	37	41	32	157	139	121
Other fresh fruits [10]	Lb	36,555	32,374	33,538	1,489	1,417	1,293
Total fresh fruits					24,277	40,448	37,464

[1] Less than 500.
[9] Included with Animal products, "Miscellaneous, n. e. s."
[10] Includes "Other subtropical fruits."

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*—Continued

Article exported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—con.							
Fruits—Continued.							
Prepared or preserved—		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Canned—							
Apples and apple sauce.	Lb.	(11)	[3] 4,586	13,487	(11)	[3] 275	770
Apricots	Lb.	[3] 13,809	26,576	31,360	[3] 1,187	2,070	2,839
Cherries	Lb.	2,251	1,675	1,612	369	267	256
Peaches	Lb.	54,624	50,374	57,390	5,388	4,436	5,778
Pears	Lb.	49,358	38,431	53,851	6,105	4,144	6,447
Pineapples	Lb.	21,848	25,238	26,252	2,346	3,058	2,951
Plums	Lb.	1,942	1,918	877	174	148	74
Prunes	Lb.	(11)	[3] 834	2,701	(11)	[3] 103	320
Miscellaneous fruits.	Lb.	63,388	16,280	13,703	6,910	1,765	1,608
Total prepared or preserved.	Lb.	207,220	165,912	201,233	22,479	16,266	21,043
Preserved jellies and jams	Lb.	2,217	2,246	1,514	456	437	317
Fruit preparations, n. e. s., including fruit pulp (cannery waste).	Lb.	1,565	10,163	15,397	47	799	2,124
Total fruits					71,253	84,519	85,315
Grains and grain products:							
Grains—							
Barley	Bu.	18,193	11,209	23,653	13,591	8,897	25,945
Buckwheat	Bu.	140	82	180	152	83	208
Corn	Bu.	94,064	21,186	8,460	75,031	19,553	10,629
Oats	Bu.	18,574	1,149	10,874	9,282	606	6,242
Rice	Lb.	318,941	190,616	74,602	12,379	8,361	4,189
Rye	Bu.	51,412	17,705	49,909	47,513	14,343	62,811
Wheat	Bu.	154,951	78,793	195,490	192,015	87,712	306,606
Meal and flours—							
Buckwheat	Lb.	892	291	310	41	16	18
Corn	Bbl.	633	487	333	2,470	2,223	1,971
Oatmeal	Lb.	123,115	137,646	106,256	4,406	4,922	4,596
Rice flour, meal, and broken rice.	Lb.	51,729	37,141	37,435	1,142	915	1,248
Rye	Bbl.	42	366	55	213	1,519	346
Wheat	Bbl.	14,883	17,253	13,896	83,991	88,202	97,766
Total grains and flours.					442,226	237,352	522,575
Miscellaneous grain products—							
Bran and middlings	Ton.	3	2	4	97	75	136
Bread and biscuit	Lb.	9,480	12,452	14,166	1,303	1,730	2,066
Cereal breakfast foods, n. e. s.	Lb.	11,051	11,903	8,343	1,005	1,138	848
Corn feeds	Ton.	1	2	(12)	23	55	(12)
Corn products for table use, misc. n. e. s.	Lb.	5,081	5,924	7,529	304	394	552
Hominy and grits	Lb.	79,979	32,160	16,556	1,335	643	448
Macaroni, spaghetti, etc.	Lb.	6,292	7,260	8,447	502	581	686
Malt	Bu.	4,088	2,975	5,379	3,970	3,023	6,351
Mill feeds, misc. n. e. s.	Ton.	33	8	22	698	318	702
Prepared feeds, not medicinal.	Lb.	19,664	17,364	31,888	401	393	691
Screenings	Lb.	10,037	12,664	8,437	167	339	106
Sorgo, kafir, and milo	Bu.	58	60	(12)	59	46	(12)
Wheat products for table use.	Lb.	4,229	5,138	8,016	321	399	665
Other grain products	Lb.	6,467	5,791	12,633	375	376	601
Total grains and grain products.					452,786	246,862	536,427

[3] Jan. 1–June 30.
[11] Included with Canned fruit, "Miscellaneous."
[12] Included with "Mill feeds, miscellaneous, n. e. s."
[13] Included with "Other grain products."

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*—Continued

Article exported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—con.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Nuts:							
Peanuts	Lb	8,716	3,994	2,863	681	381	307
Other nuts	Lb	4,818	6,263	4,382	724	793	793
Oilseeds and oilseed products:							
Oil cake and oil-cake meal—							
Cake—							
Coconut	Lb	3,860	58	(14)	66	1	(14)
Corn	Lb	686	(14)	(14)	12	(14)	(14)
Cottonseed	Lb	342,544	200,927	593,664	7,789	4,261	12,553
Linseed	Lb	536,555	546,848	671,460	11,577	11,221	14,982
Peanut	Lb	692	(14)	(14)	12	(14)	(14)
Other oil cake	Lb	3,092	1,233	15,250	66	21	241
Meal—							
Cottonseed	Lb	111,806	49,439	291,711	2,302	1,033	6,208
Linseed	Lb	38,057	13,267	19,666	841	276	440
Other oil-cake meal	Lb	2,732	5,322	25,582	54	104	496
Total oil cake and oil-cake meal	Lb	1,040,024	817,094	1,617,333	22,719	16,917	34,920
Oilseeds	Lb	2,722	4,083	3,170	95	246	212
Oils—							
Fixed or expressed—							
Cocoa butter	Lb	957	887	1,577	287	232	427
Coconut oil	Lb	12,993	19,423	17,890	1,088	1,676	1,679
Corn oil	Lb	5,224	4,196	3,586	652	540	491
Cottonseed oil—							
Crude	Lb	25,933	23,534	24,062	2,258	2,215	2,243
Refined	Lb	38,359	15,884	29,198	4,239	1,866	3,508
Total cottonseed oil	Lb	64,292	39,418	53,260	6,497	4,081	5,751
Lard compounds, vegetable	Lb	17,984	7,029	6,578	2,221	993	976
Linseed oil	Lb	3,105	2,628	2,405	410	347	338
Oleomargarine, vegetable	Lb	1,736	271	155	236	44	25
Peanut oil	Lb	188	168	(15)	21	14	(15)
Soy-bean oil	Lb	2,495	2,892	579	219	311	65
Soap stock, vegetable	Lb	3,611	3,996	6,167	239	231	335
Stearin, vegetable	Lb	564	176	(16)	56	25	(16)
Other vegetable oils and fats	Lb	8,063	6,951	6,780	863	851	771
Total fixed or expressed	Lb	121,212	88,035	98,977	12,789	9,345	10,858
Volatile or essential—							
Peppermint	Lb	102	159	127	291	537	823
Other volatile or essential	Lb	584	1,099	1,176	611	745	923
Total volatile or essential	Lb	686	1,258	1,303	902	1,282	1,746
Total vegetable oils	Lb	121,898	89,293	100,280	13,691	10,627	12,604

[14] Included with "Other oil cake."
[15] Included with "Other vegetable oils and fats."
[16] Included with Vegetable products, "Other, n. e. s."

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*—Continued

Article exported	Year ended June 30						
	Quantity				Value		
	Unit	1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—con.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Seeds, except oilseeds:							
Alfalfa	Lb	400	312	404	76	59	77
Clover, except red	Lb	2,492	484	1,185	524	93	281
Clover, red	Lb	1,839	301	678	365	52	176
Field and forage plant seeds, n. e. s.	Lb	4,151	5,162	2,184	221	212	136
Grass seeds, n. e. s.	Lb	4,091	3,405	5,552	648	497	917
Timothy	Lb	20,132	15,502	16,458	1,401	1,287	1,214
Vegetable and flower seeds.	Lb	4,409	3,180	3,619	822	686	801
Total seeds, except oilseeds.	Lb	37,514	28,347	30,080	4,057	2,886	3,602
Spices	Lb	1,645	1,668	1,532	201	199	236
Sugar, molasses, and sirup:							
Molasses	Gal	4,773	2,065	3,102	528	394	443
Sirup, including maple	Gal	5,905	3,808	4,691	1,584	1,364	1,375
Sugar, including maple (2,000 lbs.).	Ton	375	135	250	41,012	16,588	21,798
Total sugar, molasses, and sirup.					43,124	18,346	23,616
Tobacco, unmanufactured:							
Tobacco leaf	Lb	[17] 229,472	([18])	([18])	[17] 77,846	([18])	([18])
Bright flue-cured	Lb	[3] 57,092	265,966	207,457	[3] 22,715	106,879	86,113
Burley	Lb	[3] 3,464	6,946	5,802	[3] 874	1,580	2,180
Cigar leaf	Lb	[3] 242	1,389	540	[3] 208	392	436
Dark-fired Kentucky and Tennessee.	Lb	[3] 73,451	169,315	126,530	[3] 13,870	28,327	21,369
Dark Virginia	Lb	[3] 34,719	30,596	24,939	[3] 17,967	11,373	8,252
Green River (Pryor)	Lb	[3] 10,010	15,865	15,533	[3] 2,843	3,118	3,429
Maryland and Ohio export.	Lb	[3] 5,335	17,608	11,848	[3] 563	3,504	2,368
Other leaf tobacco	Lb	[3] 31,357	49,603	27,574	[3] 8,739	11,278	6,990
Total leaf tobacco	Lb	445,142	557,288	420,223	145,625	166,451	131,137
Stems, trimmings and scrap tobacco.	Lb	9,222	40,342	10,479	607	1,625	398
Total tobacco, unmanufactured.	Lb	454,364	597,630	430,702	146,232	168,076	131,535
Vegetables:							
Dried and fresh—							
Beans, dried	Bu	672	695	549	2,483	2,501	2,361
Dried or dehydrated vegetables, miscellaneous.	Lb	444	1,648	632	57	93	76
Onions	Bu	703	674	487	994	997	789
Peas, dried	Bu	95	112	61	411	512	299
Potatoes	Bu	2,980	3,075	3,653	3,190	4,327	3,674
Other fresh vegetables	Lb	80,277	90,677	97,532	3,130	3,324	3,463
Prepared or preserved—							
Asparagus	Lb	8,500	9,934	9,153	1,493	1,899	1,633
Beans	Lb	5,643	6,704	6,220	471	605	549
Corn	Lb	2,882	5,354	5,054	235	373	457
Peas	Lb	3,073	3,867	5,605	280	372	529
Pickles and sauces	Lb	11,829	[17] 5,885	([19])	1,590	[17] 889	([19])
Pickles	Lb	([20])	[3] 1,340	1,951	([20])	[3] 118	224
Ketchup and other tomato sauces.	Lb	([20])	[3] 3,560	5,520	([20])	[3] 501	880
Other sauces and relishes.	Lb	([20])	[3] 1,358	2,498	([20])	[3] 256	535
Soups	Lb	12,786	13,025	13,948	1,382	1,506	1,646
Tomatoes	Lb	8,917	9,152	5,203	565	568	341
Other canned vegetables.	Lb	3,203	2,819	2,710	311	269	253
Other vegetable preparations, n. e. s.	Lb	900	993	1,005	97	112	96
Total vegetables					16,689	19,222	17,810

[3] Jan. 1–June 30.
[17] July 1–Dec. 31.
[18] Classified as "Bright flue-cured," "Burley," "Cigar leaf," "Dark-fired Kentucky and Tennessee," "Dark Virginia," "Green River (Pryor)," "Maryland and Ohio export," and "Other leaf."
[19] Classified as "Pickles," "Ketchup and other tomato sauces," and "Other sauces and relishes."
[20] Included with "Pickles and sauces."

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*—Continued

Article exported	Unit	Year ended June 30					
		Quantity			Value		
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—con.							
Miscellaneous vegetable products:		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Beverages—							
Malt beverages	Gal.	184	351	420	137	199	286
Spirits, distilled	Pf. gal.	370	272	126	1,116	581	122
Wines	Gal.	38	19	8	29	21	7
Miscellaneous beverages, n. e. s., and fruit juices [21]	Gal.	161	262	355	176	290	493
Broomcorn	Ton	4	5	5	882	833	630
Drugs, herbs, leaves, roots, crude—							
Ginseng	Lb.	175	177	141	2,417	2,607	1,980
Other crude vegetable drugs.	Lb.	4,235	6,086	7,945	970	1,394	1,681
Flavoring extracts [22]	Lb.	1,733	1,550	492	643	569	387
Flowers, cut	Lb.	116	161	155	88	99	95
Glucose (corn sirup)	Lb.	156,315	141,141	136,823	4,788	4,860	5,290
Glue, vegetable	Lb.	715	961	1,016	82	91	79
Grape sugar (corn sugar)	Lb.	6,379	6,910	2,754	225	296	120
Hay	Ton	47	21	23	940	428	479
Hops	Lb.	13,497	20,461	16,122	2,590	6,501	3,257
Nursery and greenhouse stock—							
Fruit stock, cuttings and seedlings.	No.	1,877	1,581	1,754	148	127	99
Other nursery or greenhouse stock.	No.	4,558	5,928	5,718	200	204	208
Starch, corn	Lb.	254,060	255,135	209,865	6,741	8,148	7,223
Starch, except corn	Lb.	6,736	7,707	4,382	239	278	203
Vinegar	Gal.	193	218	222	62	104	113
Yeast	Lb.	2,751	2,515	3,119	694	667	804
Other miscellaneous vegetable products, n. e. s.	Lb.	2,678	6,032	7,369	61	359	497
Total vegetable products.					1,460,766	1,508,371	1,941,208
Total animal and vegetable products.					1,799,169	1,867,098	2,280,165
FOREST PRODUCTS							
Dyeing and tanning materials, crude.	Ton	1	2	6	74	107	137
Dye extracts—							
Logwood	Lb.	2,437	1,336	2,089	365	181	244
Other dye extracts	Lb.	2,776	1,650	1,342	394	235	162
Tanning extracts—							
Chestnut	Lb.	7,387	9,309	7,815	268	301	242
Other tanning extracts, (vegetable and chemical).	Lb.	24,943	23,400	21,063	1,174	1,148	1,152
Naval stores, gums, and resins:							
Rosin	Bbl [23]	1,040	1,205	1,412	10,157	10,660	16,047
Spirits of turpentine	Gal.	9,012	11,194	12,305	11,481	10,607	10,982
Tar and pitch, wood	Bbl [24]	34	90	28	205	427	189
Turpentine substitutes	Gal.	[3] 344	1,064	941	[3] 145	425	275
Wood turpentine	Gal.	398	494	523	331	425	404
Other gums and resins	Lb.	2,160	1,843	2,563	590	635	886
Total naval stores, gums, and resins.					22,909	23,179	28,783

[3] Jan. 1-June 30.
[21] Excludes fruit juices prior to Jan. 1, 1924.
[22] Includes fruit juices prior to Jan. 1, 1924.
[23] Of 500 pounds.
[24] Of 280 pounds.

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*—Continued

Articles exported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
FOREST PRODUCTS—contd							
Wood:							
Boards, deals, planks, etc.—		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Hardwoods—							
Ash	M ft	[3] 9	19	23	[3] 682	1,383	1,692
Chestnut	M ft	10	8	6	803	528	419
Gum	M ft	54	49	52	2,963	2,430	2,574
Hickory	M ft	3	3	4	237	343	467
Mahogany	M ft	(25)	[3] 8	17	(25)	[3] 1,291	2,307
Oak	M ft	138	162	174	9,645	10,904	11,845
Poplar	M ft	20	28	29	1,849	2,241	2,090
Walnut	M ft	6	7	11	878	997	1,531
Other hardwoods	M ft	56	31	26	5,065	2,938	1,880
Total hardwoods	M ft	296	315	342	22,122	23,055	24,805
Softwoods—							
Cypress	M ft	10	8	10	674	552	596
Douglas fir	M ft	[17] 228	(26)	(26)	[17] 5,236	(26)	(26)
Dressed	M ft	[3] 11	28	17	[3] 486	1,317	609
Rough	M ft	[3] 229	601	560	[3] 6,325	17,113	12,563
Hemlock	M ft	[3] 30	136	132	[3] 739	3,939	2,247
Redwood	M ft	45	52	36	2,813	3,655	2,514
Southern yellow pine	M ft	[17] 241	(27)	(27)	[17] 9,581	(27)	(27)
Dressed	M ft	[3] 104	105	99	[3] 4,566	4,497	4,110
Rough	M ft	[3] 242	513	640	[3] 10,615	21,627	26,803
Spruce	M ft	25	38	31	1,224	2,298	1,829
Western yellow pine	M ft	14	20	25	569	947	1,007
White pine	M ft	27	21	15	1,898	1,496	1,028
Other softwoods	M ft	47	30	22	1,800	1,866	1,144
Total softwoods	M ft	1,253	1,552	1,587	46,526	59,307	55,150
Cooperage and box material—							
Box shooks	Ft. b. m	[17] 30,497	(28)	(29)	[17] 1,017	(28)	(29)
Hemlock	Ft. b. m	(30)	[3] 3,249	30,941	(30)	[3] 132	955
Southern yellow pine	Ft. b. m	[3] 16,177	16,241	13,629	[3] 690	833	624
Spruce	Ft. b. m	(30)	(30)	[3] 1,051	(30)	(30)	[3] 41
Other box shooks	Ft. b. m	[3] 31,356	74,722	57,966	[3] 1,036	3,140	2,293
Cooperage—							
Heading	Set	2,774	3,045	3,808	380	484	626
Shooks—							
Slack	Set	199	575	1,028	90	311	656
Tight	Set	1,386	1,045	1,101	4,007	3,166	3,983
Staves—							
Slack	No	36,057	40,088	50,868	771	725	791
Tight	No	21,409	20,780	29,009	3,042	3,090	3,873
Total cooperage and box material					11,033	11,881	13,842
Laths	M	42	39	21	267	240	109
Logs and hewn timber—							
Hardwoods	M ft	12	20	25	594	1,371	1,654
Softwoods—							
Cedar	M ft	57	112	102	2,284	3,740	3,049
Douglas fir	M ft	41	16	7	728	315	149
Yellow pine (southern)	M ft	4	7	8	140	228	324
Other softwoods	M ft	6	4	9	129	95	161
Total logs and hewn timber	M ft	120	159	151	3,875	5,749	5,337

[3] Jan. 1–June 30.
[17] July 1–Dec. 31.
[26] Included with Boards, deals and planks, "Other hardwoods."
[26] Classified as Boards, deals and planks, Softwoods, Douglas fir, "Dressed" and "Rough."
[27] Classified as Boards, deals and planks, Softwoods, Southern yellow pine, "Dressed" and "Rough."
[28] Classified as "Hemlock," "Southern yellow pine," and "Other."
[29] Classified as "Hemlock," "Southern yellow pine," "Spruce," and "Other."
[30] Included with "Other box shooks."

TABLE 641.—*Agricultural products: Exports (domestic) of the United States, 1923–1925*—Continued

Articles exported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
FOREST PRODUCTS—contd.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Wood—Continued.							
Piling	Lin. ft	[21]	1,993	1,834	319	591	485
Pulpwood	Cu. ft	1,303	2,684	847	92	189	54
Railroad ties—							
Hardwood	No	643	536	577	830	830	761
Softwood	No	1,817	2,223	[17] 707	1,605	2,256	[17] 605
Treated	No	[22]	[22]	[3] 544	[22]	[22]	[3] 573
Untreated	No	[22]	[22]	[3] 870	[22]	[22]	[3] 737
Total railroad ties	No	2,460	2,759	2,698	2,485	3,086	2,676
Shingles	M	26	30	35	154	171	181
Telegraph, trolley, and electric light poles.	No	30	54	83	214	341	359
Timber, sawed—							
Hardwoods—							
Oak	M ft	3	4	2	166	216	141
Other hardwoods	M ft	1	5	2	110	287	134
Softwoods—							
Cedar	M ft	19	40	34	1,013	2,124	1,546
Douglas fir	M ft	179	[17] 274	[23]	4,514	[17] 8,376	[23]
Treated	M ft	[24]	[3] 12	18	[24]	[3] 376	419
Untreated	M ft	[24]	[3] 282	337	[24]	[3] 8,323	7,220
Southern yellow pine.	M ft	172	[17] 73	[25]	6,794	[17] 3,058	[25]
Treated	M ft	[26]	[3] 1	6	[26]	[3] 61	243
Untreated	M ft	[26]	[3] 93	165	[26]	[3] 3,624	6,511
Other softwoods	M ft	9	31	22	286	1,066	645
Total timber sawed.	M ft	383	815	586	12,883	27,511	16,859
Miscellaneous forest products:							
Firewood and other unmanufactured wood.	Cu. ft	2,566	2,467	2,150	211	187	132
Hardwood flooring	M ft. b. m.	[3] 2	7	7	[3] 158	544	494
Moss	Lb	906	653	[16]	83	60	[16]
Veneers and plywood	Sq. ft	50,360	52,540	[17] 25,230	1,452	1,681	[17] 751
Plywood	Sq. ft	[27]	[27]	[3] 8,571	[27]	[27]	[3] 334
Veneers	Sq. ft	[27]	[27]	[3] 26,224	[27]	[27]	[3] 714
Wood alcohol	Gal	1,528	[28] 1,089	[28] 908	1,333	[28] 1,080	[28] 820
Wood pulp—							
Soda	Ton	3	2	2	301	192	197
Sulphite	Ton	14	17	22	801	986	1,309
Other wood pulp	Ton	2	5	8	82	357	925
Miscellaneous lumber	Ft. b. m.	9,512	5,823	5,499	406	440	387
Total forest products					129,981	162,790	156,640
Total vegetable products, including forest products.					1,590,747	1,671,170	2,097,848
Total vegetable products, excluding forest products.					1,460,766	1,508,371	1,941,208
Total agricultural exports, including forest products.					1,929,150	2,029,897	2,436,805
Total agricultural exports, excluding forest products.					1,799,169	1,867,098	2,280,165

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, June, 1925.

[3] Jan. 1–June 30.
[16] Included with Vegetable products, "Other, n. e. s."
[17] July 1–Dec. 31.
[21] Reported in value only.
[22] Classified as Railroad ties, "Softwood."
[23] Classified as Timber, sawed, Douglas fir, "Treated," and "Untreated."
[24] Classified as Timber, sawed, "Douglas fir."
[25] Classified as Timber, sawed, Southern yellow pine, "Treated," and "Untreated."
[26] Classified as Timber, sawed, "Southern yellow pine."
[27] Classified as Miscellaneous forest products, "Veneers" and "Plywood."
[28] Includes "Alcohols" or "Other alcohols, pure and denatured," and "Menthanol, pure and denatured."

TABLE 642.—*Agricultural products: Shipments from the United States to Alaska, Hawaii and Porto Rico, 1923–1925*

ALASKA

Article shipped	Unit	Quantity			Value		
		Year ended June 30			Year ended June 30		
		1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Animals, live, total					70	115	77
Dairy products:							
Butter	Lb	1,487	1,523	1,529	686	689	676
Cheese	Lb	279	294	298	81	89	85
Milk, condensed or preserved	Lb	4,902	5,040	5,557	456	481	483
Total dairy products	Lb	6,668	6,857	7,384	1,223	1,259	1,244
Eggs	Doz	1,506	1,516	1,543	519	546	624
Meats and meat products:							
Beef and veal, total	Lb	3,989	4,191	4,186	591	623	621
Mutton and lamb	Lb	463	493	461	87	98	95
Pork, total	Lb	2,102	2,842	3,006	584	655	805
Lard	Lb	436	482	420	71	76	77
Lard compounds	Lb	400	310	271	62	48	45
Miscellaneous meats and meat products	Lb	268	1,286	1,255	341	279	284
Total meats and meat products					1,736	1,779	1,927
Miscellaneous animal products, n. e. s	Lb	[1] 49	150	137	[1] 5	13	14
Total animals and animal products					3,553	3,712	3,886
VEGETABLE PRODUCTS							
Cocoa and chocolate	Lb	(2)	64	84	24	18	22
Coffee	Lb	824	933	905	271	302	375
Fruits, total					711	847	905
Grains and grain products:							
Grains and flours—							
Oats	Bu	152	121	102	105	76	71
Rice	Lb	1,404	1,326	1,200	90	85	93
Oatmeal and rolled oats	Lb	625	543	693	33	28	40
Wheat flour	Bbl	48	49	53	362	332	445
Other grains and flours					91	38	73
Total grains and flours					681	559	722
Miscellaneous grain products					248	301	327
Total grains and grain products					929	860	1,049
Nuts	Lb	(2)	147	102	37	35	27
Oilseeds and oilseed products:							
Oil cake and meal	Lb	194	68	106	4	1	2
Linseed oil	Lb	122	129	112	18	17	16
Other vegetable oils and fats	Lb	14	241	360	36	48	78
Total oilseeds and oilseed products					58	66	96
Seeds, field and vegetable	Lb	[1] 155	30	75	[1] 9	7	11
Sugar, molasses, and sirups, total					555	599	533
Tea	Lb	176	152	174	85	84	95
Tobacco, leaf, unmanufactured	Lb	[1] 5	4	2	[1] 3	2	1
Vegetables:							
Dried and fresh—							
Potatoes	Bu	134	126	145	131	159	209
Other dried and fresh vegetables	Bu	28	27	36	75	72	105
Canned vegetables	Lb	(2)	3,229	3,377	313	345	380
Other vegetables and preparations of	Lb	(2)	3,127	2,949	180	221	233
Total vegetables					699	797	927
Miscellaneous vegetable products:							
Beverages and fruit juices	Gal	[1] 40	71	91	[1] 42	90	109
Hay	Ton	4	4	4	110	94	101
Starch	Lb	76	59	88	8	6	8
Vegetable food products, n. e. s	Lb	[1] 22	49	101	[1] 4	14	27
Miscellaneous vegetable products, n. e. s	Lb	[1] 66	35	49	[1] 4	4	3
Total vegetable products					3,549	3,825	4,289

[1] Jan. 1–June 30.

[2] Reported in value only.

TABLE 642.—*Agricultural products: Shipments from the United States to Alaska, Hawaii and Porto Rico, 1923–1925*—Continued.

ALASKA—Continued

Article shipped	Unit	Year ended June 30 — Quantity 1923	Quantity 1924	Quantity 1925	Value 1923	Value 1924	Value 1925
FOREST PRODUCTS		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Naval stores: Rosin, tar, turpentine, and pitch.	Lb	(2)	1,183	1,123	29	51	52
Wood:							
Boards, planks, etc., total	M. ft	12	15	18	404	426	483
Box shooks	Set	(2)	2,624	2,837	483	556	586
Cooperage shooks	Set	[1] 42	419	132	[1] 117	312	249
Other wood					162	134	229
Total wood					1,166	1,428	1,547
Total forest products					1,195	1,479	1,599
Total value of shipments, including forest products.					8,297	9,016	9,774
Total value of shipments, excluding forest products.					7,102	7,537	8,175

HAWAII

ANIMALS AND ANIMAL PRODUCTS							
Animals, live, total					383	308	249
Dairy products:							
Butter	Lb	1,024	1,007	1,058	531	486	463
Cheese	Lb	435	459	474	121	130	123
Milk, condensed	Lb	4,758	5,501	5,917	624	723	724
Total dairy products	Lb	6,217	6,967	7,449	1,276	1,339	1,310
Eggs	Doz	1,473	1,605	1,614	467	488	547
Meats and meat products:							
Beef and veal, total	Lb	1,133	693	630	190	153	158
Mutton and lamb	Lb	17	24	14	4	6	4
Pork, total	Lb	1,641	2,456	2,605	532	586	692
Lard	Lb	302	279	151	43	38	24
Lard compounds	Lb	1,787	1,512	1,030	268	225	153
Miscellaneous meats and meat products	Lb	566	2,241	2,598	520	556	729
Total meats and meat products					1,557	1,564	1,760
Miscellaneous animal products, n. e. s.	Lb	19	1,041	49	4	42	18
Total animals and animal products					3,687	3,741	3,884
VEGETABLE PRODUCTS							
Cocoa and chocolate	Lb	(2)	405	517	134	105	134
Coffee	Lb	92	374	137	28	66	47
Fruits, total					969	947	1,109
Grains and grain products:							
Grains and flours—							
Barley	Bu	308	652	511	250	559	572
Corn	Bu	129	174	159	140	195	231
Oats	Bu	70	129	81	45	77	55
Rice	Lb	54,293	60,797	55,804	2,530	3,072	3,437
Wheat	Bu	77	100	92	106	117	154
Oatmeal and rolled oats	Lb	419	448	1,952	20	20	52
Wheat flour	Bbl	129	130	129	877	774	1,063
Other grains and flours					339	51	54
Total grains and flours					4,307	4,865	5,618
Miscellaneous grain products					1,082	1,306	1,404
Total grains and grain products					5,389	6,171	7,022
Nuts	Lb	(2)	431	474	93	95	106
Oilseeds and oilseed products:							
Oil cake and meal	Lb	[1] 2,248	4,327	7,183	[1] 43	84	130
Cottonseed oil	Lb	388	557	436	73	93	67
Linseed oil	Lb	488	518	443	72	79	73
Other vegetable oils and fats	Lb	(2)	321	905	54	58	160
Total oilseeds and oilseed products					242	314	430

[1] Jan. 1–June 30.

[2] Reported in value only.

TABLE 642.—*Agricultural products: Shipments from the United States to Alaska, Hawaii and Porto Rico, 1923–1925*—Continued

HAWAII—Continued

Article shipped	Unit	Year ended June 30					
		Quantity			Value		
		1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Seeds, field and vegetable	Lb.	[1] 83	183	126	[1] 21	31	29
Sugar, molasses, and sirups, total					825	619	256
Tea	Lb.	49	45	59	20	22	27
Tobacco, leaf, unmanufactured	Lb.	[1] 3	1	1	[1] 3	1	([2])
Vegetables:							
Dried and fresh—							
Potatoes	Bu.	296	270	293	210	324	336
Other dried and fresh vegetables	Bu.	82	88	81	128	148	174
Canned vegetables	Lb.	([2])	4,774	4,096	509	458	433
Other vegetables and preparations of	Lb.	([2])	2,220	3,045	152	200	263
Total vegetables					999	1,130	1,206
Miscellaneous vegetable products:							
Beverages and fruit juices	Gal.	[1] 51	114	120	[1] 45	107	121
Hay	Ton.	6	6	4	138	140	117
Starch	Lb.	240	135	196	12	11	14
Vegetable food products, n. e. s.	Lb.	[1] 169	178	85	[1] 22	39	41
Miscellaneous vegetable products, n. e. s.	Lb.	[1] 212	177	170	[1] 10	19	33
Total vegetable products					8,945	9,817	10,692
FOREST PRODUCTS							
Naval stores: Rosin, tar, turpentine, and pitch.	Lb.	([2])	901	705	51	57	41
Wood:							
Boards, planks, etc., total	M ft.	69	74	79	2,277	2,599	2,180
Box shooks	Set.	([2])	5,163	4,552	722	1,000	929
Cooperage shooks	Set.	[1] 2	10	3	[1] 2	13	5
Other wood					292	312	223
Total wood					3,293	3,924	3,337
Total forest products					3,344	3,981	3,378
Total value of shipments, including forest products					15,976	17,539	17,954
Total value of shipments, excluding forest products					12,632	13,558	14,576

PORTO RICO

ANIMALS AND ANIMAL PRODUCTS							
Animals, live, total					99	111	187
Dairy products:							
Butter	Lb.	1,114	1,311	743	372	427	334
Cheese	Lb.	2,302	2,888	3,115	571	715	610
Milk, condensed or preserved	Lb.	3,012	3,717	3,918	435	477	481
Total dairy products	Lb.	6,428	7,916	7,776	1,378	1,619	1,425
Eggs	Doz.	61	86	77	20	30	30
Meats and meat products:							
Beef and veal, total	Lb.	4,235	3,833	3,216	353	351	358
Mutton and lamb	Lb.	[1] 24	41	40	[1] 7	12	11
Pork, total	Lb.	19,827	21,389	21,186	2,538	2,556	2,969
Lard	Lb.	11,579	14,364	11,684	1,618	1,982	1,976
Lard compounds	Lb.	3,757	1,476	3,319	507	185	438
Miscellaneous meats and meat products	Lb.	1,743	5,903	5,523	680	811	878
Total meats and meat products					5,703	5,897	6,630
Miscellaneous animal products, n. e. s.	Lb.	[1] 20	83	50	[1] 6	26	24
Total animals and animal products					7,206	7,683	8,296

[1] Jan. 1–June 30. [2] Reported in value only. [3] Less than 500.

TABLE 642.—*Agricultural products: Shipments from the United States to Alaska, Hawaii and Porto Rico, 1923–1925*—Continued

PORTO RICO—Continued

Article shipped	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Cocoa and chocolate	Lb	(2)	575	525	164	193	175
Coffee	Lb	10	4	3	2	1	1
Fruits, total					350	455	414
Grains and grain products:							
Grains and flours—							
Oats	Bu	260	310	273	149	180	180
Rice	Lb	174,587	190,476	169,433	6,475	8,318	8,771
Oatmeal and rolled oats	Lb	518	677	695	47	63	67
Wheat flour	Bbl	424	431	409	2,506	2,350	2,822
Other grains and flours					604	484	510
Total grains and flours					9,781	11,395	12,350
Miscellaneous grain products					860	1,387	1,333
Total grains and grain products					10,641	12,782	13,683
Nuts	Lb	(2)	162	111	19	28	24
Oilseeds and oilseed products:							
Oil cake and meal	Lb	2,890	1,574	616	77	40	15
Cottonseed oil	Lb	238	81	131	33	11	17
Linseed oil	Lb	815	886	834	109	115	117
Other vegetable oils and fats	Lb	(2)	1,556	1,479	54	206	211
Total oilseeds and oilseed products					273	372	360
Seeds, field and vegetable	Lb	[1] 51	48	36	[1] 8	8	8
Sugar, molasses, and sirups, total					510	620	347
Tea	Lb	9	5	7	4	2	3
Tobacco, leaf, unmanufactured	Lb	3,054	2,794	2,947	770	708	645
Vegetables:							
Dried and fresh—							
Beans and peas, dried	Bu	360	463	485	1,285	1,669	2,110
Onions	Bu	82	94	113	136	166	197
Potatoes	Bu	470	457	550	456	551	524
Canned vegetables	Lb	(2)	1,559	1,516	175	153	148
Other vegetables and preparations of	Lb	(2)	972	2,267	41	88	178
Total vegetables					2,093	2,627	3,157
Miscellaneous vegetable products:							
Beverages and fruit juices	Gal	[1] 130	323	332	[1] 139	319	365
Hay	Ton	1	1	1	18	17	32
Starch	Lb	645	1,267	1,267	22	41	50
Vegetable food products, n. e. s.	Lb	[1] 354	422	318	[1] 29	51	47
Miscellaneous vegetable products, n. e. s.	Lb	[1] 72	253	266	[1] 13	24	20
Total vegetable products					15,055	18,246	19,331
FOREST PRODUCTS							
Naval stores: Rosin, tar, turpentine, and pitch.	Lb	(2)	673	374	18	19	18
Wood:							
Boards, planks, etc., total	M ft	47	63	50	1,314	2,283	1,673
Box shooks	Set	(2)	2,062	1,683	358	401	276
Cooperage shooks	Set	[1] 39	105	28	[1] 31	118	36
Other wood					98	69	80
Total wood					1,801	2,871	2,065
Total forest products					1,819	2,890	2,083
Total value of shipments, including forest products.					24,080	28,819	29,710
Total value of shipments, excluding forest products.					22,261	25,929	27,627

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, June, 1925, Part II.

[1] Jan. 1–June 30.

[2] Reported in value only.

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*

Article imported	Year ended June 30						
	Quantity				Value		
	Unit	1923	1924	1925 preliminary	1923	1924	1925 preliminary
ANIMALS AND ANIMAL PRODUCTS		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Animals, live:							
Cattle	No.	252	155	136	6,622	5,341	3,822
Horses	No.	3	2	2	846	942	1,112
Sheep	No.	83	35	46	543	216	320
Birds	No.	[1] 353	460	430	[1] 317	595	669
Poultry	Lb.	[1] 932	1,264	1,781	[1] 225	278	336
Other live animals	Lb.	[2]	[2]	[2]	1,068	1,427	3,626
Total live animals					9,621	8,799	9,885
Dairy products:							
Butter	Lb.	15,772	29,466	7,189	5,821	10,740	2,550
Casein or lactarine	Lb.	26,095	17,441	19,516	4,136	1,948	1,463
Cheese	Lb.	54,555	66,597	61,489	17,313	21,066	17,216
Milk and cream—							
Condensed, evaporated, etc.	Lb.	7,276	[3] 7,679	[4]	934	[3] 1,101	[4]
Cream—Powdered, malted, etc.	Lb.	[5]	[6] 159	719	[5]	[6] 12	66
Milk—							
Sweetened	Lb.	[5]	[6] 2,752	5,764	[5]	[6] 429	716
Unsweetened	Lb.	[5]	[6] 98	2,269	[5]	[6] 12	253
Powdered	Lb.	[5]	[6] 810	2,988	[5]	[6] 131	316
Sweet or sour and buttermilk	Gal.	5,148	[3] 4,814	[7]	4,148	[3] 3,420	[7]
Cream	Gal.	[5]	[6] 1,646	4,765	[5]	[6] 2,475	6,924
Milk	Gal.	[5]	[6] 1,809	6,418	[5]	[6] 316	1,017
Total dairy products					32,352	41,650	30,521
Eggs and egg products:							
Egg albumen, dried, frozen, etc.	Lb.	3,213	[3] 6,331	[8]	1,369	[3] 2,368	[8]
Dried	Lb.	[10]	[6] 311	3,257	[10]	[6] 232	2,680
Frozen, prepared, or preserved	Lb.	[10]	[6] 636	1,106	[10]	[6] 75	147
Eggs and egg yolks, preserved	Lb.	14,821	[3] 14,830	[11]	2,828	[3] 3,535	[11]
Eggs, whole—							
Dried	Lb.	[12]	[6] 544	1,884	[12]	[6] 184	961
Frozen	Lb.	[12]	[6] 1,106	8,751	[12]	[6] 167	1,279
Yolks—							
Dried	Lb.	[12]	[6] 522	4,281	[12]	[6] 130	941
Frozen	Lb.	[12]	[6] 1,210	4,152	[12]	[6] 214	653
Eggs in shell	Doz.	535	426	682	159	125	185
Total eggs and egg products					4,356	7,030	6,846
Hides and skins, raw (except fur):							
Buffalo hides—							
Dry and dry salted	Lb.	2,585	1,478	2,007	352	307	425
Wet salted	Lb.	[1] 1,216	789	1,049	[1] 215	151	222
Total buffalo hides	Lb.	3,801	2,267	3,056	567	458	647
Calfskins—							
Dry and dry salted, less than 6 pounds	Lb.	[13] 14,988	10,754	8,087	[13] 4,092	3,476	3,309
Wet salted, less than 12 pounds	Lb.	[13] 30,736	18,451	23,138	[13] 7,048	4,154	5,884
Total calfskins	Lb.	[13] 45,724	29,205	31,225	[13] 11,050	7,630	9,193

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[3] July 1–Dec. 31.
[4] Classified as "Cream, powdered, malted, etc." and "Milk, sweetened, unsweetened and powdered."
[5] Classified as "Milk and cream, condensed, evaporated, etc."
[6] Jan. 1–June 30.
[7] Classified as Sweet or sour, and buttermilk, "Cream," and "Milk."
[8] Classified as "Milk and cream, sweet or sour, and buttermilk."
[9] Classified as Egg albumen, "Dried" and "Frozen, prepared or preserved."
[10] Classified as "Egg albumen, dried and frozen, etc."
[11] Classified as Eggs, preserved, whole, "Dried" and "Frozen;" yolks, "Dried" and "Frozen."
[12] Classified as "Eggs and egg yolks, preserved."
[13] Includes Kipskins until Sept. 21, 1922.

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Quantity: Year ended June 30			Value: Year ended June 30		
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
ANIMALS AND ANIMAL PRODUCTS—contd.							
Hides and skins, raw (except fur)—Con.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Cattle hides—							
Dry and dry salted	Lb	58,770	[2] 18,112	14,376	9,936	2,984	2,568
Wet salted	Lb	346,613	158,363	184,936	54,576	20,623	26,646
Total cattle hides	Lb	405,383	176,475	199,312	64,512	23,607	29,214
Goat and kid skins—							
Dry and dry salted	Lb	70,794	51,811	57,202	33,247	24,677	24,353
Green or pickled	Lb	18,607	14,070	8,754	4,365	3,410	2,029
Total goat and kid skins	Lb	89,401	65,881	65,956	37,612	28,087	26,382
Horse, colt, and ass hides—							
Dry and dry salted	Lb	11,939	3,885	4,954	1,451	540	798
Wet salted	Lb	10,462	6,415	5,810	944	564	582
Total horse, colt and ass hides	Lb	22,401	10,300	10,764	2,395	1,104	1,380
Kangaroo and wallaby skins	Lb	1,152	1,256	694	1,084	1,170	513
Kip—							
Dry and dry salted, 6–12 pounds	Lb	[1] 11,628	3,541	1,864	[1] 2,120	589	388
Wet salted, 12–25 pounds	Lb	[1] 9,168	7,857	4,997	[1] 1,908	1,405	1,047
Total kip skins	Lb	[1] 20,796	11,398	6,861	[1] 4,028	1,994	1,436
Sheep and lamb skins—							
Dry	Lb	[14] 3,828	[15]	[15]	[14] 853	[15]	[15]
Green or pickled	Lb	[14] 16,557	[15]	[15]	[14] 2,416	[15]	[15]
Slats, dry and pickled	Lb	[16] 38,259	46,842	49,305	[16] 8,137	11,739	17,721
Splits (fleshers and skivers) pickled	Lb	[16] 3,024	1,878	720	[16] 702	455	236
Wooled, dry and green	Lb	[16] 24,708	12,725	12,286	[16] 5,096	3,131	4,201
Total sheep and lamb skins	Lb	86,376	61,445	62,311	17,204	15,325	22,158
Miscellaneous hides and skins, n. e. s.	Lb	7,859	6,966	7,100	1,939	1,443	1,726
Total hides and skins	Lb	682,893	365,193	387,279	140,391	80,818	92,649
Meats and meat products:							
Beef and veal, fresh	Lb	32,481	[3] 13,043	[15]	3,189	[3] 1,594	[15]
Beef, fresh	Lb	[17]	[6] 8,678	8,624	[17]	[6] 794	786
Veal, fresh	Lb	[17]	[6] 3,423	3,795	[17]	[6] 462	500
Total beef and veal	Lb	32,481	25,144	12,419	3,189	2,850	1,286
Mutton and lamb, fresh	Lb	8,709	[3] 1,737	[18]	1,421	[3] 382	[18]
Lamb, fresh	Lb	[19]	[6] 825	561	[19]	[6] 110	102
Mutton, fresh	Lb	[19]	[6] 935	205	[19]	[6] 84	26
Total mutton and lamb	Lb	8,709	3,497	766	1,421	576	128
Pork, fresh	Lb	998	1,218	8,463	188	278	1,452
Poultry—							
Dead or prepared	Lb	2,907	[3] 937	[20]	1,186	[3] 318	[20]
Dead	Lb	[21]	[6] 477	1,996	[21]	[6] 108	565
Prepared	Lb	[21]	[6] 297	428	[21]	[6] 193	284

[1] Beginning Sept. 22, 1922.
[2] July 1–Dec. 1.
[6] Jan. 1–June 30.
[14] July 1–Sept. 21, 1922.
[15] Classified as "Slats, dry and pickled" and "Splits (fleshers and skivers) pickled."
[16] Classified as "Beef, fresh" and "Veal, fresh."
[17] Classified as "Beef and veal, fresh."
[18] Classified as "Mutton, fresh" and "Lamb, fresh."
[19] Classified as "Mutton and lamb, fresh."
[20] Classified as Poultry, "Dead" and "Prepared."
[21] Classified as Poultry, "Dead or prepared."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Year ended June 30					
		Quantity			Value		
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
ANIMALS AND ANIMAL PRODUCTS—con.							
Meats and meat products—Continued.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Miscellaneous meats—							
Meats, prepared or preserved	Lb.	8,991	[3] 5,583	[22]	1,118	[3] 691	[22]
Canned meats	Lb.	[23]	[6] 3,520	12,423	[23]	[6] 356	1,318
Meat extracts	Lb.	[23]	[6] 118	267	[23]	[6] 106	223
Other prepared meats	Lb.	[23]	[6] 1,988	2,868	[23]	[6] 268	650
Miscellaneous meats, n. e. s.	Lb.	2,340	1,485	1,120	559	316	209
Total meats					7,661	6,060	6,115
Oils and fats, animal—							
Beef and hog fats	Lb.	11,016	2,783	4,212	838	224	425
Grease and oils, n. e. s.	Lb.	[24] 1,465	[2]	[2]	619	398	320
Wool grease	Lb.	[25]	[6] 8,581	9,154	[25]	[6] 240	299
Miscellaneous oils, n. e. s.	Gal.	[14]	[26]	[26]	[14] 154	[26]	[26]
Total oils and fats					1,611	862	1,044
Total meats and meat products					9,272	6,922	7,159
Silk, unmanufactured:							
Cocoons	Lb.	380	155	107	383	132	102
Raw silk	Lb.	52,684	46,172	59,135	405,796	350,980	353,149
Waste	Lb.	10,124	10,268	11,625	7,388	8,571	8,693
Total silk, unmanufactured	Lb.	63,188	56,595	70,270	413,567	358,792	361,944
Wool and mohair, unmanufactured:							
Carpet wool	Lb.	171,879	[8] 33,376	[27]	34,946	[3] 7,154	[27]
On the skin or in the grease	Lb.	[28]	[6] 69,445	106,238	[28]	[6] 15,754	30,925
Washed or scoured	Lb.	[28]	[5] 15,554	20,223	[28]	[5] 3,694	9,055
Total carpet wool	Lb.	171,879	118,375	138,461	34,946	26,602	39,980
Clothing wool	Lb.	43,703	[3] 4,531	[29]	14,555	[5] 1,615	[29]
In the grease and washed	Lb.	[30]	[6] 8,675	18,942	[30]	[6] 2,453	8,735
Scoured	Lb.	[30]	[6] 1,614	5,594	[30]	[6] 909	3,521
Total clothing wool	Lb.	43,703	12,820	24,446	14,555	4,977	12,256
Combing wool	Lb.	298,496	[3] 28,218	[31]	108,117	[3] 7,983	[31]
In the grease and washed	Lb.	[32]	[6] 76,960	112,003	[32]	[6] 31,528	66,309
Scoured	Lb.	[32]	[6] 2,885	4,986	[32]	[6] 1,446	3,761
Total combing wool	Lb.	298,496	103,063	117,991	108,117	43,957	70,070
Hair of the Angora goat (mohair), alpaca, and other like animals.	Lb.	[14] 2,851	[33]	[34]	[14] 1,069	[33]	[34]
Angora (mohair)	Lb.	[1] 7,221	[3] 1,126	[33]	[1] 2,857	[3] 738	[33]
In the grease and washed	Lb.	[35]	[6] 2,405	2,403	[35]	[6] 1,027	1,245
Scoured	Lb.	[35]	[6] 53	1	[35]	[6] 20	1
Cashmere, alpaca, etc.	Lb.	[1] 1,322	1,341	1,405	[1] 551	564	622
Total mohair, cashmere, alpaca, etc.	Lb.	11,394	4,925	3,809	4,477	2,309	1,868
Total wool and mohair, unmanufactured.	Lb.	525,472	289,123	284,707	162,086	77,729	124,164

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[3] July 1–Dec. 31.
[5] Jan. 1–June 30.
[14] July 1–Sept. 21, 1922.
[22] Classified as "Canned meats," "Meat extracts" and "Other prepared meats."
[23] Classified as "Meats, prepared or preserved."
[24] Excludes "Grease and oils, n. e. s.," dutiable.
[25] Included with "Grease and oils, n. e. s."
[26] Included with Whale oil, which is not considered an agricultural product.
[27] Classified as Carpet wool, "On the skin or in the grease" and "Washed or scoured."
[28] Classified as "Carpet wool."
[29] Classified as Clothing wool, "In the grease and washed" and "Scoured."
[30] Classified as "Clothing wool."
[31] Classified as Combing wool, "In the grease and washed" and "Scoured."
[32] Classified as "Combing wool."
[33] Classified as "Angora (mohair)," "In the grease and washed," and "Scoured."
[34] Classified as Angora (mohair), "In the grease and washed" and "Scoured."
[35] Classified as "Hair of the Angora goat (mohair), alpaca and other like animals," and "Angora (mohair)" and "Cashmere, alpaca, etc."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
ANIMALS AND ANIMAL PRODUCTS—con.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Miscellaneous animal products:							
Beeswax	Lb	3,921	3,271	2,956	814	708	875
Blood, dried	Lb	(36)	[6] 3	8	(36)	[6] 181	415
Bones, hoofs, and horns, unmanufactured	Lb	101,269	101,152	120,948	1,484	1,382	1,425
Bristles—							
Crude, not sorted, etc	Lb	61	6	5	21	17	13
Sorted, bunched or prepared	Lb	5,623	5,733	4,255	7,773	9,748	8,128
Feathers, crude, not advanced—							
Ostrich	Lb	179	159	125	1,140	787	553
Other feathers	Lb	4,821	4,236	3,563	2,075	2,275	2,162
Gelatin	Lb	4,379	5,274	4,827	1,576	1,842	1,804
Glue and glue size	Lb	6,930	8,062	6,708	702	668	577
Glue stock and hide cuttings	Lb	29,758	28,412	29,309	1,167	1,099	1,176
Hair, unmanufactured—							
Horse	Lb	7,493	4,990	4,402	3,300	2,551	2,400
Other animal hair	Lb	9,609	8,807	12,559	1,196	1,242	1,539
Honey	Lb	693	348	319	60	36	39
Sausage casings	Lb	18,503	20,386	17,755	11,891	13,955	15,093
Miscellaneous animal products, n. e. s.	Lb	(2)	[37] 1,446	[37] 2,209	1,670	2,542	2,619
Total animals and animal products.					806,523	620,768	671,986
VEGETABLE PRODUCTS							
Chocolate and cocoa:							
Chocolate and cocoa, prepared	Lb	2,421	[3] 1,456	(38)	549	[3] 357	(38)
Chocolate, prepared	Lb	(39)	[6] 383	1,589	(39)	[6] 105	501
Cocoa, prepared	Lb	(39)	[6] 1,417	2,530	(39)	[6] 196	386
Cocoa or cacao beans	Lb	381,508	382,971	382,570	34,547	28,346	34,833
Coffee	Lb	1,305,188	1,429,617	1,279,570	181,639	206,519	267,153
Cotton, unmanufactured:							
Long staple (478 lbs.)	Bale	159	129	111	22,032	21,142	20,409
Short staple (478 lbs.)	Bale	335	176	213	38,608	22,619	30,231
Total cotton, unmanufactured (478 lbs.).	Bale	494	305	324	60,640	43,761	50,640
Fruits:							
Dried—							
Currants	Lb	18,924	17,155	15,064	1,632	1,352	1,091
Dates	Lb	52,037	44,143	63,444	2,685	1,817	2,844
Figs	Lb	36,585	31,668	45,259	1,993	2,094	2,614
Raisins and other dried grapes	Lb	12,335	5,743	10,004	1,177	501	854
Total dried fruits [40]	Lb	119,881	98,710	133,771	7,487	5,764	7,403
Fresh—							
Apples	Bu	[1] 153	131	106	[1] 299	244	239
Bananas	Bunch	44,504	44,935	50,513	18,909	20,461	25,702
Berries	Lb	[1] 1,248	3,639	5,295	[1] 111	373	415
Cherries, natural state	Lb	(41)	[6] 2,970	4,937	(41)	[6] 249	405
Citrus							
Grapefruit	Lb	(2)	11,755	15,237	643	348	478
Lemons	Lb	122,818	75,297	93,530	2,690	1,729	1,975
Limes and oranges	Lb	(2)	[3] 3,331	(42)	224	[3] 104	(42)
Limes	Lb	(43)	[6] 2,144	3,881	(43)	[6] 70	102
Oranges	Lb	(43)	[6] 245	1,049	(43)	[6] 8	51
Grapes	Cu. ft.	1,355	831	133	1,920	1,534	550
Pineapples		(2)	(2)	(2)	2,539	2,642	3,405
Total fresh fruits [40]					27,335	27,762	33,331

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[3] July 1–Dec. 31.
[6] Jan. 1–June 30.
[36] Included with Nitrogenous fertilizers, "Other."
[37] Excludes "Miscellaneous animal products, n. e. s.," free of duty.
[38] Classified as "Chocolate, prepared" and "Cocoa, prepared."
[39] Classified as "Chocolate and cocoa, prepared."
[40] Excludes "Miscellaneous fruits n. e. s."
[41] Included with "Miscellaneous fruits, n. e. s."
[42] Classified as "Limes" and "Oranges."
[43] Classified as "Limes and oranges."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Year ended June 30						
	Quantity				Value		
	Unit	1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—continued							
Fruits—Continued		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Prepared or preserved—							
Cherries	Lb.	(41)	[6] 1,380	9,175	(41)	[6] 150	777
Fruits, canned or preserved	Lb.	(2)	(44)	(44)	[14] 505	(44)	(44)
Citron or citron peel	Lb.	(45)	[6] 2,611	2,842	(45)	[6] 396	644
Ginger root, preserved	Lb.	(45)	[6] 387	715	(45)	[6] 58	108
In their own juices, or in sugar or spirits.	Lb.	[1] 772	1,372	1,020	[1] 102	170	128
Jellies, jams, marmalades, and fruit butter.	Lb.	(45)	[6] 1,392	2,445	(45)	[6] 221	394
Other prepared or preserved fruits.	Lb.	[1] 8,171	6,013	1,722	[1] 1,026	746	95
Olives	Lb.	(2)	6,848	5,901	4,870	4,384	4,369
Pineapples	Lb.	(41)	[6] 2,975	3,081	(41)	[6] 214	268
Miscellaneous fruits, n. e. s.	Lb.	(2)	32,502	16,978	3,325	2,194	866
Total fruits					44,650	42,059	48,383
Grains and grain products:							
Grains—							
Buckwheat	Lb.	(46)	[6] 7,394	26,029	(46)	[6] 130	503
Corn	Bu.	138	228	4,617	158	227	4,150
Oats	Bu.	293	4,244	3,041	178	2,017	1,456
Rice—							
Cleaned, except patna	Lb.	56,947	32,193	41,639	1,772	1,252	1,759
Uncleaned	Lb.	11,678	5,118	12,024	362	264	667
Wheat	Bu.	18,013	27,284	6,169	20,034	25,994	8,580
Total grains					22,504	29,884	17,115
Meal and flours—							
Rice flour, meal, etc.	Lb.	911	900	4,013	57	55	155
Wheat flour	Lb.	84,166	33,150	1,317	2,308	838	39
Miscellaneous grain products—							
Biscuits, wafers, cakes, etc.	Lb.	846	1,119	1,303	203	281	341
Bran, shorts, and other by-product feeds.	Ton.	[1] 91	167	256	[1] 1,824	3,541	5,993
Bread, yeast, leavened	Lb.	(46)	[6] 1,015	2,231	(46)	[6] 121	289
Macaroni, vermicelli, etc.	Lb.	3,254	[6] 3,870	6,191	250	[6] 254	422
Other grain products, n. e. s.	Lb.	(2)	[47] 1,913	[47] 2,098	1,041	588	844
Total grains and grain products.					28,187	35,562	25,198
Nuts:							
Almonds—							
Shelled	Lb.	22,972	23,411	21,351	5,641	4,855	7,276
Unshelled	Lb.	4,576	2,654	3,802	425	222	383
Brazil and cream nuts	Lb.	39,806	45,241	32,701	2,045	2,451	2,622
Chestnuts, including marrons	Lb.	20,151	27,209	28,406	941	1,024	1,122
Coconuts in the shell	No.	77,033	65,209	54,750	1,743	1,723	1,489
Coconut meat, desiccated or prepared.	Lb.	32,496	45,147	43,309	2,371	3,619	3,596
Filberts—							
Shelled	Lb.	6,209	7,353	4,345	948	1,102	1,146
Unshelled	Lb.	14,366	14,111	9,326	1,057	909	1,029
Peanuts—							
Shelled	Lb.	42,439	48,310	85,610	2,011	2,130	4,249
Unshelled	Lb.	3,802	3,561	11,371	171	149	535
Pecans	Lb.	(48)	(48)	2,941	(48)	(48)	262
Pignolia	Lb.	(48)	[6] 192	691	(48)	[6] 42	141
Pistache	Lb.	(48)	[6] 1,207	842	(48)	[6] 461	385

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[6] Jan. 1–June 30.
[41] Included with "Miscellaneous fruits, n. e. s."
[44] Classified as "Citron or citron peel," "Ginger root, preserved," and "Jellies, jams, marmalades and fruit butter."
[45] Included with Fruits, "Other prepared or preserved."
[46] Included with "Other grain products, n. e. s."
[47] Excludes "Other grain products, n. e. s.," dutiable.
[48] Included with Nuts, "Miscellaneous, n. e. s."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Quantity: 1923	Quantity: 1924	Quantity: 1925 preliminary	Value: 1923	Value: 1924	Value: 1925 preliminary
		Year ended June 30					
VEGETABLE PRODUCTS—continued							
Nuts—Continued.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Walnuts—							
Shelled	Lb.	17,606	18,765	23,640	4,438	4,462	6,808
Unshelled	Lb.	19,913	18,245	30,912	2,406	1,894	3,737
Miscellaneous nuts, n. e. s.	Lb.	(2)	3,287	1,969	1,715	622	354
Total nuts					25,912	25,665	35,134
Oilseeds and oilseed products:							
Oil cake and oil-cake meal	Lb.	[14] 24,251	(49)	(49)	[14] 636	(49)	(49)
Bean	Lb.	[1] 22,772	31,909	41,315	[1] 422	576	774
Coconut	Lb.	[1] 46,055	58,162	55,249	[1] 565	542	816
Miscellaneous oil cake and oil-cake meal.	Lb.	[1] 21,500	39,020	34,743	[1] 393	705	620
Total oil cake and oil-cake meal					2,016	1,823	[4] 2,210
Oils—							
Essential and distilled—							
Bergamot	Lb.	[1] 113	85	100	[1] 295	248	326
Citronella and lemon grass	Lb.	[1] 976	801	1,184	[1] 559	567	924
Geranium	Lb.	(50)	[6] 42	155	(50)	[6] 246	869
Lavender	Lb.	[1] 244	153	210	[1] 383	394	744
Lemon	Lb.	447	543	437	278	343	328
Orange	Lb.	[1] 183	211	224	[1] 361	497	492
Otto of roses	Oz.	(50)	[6] 26	36	(50)	[6] 127	247
Sandalwood	Lb.	(50)	[6] 42	34	(50)	[6] 200	158
Thyme	Lb.	(50)	[6] 62	92	(50)	[6] 36	65
Other essential and distilled oils.	Lb.	(2)	[51] 496	3,745	3,499	2,454	1,900
Total essential and distilled oils.					5,375	5,112	6,053
Expressed and fats—							
Chinese wood, or nut oil	Lb.	89,392	80,898	94,695	10,189	13,848	10,957
Cocoa butter	Lb.	3,010	1,169	733	757	207	132
Coconut oil	Lb.	212,573	181,230	250,328	14,968	13,934	20,230
Linseed oil	Lb.	56,764	17,840	23,587	5,053	1,871	2,179
Olive oil, edible	Lb.	74,626	[3] 36,210	(52)	12,852	[3] 5,565	(52)
In packages weighing less than 40 lbs.	Lb.	(53)	[6] 23,208	48,071	(53)	[6] 3,667	8,079
Other olive oil	Lb.	(53)	[6] 21,463	32,231	(53)	[6] 3,567	5,818
Olive oil, inedible	Lb.	42,636	[3] 11,346	(54)	3,445	[3] 944	(54)
Denatured	Lb.	(55)	[6] 6,239	8,621	(55)	[6] 679	982
Sulphured or foots	Lb.	(55)	[6] 14,943	28,924	(55)	[6] 1,376	2,317
Palm kernel oil	Lb.	(56)	[6] 1,126	37,364	(56)	[6] 100	3,267
Palm oil	Lb.	118,816	86,784	114,387	8,686	5,733	8,779
Peanut oil	Lb.	7,553	15,061	3,510	706	1,287	380
Rape oil	Gal.	1,770	2,068	1,959	1,226	1,366	1,512
Soy-bean oil	Lb.	38,635	17,631	20,434	2,412	1,156	1,547
Vegetable tallow	Lb.	[1] 8,467	3,887	7,081	[1] 584	278	539
Vegetable wax	Lb.	9,385	8,037	7,578	1,501	1,159	1,300
Miscellaneous oils, expressed and fats, n. e. s.	Lb.	(2)	11,043	17,596	2,100	1,046	1,996
Total expressed and fats					64,479	57,783	70,014
Total vegetable oils					69,854	62,895	76,067

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[3] July 1–Dec. 31.
[6] Jan. 1–June 30.
[14] July 1–Sept. 21, 1922.
[49] Classified as "Bean," "Coconut," and "Miscellaneous oil cake and oil-cake meal."
[50] Included with "Other essential and distilled oils."
[51] Excludes "Other essential and distilled oils," free of duty.
[52] Classified as Olive oil, edible, "In packages weighing less than 40 pounds" and "Other olive oil."
[53] Classified as "Olive oil, edible."
[54] Classified as Olive oil, inedible, "Denatured" and "Sulphured or foots."
[55] Classified as "Olive oil, inedible."
[56] Included with Vegetable oils, "Miscellaneous expressed and fats, n. e. s."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Year ended June 30					
		Quantity			Value		
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—continued							
Oilseed and oilseed products—Con.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Oilseeds:							
Castor beans	Lb	88,199	81,543	90,737	2,876	3,221	4,321
Copra, not prepared	Lb	306,100	239,774	328,652	11,594	12,803	15,482
Cottonseed	Lb	[1] 56,982	88,744	72,696	[1] 439	1,482	915
Flaxseed	Bu	25,006	19,577	13,419	50,455	36,426	31,328
Poppy seed	Lb	[1] 6,317	4,750	6,805	[1] 633	413	616
Miscellaneous oilseeds, n. e. s.	Lb	31,406	31,780	18,452	1,349	1,309	833
Total oilseeds					67,326	55,654	53,495
Seeds, except oilseeds:							
Alfalfa	Lb	[1] 5,165	12,899	4,810	[1] 589	1,623	780
Clover—							
Alsike	Lb	[1] 2,242	10,973	10,265	[1] 257	1,248	1,483
Crimson	Lb	[1] 1,451	7,729	4,885	[1] 188	567	279
Red	Lb	609	24,287	6,494	91	3,620	1,662
Miscellaneous clover, n. e. s.	Lb	9,601	10,102	7,743	1,149	1,424	1,027
Garden and other seeds—							
Cabbage	Lb	[1] 685	238	223	[1] 99	104	105
Canary	Lb	[1] 9,559	9,864	11,764	[1] 305	374	617
Turnip	Lb	[1] 596	1,487	1,394	[1] 97	170	178
Miscellaneous garden and flower seeds.	Lb	(2)	4,339	6,057	1,282	1,008	1,209
Grass seed	Lb	13,463	4,623	3,705	996	396	399
Sugar beet	Lb	15,880	11,620	14,250	1,579	1,121	1,484
Vetch and other field seeds, n. e. s.	Lb	[1] 7,139	8,652	8,311	[1] 839	1,025	792
Miscellaneous seeds, except oilseeds	Lb	(2)	34,187	6,835	1,341	1,494	275
Total seeds, except oilseeds					8,812	14,174	10,290
Spices:							
Allspice (Pimento) unground	Lb	[57]	[6] 1,430	3,420	[57]	[6] 48	165
Anise seed	Lb	[57]	[6] 282	322	[57]	[6] 33	36
Capsicum, red pepper, or cayenne pepper—							
Ground	Lb	3,642	3,152	1,985	491	554	334
Unground	Lb	6,772	4,854	3,511	603	633	425
Caraway seed	Lb	[57]	[6] 947	6,191	[57]	[6] 209	567
Cardamon seed	Lb	[57]	[6] 80	176	[57]	[6] 80	222
Cassia and cassia vera—							
Ground	Lb	[57]	[6 58]	[58]	[57]	[6 58]	[58]
Unground	Lb	10,294	9,107	6,355	617	558	445
Celery seed	Lb	[57]	[6] 421	526	[57]	[6] 108	160
Cinnamon and chips of	Lb	[57]	[6] 360	1,561	[57]	[6] 109	325
Cloves, unground	Lb	6,776	6,050	5,800	1,144	1,465	1,239
Coriander seed	Lb	[57]	[6 58]	2,074	[57]	[6] 32	79
Cummin seed	Lb	[57]	[6] 555	1,602	[57]	[6] 111	228
Ginger root, unground, not preserved	Lb	6,313	4,964	4,312	675	570	635
Mace, unground	Lb	[57]	[6] 392	626	[57]	[6] 167	370
Mustard—							
Ground or prepared	Lb	1,764	1,456	1,472	1,018	755	819
Mustard seed, whole	Lb	13,216	16,136	9,928	600	800	607
Nutmegs, unground	Lb	5,258	3,527	4,206	699	582	1,230
Paprika	Lb	[59]	[59]	[6] 2,376	[59]	[59]	[6] 374
Pepper, unground	Lb	[14] 8,339	[60]	[60]	[14] 587	[60]	[60]
Black	Lb	[1] 20,386	22,353	31,219	[1] 1,346	1,534	2,781
White	Lb	[1] 4,823	4,982	3,286	[1] 483	566	1,035
Pimento, whole	Lb	[57]	[6] 1,753	2,953	[57]	[6] 211	329
Vanilla beans	Lb	1,281	828	840	2,884	3,610	5,853
Miscellaneous spices, n. e. s.	Lb	18,640	11,344	2,918	2,200	1,761	470
Total spices	Lb	107,504	95,626	100,702	13,440	14,585	18,698

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[6] Jan. 1–June 30.
[57] Included with "Miscellaneous spices, n. e. s."
[58] Less than 500.
[59] Included with "Capsicum, red pepper or cayenne pepper."
[60] Classified as Pepper, unground, "Black" and "White."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—continued		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Sugar, molasses, and sirups:							
Beet sugar (2,000 lbs.)	Ton	0	0	2	0	0	142
Cane sugar (2,000 lbs.)	Ton	4,367	3,765	4,337	365,101	373,361	277,880
Maple sugar and maple sirup	Lb	3,217	1,784	6,294	601	320	874
Molasses	Gal	161,135	174,037	215,778	2,985	6,666	14,989
Total sugar, molasses, and sirups					368,687	380,347	293,885
Tea	Lb	96,669	105,443	92,779	26,308	30,020	28,564
Tobacco, unmanufactured:							
Cigar leaf—							
Stemmed	Lb	[1] 9,529	11,013	12,530	[1] 9,943	13,642	14,795
Unstemmed	Lb	[1] 10,598	12,750	9,693	[1] 8,388	12,071	9,082
Cigarette leaf	Lb	[1] 32,822	21,058	46,012	[1] 22,413	17,949	39,794
Leaf suitable for cigar wrappers	Lb	8,794	6,414	5,766	19,432	15,230	14,190
Product of the Philippine Islands	Lb	1,924	1,145	1,130	228	163	161
Scraps and other unmanufactured tobacco.	Lb	[1] 1,990	2,118	1,738	[1] 596	875	635
Other leaf tobacco	Lb	[14] 10,129	([61])	([61])	[14] 8,193	([61])	([61])
Total tobacco, unmanufactured					69,193	59,930	78,657
Vegetables:							
Dried and fresh—							
Beans, dried	Lb	157,356	53,152	85,272	5,512	1,958	4,196
Chick peas or garbanzas	Lb	([62])	[6] 4,226	52,674	([62])	[6] 190	2,962
Farinaceous substances—arrowroot, cassava, sago, and tapioca.	Lb	93,964	90,961	116,314	3,465	4,255	4,685
Garlic	Lb	7,890	6,416	7,790	346	264	446
Mushrooms and truffles	Lb	5,991	[3] 2,516	([63])	1,817	[3] 722	([63])
Mushrooms	Lb	([64])	[6] 2,146	5,385	([64])	[6] 672	1,845
Truffles	Lb	([64])	[6] 14	54	([64])	[6] 35	76
Onions	Lb	101,604	80,166	118,258	1,900	1,760	2,468
Peas, dried	Lb	25,963	15,720	28,620	1,020	671	1,481
Potatoes—							
Natural state	Lb	34,329	33,843	28,653	836	938	597
Dried or prepared and flour of.	Lb	[14] 258	([65])	([65])	[14] 14	([65])	([65])
Tomatoes	Lb	([66])	[6] 50,838	69,218	([66])	[6] 1,626	2,348
Turnips	Lb	[1] 100,258	140,000	155,284	[1] 297	573	637
Miscellaneous vegetables, fresh, n. e. s.	Lb	([2])	([2])	([2])	3,551	2,369	2,059
Prepared or preserved—							
Canned—							
Peas	Lb	[1] 845	1,489	1,934	[1] 141	150	226
Tomatoes	Lb	[1] 20,166	39,946	64,457	[1] 1,280	1,646	3,035
Other vegetables, canned	Lb	[1] 2,267	3,920	6,335	[1] 229	389	597
Lentils	Lb	([65])	[6] 5,028	7,796	([65])	[6] 328	475
Pickles and sauces	Lb	([2])	[3] 4,939	([67])	1,171	[3] 434	([67])
Pickles	Lb	([68])	[6] 354	1,718	([68])	[6] 48	148
Sauces	Lb	([68])	[6] 4,679	9,838	([68])	[6] 388	743
Tomato paste	Lb	([65])	[6] 4,164	17,382	([65])	[6] 421	1,538
Tomatoes, otherwise prepared	Lb	([65])	[6] 1,341	9,443	([65])	[6] 69	511
Other vegetables, prepared or preserved.	Lb	([2])	19,424	13,220	2,262	1,361	692

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[3] July 1–Dec. 31.
[6] Jan. 1–June 30.
[14] July 1–Sept 21, 1922.
[61] Classified as Cigar leaf, "Stemmed" and "Unstemmed" and "Cigarette leaf."
[62] Included with "Miscellaneous seeds, except oilseeds."
[63] Classified as "Mushrooms" and "Truffles."
[64] Classified as "Mushrooms and truffles."
[65] Included with "Other vegetables prepared or preserved."
[66] Included with "Miscellaneous vegetables, fresh, n. e. s."
[67] Classified as "Pickles" and "Sauces."
[68] Classified as "Pickles and sauces."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—continued							
Vegetables—Continued.							
Prepared or preserved—Continued.							
Miscellaneous edible substances—							
Bean cake, miso, or similar products.	Lb.	*Thousands* (69)	*Thousands* [6] 692	*Thousands* 1,217	*1,000 dollars* (69)	*1,000 dollars* [6] 50	*1,000 dollars* 80
Miscellaneous edible substances, n. e. s.	Lb.	(2)	(2)	(2)	1,519	1,432	1,831
Total vegetables					25,330	22,849	33,676
Miscellaneous vegetable products:							
Argols or wine lees	Lb.	21,950	17,650	20,664	1,739	1,244	1,389
Beet pulp, dried	Ton	[1] 17	31	39	[1] 605	905	1,159
Beverages—							
Distilled liquors	Pf. gal.	54	48	56	203	232	276
Ginger ale, nonalcoholic	Gal.	(70)	[6] 46	73	(70)	[6] 65	95
Lemon, lime, and sour orange juice, not more than 2 per cent alcoholic.	Lb.	[1] 1,165	4,296	4,268	[1] 129	512	513
Wines—							
Champagne and other sparkling wines.	Gal.	14	2	2	83	12	11
Still wines	Gal.	162	91	80	259	121	123
Other beverages and fruit juices, n. e. s.	Lb.	(2)	(2)	(2)	481	373	197
Broomcorn	Ton	(71)	(71)	([6] 58)	(71)	(71)	[6] 5
Drugs, herbs, leaves, roots, etc.—							
Cinchona bark and other from which quinine may be extracted.	Lb.	3,443	2,422	2,539	1,110	692	774
Licorice extract	Lb.	[1] 1,329	1,163	1,971	[1] 300	223	308
Licorice root	Lb.	35,339	87,684	51,654	1,195	2,906	1,357
Nux vomica	Lb.	[1] 2,078	1,262	1,612	[1] 98	37	50
Opium, crude, 8.5 per cent or more of morphine.	Lb.	109	79	91	352	398	806
Pyrethum or insecticide flowers	Lb.	[1] 3,148	2,954	3,812	[1] 1,479	1,316	1,022
Senna	Lb.	[1] 2,623	2,968	3,194	[1] 208	281	278
Other drugs, herbs, leaves, roots, etc.	Lb.	[1] 22,480	19,369	17,498	[1] 2,356	2,709	2,552
Total drugs, herbs, leaves, roots, etc.					7,298	8,562	7,147
Fibers, vegetable—							
Flax, unmanufactured—							
Hackled	Ton.	2	1	1	2,281	1,363	1,632
Other flax	Ton.	6	4	3	2,019	891	1,402
Hemp, unmanufactured	Ton.	6	1	3	1,411	452	1,349
Istle or Tampico	Ton.	11	13	13	890	1,483	1,517
Jute and jute butts, unmanufactured.	Ton.	[14] 8	(73)	(73)	[14] 985	(73)	(73)
Jute	Ton.	[1] 66	71	52	[1] 10,132	7,904	8,846
Jute butts	Ton.	[1] 10	12	4	[1] 532	684	562
Kapok	Ton.	9	6	8	4,125	3,324	4,024
Maguey or cantala	Ton.	[1] 1	1	1	[1] 92	64	81
Manila or abaca	Ton.	98	98	73	13,202	13,525	17,266
Sisal and henequen	Ton.	98	97	146	9,806	11,801	23,023
Miscellaneous vegetable fibers, n. e. s.	Ton.	19	13	10	2,478	1,624	1,662
Hay	Ton.	32	360	106	345	3,898	1,122
Hops	Lb.	1,295	761	439	257	296	221
Indigo and derivatives	Lb.	37	15	5	40	11	4

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[6] Jan. 1–June 30.
[14] July 1–Sept. 21, 1922.
[58] Less than 500.
[69] Included with "Miscellaneous edible substances, n. e. s."
[70] Included with "Other beverages and fruit juices, n. e. s."
[71] Included with "Miscellaneous vegetable products, n. e. s."
[73] Classified as "Jute" and "Jute butts."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS—continued							
Miscellaneous vegetable products—Con.		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Moss, seaweeds, etc. crude	Lb	12, 537	8, 604	10, 038	571	355	602
Nursery and greenhouse stock—							
Bulbs, roots, and corms	No	[14]160, 259	(73)	(73)	[14] 4, 330	(73)	(73)
Hyacinth	No	[1] 6, 480	33, 229	27, 444	[1] 218	1, 190	1, 278
Lily, tulip, and narcissus	No	[1] 56, 210	209, 992	224, 211	[1] 1, 854	4, 943	5, 415
Other bulbs, roots, etc	No	[1] 7, 661	20, 910	20, 701	[1] 117	216	290
Trees, plants, cuttings and seedlings.		(2)	(74)	(74)	[14] 4	(74)	(74)
Fruit stock	No	[1] 16, 707	20, 309	17, 128	[1] 200	164	132
Rose stocks and plants	No	[1] 10, 627	11, 527	9, 424	[1] 189	149	119
Miscellaneous trees, plants, etc., n. e. s.	No	(2)	[75] 305	[75] 1, 404	136	130	179
Total nursery and greenhouse stock.					7, 048	6, 792	7, 413
Starch	Lb	12, 715	12, 126	10, 441	406	431	432
Vegetable ivory (tagua nuts)	Lb	33, 571	29, 973	36, 698	918	916	1, 865
Miscellaneous feeds and fodders, n.e.s.		(2)	(2)	(2)	[1] 925	1, 585	1, 820
Miscellaneous vegetable products, n.e.s		(2)	(2)	(2)	2, 372	1, 675	1, 959
Total vegetable products					1, 098, 722	1, 095, 947	1, 145, 487
FOREST PRODUCTS							
Dyeing and tanning materials:							
Extracts for dyeing, coloring, etc	Lb	3, 556	3, 949	3, 438	270	332	315
Extracts for tanning—							
Quebracho	Lb	120, 224	119, 086	101, 171	4, 796	3, 552	3, 206
Other extracts for tanning	Lb	7, 266	6, 826	4, 522	213	202	134
Gambier	Lb	7, 727	4, 743	5, 136	460	378	657
Logwood	Ton	27	31	23	426	590	393
Mangrove bark	Ton	7	2	2	200	37	47
Myrobalans fruit	Ton	[1] 22	14	11	[1] 429	352	326
Quebracho wood	Ton	43	29	23	556	440	355
Sumac	Ton	8	4	4	434	359	483
Valonia	Lb	[1] 7, 638	17, 029	24, 806	[1] 160	309	405
Other crude dyeing and tanning materials	Lb	(2)	62, 591	49, 721	1, 372	1, 024	1, 040
Total dyeing and tanning materials					9, 316	7, 575	7, 361
Gums, resins, and balsams:							
Balsams, crude	Lb	521	314	451	206	205	259
Camphor—							
Natural, crude	Lb	3, 498	1, 955	1, 904	2, 226	1, 179	1, 012
Refined and synthetic	Lb	3, 541	3, 275	[3] 1, 303	2, 534	2, 240	[3] 753
Refined	Lb	(76)	(76)	[6] 895	(76)	(76)	[6] 519
Synthetic	Lb	(76)	(76)	[6] 941	(76)	(76)	[6] 466
Chicle	Lb	9, 125	7, 175	10, 624	4, 563	3, 649	5, 249
Gums and resins, n. e. s.—							
Arabic	Lb	11, 001	6, 959	7, 124	1, 341	797	728
Tragacanth	Lb	[1] 1, 075	948	697	[1] 538	354	262
Other gums and resins, n. e. s.	Lb	9, 712	7, 611	9, 216	1, 168	760	904
Tar, pitch, and turpentine	Lb	(2)	(2)	(2)	[1] 130	136	195
Varnish, gums, and resins—							
Copal, damar, kauri	Lb	[14] 11, 590	(77)	(77)	[14] 1, 380	(77)	(77)
Damar	Lb	[1] 9, 383	8, 746	12, 104	[1] 1, 299	1, 100	1, 417
Kauri	Lb	[1] 7, 256	7, 713	5, 206	[1] 1, 595	1, 519	944
Shellac	Lb	32, 773	28, 512	21, 436	21, 034	15, 171	11, 434
Other varnish, gums, etc	Lb	[1] 31, 308	27, 995	31, 756	[1] 3, 264	3, 293	5, 323
Total gums, resins, and balsams					41, 278	30, 403	29, 465

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[3] Jan. 1–June 30.
[14] July 1–Sept. 21, 1922.
[73] Classified as "Hyacinth," "Lily, tulip and narcissus" and "Other bulbs, roots, etc."
[74] Classified as "Fruit stock," "Rose stocks and plants" and "Miscellaneous trees, plants, etc., n. e. s."
[75] Excludes "Miscellaneous trees, plants, etc., n. e. s.," free of duty.
[76] Classified as Camphor, "Refined and synthetic."
[77] Classified as "Damar," "Kauri" and "Other varnish, gums, etc."

TABLE 643.—*Agricultural products: Imports of the United States, 1923–1925*—Continued

Article imported	Unit	Year ended June 30					
		Quantity			Value		
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
FOREST PRODUCTS—continued		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Rubber and similar gums:							
Balata	Lb.	1,757	1,335	873	950	732	447
Guayule	Lb.	(78)	[6] 1,252	5,149	(78)	[6] 224	920
Gutta-percha	Lb.	1,903	2,723	2,742	336	422	433
Jelutong or pontianak	Lb.	8,713	11,077	14,395	702	1,016	1,380
Rubber, crude	Lb.	797,655	617,102	802,586	169,108	155,234	234,861
Total rubber and similar gums					171,126	157,628	238,041
Wood:							
Boards, planks, deals, etc.	M ft.	436	(79)	(79)	12,700	(79)	(79)
Hardwood	M ft.	[1] 52	87	67	[1] 2,324	4,856	3,827
Softwood	M ft.	[1] 1,470	1,699	1,656	[1] 43,539	51,702	48,245
Cabinet woods in the log—							
Cedar	M ft.	10	10	10	619	604	549
Mahogany	M ft.	43	47	70	3,312	4,350	5,649
Product of the Philippine Islands	M ft.	(80)	[6] 1	1	(80)	[6] 36	99
Other cabinet woods in the log	M ft.	(2)	(2)	9	743	664	764
Laths	M	1,563	1,535	1,811	9,529	9,438	10,287
Logs and timber, except cabinet woods.	M ft.	217	195	190	4,044	3,720	3,323
Philippine mahogany, sawed	M ft.	(1) (81)	[6] 10	20	(1) (81)	[6] 515	1,085
Pickets and palings	M	38	52	57	371	500	593
Poles: Telegraph, telephone, etc.	No.	[1] 291	608	647	[1] 1,026	2,774	2,899
Pulp wood—							
Peeled	Cord	773	945	963	7,555	9,339	9,705
Rossed	Cord	131	107	141	1,714	1,429	1,732
Rough	Cord	304	322	268	2,784	3,127	2,896
Railroad ties	No.	[1] 622	975	1,079	[1] 390	637	701
Sawed cabinet woods	M ft.	4	3	5	296	232	364
Shingles	M	2,695	2,417	2,551	10,952	8,763	9,712
Other wood, unmanufactured or partly manufactured.		(2)	(2)	(2)	2,664	1,636	1,352
Total wood					105,132	104,352	103,392
Miscellaneous forest products:							
Brier ivy or laurel root	Lb.	(82)	[6] 2,069	5,923	(82)	[6] 143	450
Chair canes or reeds	Lb.	(2)	4,449	4,674	718	658	603
Cork, bark or wood, unmanufactured.	Lb.	68,818	58,217	66,858	1,826	1,546	1,266
Osier or willow for basket making	Lb.	[1] 1,813	2,293	1,241	[1] 129	136	95
Rattan, unmanufactured	Lb.	(2)	13,926	13,296	2,076	1,136	1,085
Wood pulp—							
Chemical wood pulp—							
Sulphate—							
Bleached	Ton	26	7	32	1,638	496	1,837
Unbleached	Ton	269	245	312	16,234	15,347	17,869
Sulphite—							
Bleached	Ton	254	240	306	22,603	20,139	28,144
Unbleached	Ton	500	463	612	26,297	28,735	32,672
Mechanically ground	Ton	244	233	267	7,952	8,046	8,223
Total forest products					405,725	374,349	465,403
Total vegetable products including forest products					1,504,417	1,470,286	1,610,950
Total vegetable products excluding forest products.					1,098,722	1,095,947	1,145,487
Total agricultural imports including forest products.					2,310,970	2,091,054	2,282,936
Total agricultural imports excluding forest products.					1,905,245	1,716,715	1,817,473

[C]Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign ommerce of the United States, June, 1925.

[1] Beginning Sept. 22, 1922.
[2] Reported in value only.
[6] Jan. 1–June 30.
[78] Included with Rubber and similar gums, "Other crude, scrap, and reclaimed."
[79] Classified as Boards, planks, deals, etc., "Hardwood" and "Softwood."
[80] Included with All other articles, "Product of the Philippine Islands."
[81] Included with Wood, "Other unmanufactured or partly manufactured."

TABLE 644.—*Agricultural products: Shipments to the United States from Alaska, Hawaii, and Porto Rico, 1923–1925*

ALASKA

Article shipped	Unit	Quantity: 1923	Quantity: 1924	Quantity: 1925 preliminary	Value: 1923	Value: 1924	Value: 1925 preliminary
		Thousands	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Animals	No.	(1)	1	1	6	125	200
Wood pulp	Ton	[2] 3	3	0	[2] 61	52	0
Wood, timber, and lumber	M ft.	(1)	3	7	123	188	215
Total value of shipments					190	365	415

HAWAII

ANIMALS AND ANIMAL PRODUCTS							
Animals	No.	(3)	9	9	5	22	23
Beeswax	Lb.	35	25	33	7	5	9
Bones, hoofs, horns, etc.	Lb.	55	103	53	2	3	1
Hides and skins	Lb.	1,512	2,009	1,465	176	173	152
Honey	Lb.	1,638	1,647	1,618	79	94	98
Tallow	Lb.	428	467	473	30	30	34
Wool, raw	Lb.	333	121	173	118	43	74
Total animals and animal products					417	370	391
VEGETABLE PRODUCTS							
Breadstuffs:							
Rice	Lb.	799	165	391	41	11	24
Other breadstuffs	Lb.	146	121	154	10	9	12
Coffee	Lb.	2,281	2,049	3,712	406	431	987
Fruits:							
Canned—Pineapples	Lb.	257,865	297,966	340,353	22,323	28,247	30,219
Dried, green or ripe—							
Bananas	Bunch	218	218	236	222	211	237
Pineapples	Box	9	13	15	25	33	46
Prepared or preserved fruits	Lb.	29	49	30	8	8	8
Pineapple juice	Lb.	4	39	0	(3)	4	0
Nuts	Lb.	178	97	39	8	4	2
Sisal, unmanufactured	Ton	(3)	(3)	(3)	2	2	5
Sugar and molasses:							
Molasses	Gal.	5,862	10,914	19,827	232	365	848
Sugar (2,000 lbs.)	Ton	598	586	686	69,586	74,521	64,614
Tobacco, leaf, unmanufactured	Lb.	28	19	3	1	21	3
Vegetables	Lb.	600	524	521	33	30	33
Total vegetable products					92,896	103,897	97,038
FOREST PRODUCTS							
Lumber—Boards, planks, and deals	M ft.	(1)	(3)	(3)	(3)	(3)	1
Total value of shipments including forest products					93,313	104,267	97,430
Total value of shipments excluding forest products					93,313	104,267	97,429

PORTO RICO

ANIMAL PRODUCTS							
Beeswax	Lb.	29	29	31	5	5	8
Hides and skins—							
Cattle	Lb.	[2] 510	589	578	[2] 55	40	55
Other hides and skins	Lb.	673	72	76	108	30	23
Honey	Lb.	2,023	2,763	2,027	118	177	134
Tallow	Lb.	2	0	0	(3)	0	0
Total animal products					286	252	230

[1] Reported in value only. [2] Jan. 1–June 30. [3] Less than 500.

TABLE 644.—*Agricultural products: Shipments to the United States from Alaska, Hawaii, and Porto Rico, 1923–1925*—Continued

PORTO RICO—Continued

Article shipped	Unit	Quantity			Value		
		Year ended June 30					
		1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS		*Thousands*	*Thousands*	*Thousands*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Coffee:							
Prepared (roasted, powdered)	Lb.	[2, 3]	1	[3]	[2, 3]	[3]	[3]
Raw	Lb.	71	317	261	14	71	67
Cotton, unmanufactured (478 lbs.)	Bale	1	1	1	261	182	243
Fruits:							
Fresh—							
Grapefruit	Box	461	667	580	1,382	1,999	1,756
Oranges	Box	733	192	337	1,749	471	838
Pineapples	Crate	[1]	270	343	726	812	1,046
Other fresh fruits	Lb.	[1]	1,707	647	131	38	22
Prepared or preserved, canned or otherwise—							
Grapefruit	Lb.	[2] 4,060	3,862	3,841	[2] 481	306	370
Guavas	Lb.	[1]	5	5	[3]	1	1
Pineapples	Lb.	[1]	1,470	1,295	84	163	154
Other prepared or preserved fruits	Lb.	[1]	19	2	12	2	1
Total fruits					4,565	3,792	4,188
Nuts:							
Coconuts	M.	[3]	18	19	567	605	710
Copra	Lb.	[2] 45	218	31	[2] 2	7	1
Other nuts	Lb.	0	71	25	0	9	[3]
Seeds:							
Annato	Lb.	[2] 227	359	218	[2] 21	77	31
Other seeds	Lb.	[1]	80	71	17	15	10
Sugar and molasses:							
Molasses and sirups	Gal.	13,209	11,067	21,321	358	427	1,315
Sugar (2,000 lbs.)	Ton.	355	372	571	46,176	47,793	53,240
Tobacco, unmanufactured:							
Leaf	Lb.	[4] 11,465	[3]	[3]	[4] 6,144	[3]	[3]
Stemmed	Lb.	[2] 3,360	18,842	13,048	[2] 2,295	11,903	7,173
Unstemmed	Lb.	[2] 80	992	4,718	[2] 48	655	1,951
Stems, scraps, and trimmings	Lb.	4,669	3,500	4,955	972	612	714
Total tobacco, unmanufactured	Lb.	19,574	23,334	22,721	9,459	13,170	9,838
Vegetables	Lb.	[2] 582	962	1,065	[2] 30	31	40
Miscellaneous vegetable products:							
Alcohol, denatured	Gal.	[2] 104	321	525	[2] 32	124	234
Bay oil	Lb.	[2] 5	12	24	[2] 7	18	38
Roots and plants—							
Ginger root	Lb.	[2] 44	48	29	[2] 4	4	2
Other roots and plants	Lb.	[2] 2	9	10	[2, 3]	1	1
Straw, unmanufactured	Lb.	[2, 3]	1	1	[2, 3]	[3]	[3]
Total vegetable products					61,513	66,326	69,958
FOREST PRODUCTS							
Wood, unmanufactured	Ft.b.m.	[2] 37	62	11	[2] 2	3	2
Total value of shipments including forest products.					61,801	66,581	70,190
Total value of shipments excluding forest products.					61,799	66,578	70,188

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, June, 1925, Part II.

[1] Reported in value only.
[2] Jan. 1–June 30.
[3] Less than 500.
[4] July 1–Dec. 31.
[5] Classified as Tobacco leaf, "Stemmed" and "Unstemmed."

TABLE 645.—*Value of principal groups of farm and forest products exported from and imported into the United States, 1923–1925*

[Thousand dollars—i. e., 000 omitted]

Article	Year ended June 30					
	Exports (domestic merchandise)			Imports		
	1923	1924	1925 preliminary	1923	1924	1925 preliminary
ANIMALS AND ANIMAL PRODUCTS						
Animals, live	6,918	5,787	7,547	9,621	8,799	9,885
Dairy products	23,327	28,175	25,633	32,352	41,650	30,521
Eggs and egg products	9,400	8,734	7,337	4,356	7,030	6,846
Hides and skins, raw (except fur)	3,496	10,662	11,744	140,391	80,818	92,649
Meats and meat products	287,168	296,584	273,147	9,272	6,922	7,159
Silk, unmanufactured				413,567	358,792	361,944
Wool and mohair, unmanufactured	121	134	133	162,095	77,729	124,164
Animal products, miscellaneous	7,973	8,651	13,416	34,869	39,028	38,818
Total animals and animal products	338,403	358,727	338,957	806,523	620,768	671,986
VEGETABLE PRODUCTS						
Chocolate and cocoa	613	709	607	35,096	29,004	35,720
Coffee	5,690	5,957	8,285	181,639	206,519	267,153
Cotton, unmanufactured—						
Long staple				22,032	21,142	20,409
Sea-island	148	61	179			
Other	114,285	145,832	210,519			
Short staple	542,871	753,289	842,962	38,608	22,619	30,231
Linters	1,679	4,793	7,226			
Total cotton, unmanufactured	658,983	903,975	1,060,886	60,640	43,761	50,640
Fruits	71,253	84,519	85,315	44,650	42,059	48,383
Grains and grain products	452,786	246,862	536,427	28,187	35,562	25,198
Nuts	1,405	1,174	1,100	25,912	25,665	35,134
Oilseeds and oilseed products	36,505	27,790	47,736	139,196	120,372	131,772
Seeds, except oilseeds	4,057	2,886	3,602	8,812	14,174	10,290
Spices	201	199	236	13,440	14,585	18,698
Sugar, molasses, and sirups	43,124	18,346	23,616	368,687	380,347	293,885
Tea				26,308	30,020	28,564
Tobacco, unmanufactured	146,232	168,076	131,535	69,193	59,930	78,657
Vegetables	16,689	19,222	17,810	25,330	22,849	33,678
Vegetable products, miscellaneous	23,228	28,656	24,053	71,632	71,100	87,717
Total vegetable products	1,460,766	1,508,371	1,941,208	1,098,722	1,095,947	1,145,487
Total farm products	1,799,169	1,867,098	2,280,165	1,905,245	1,716,715	1,817,473
FOREST PRODUCTS						
Dyeing and tanning materials	2,275	1,972	1,937	9,316	7,575	7,361
Gums, resins, and balsams	22,909	23,179	28,783	41,278	30,403	29,465
Rubber and similar gums				171,126	157,628	238,041
Wood	99,970	132,121	119,857	105,132	104,352	103,392
Forest products, miscellaneous	4,827	5,527	6,063	78,873	74,381	87,204
Total forest products	129,981	162,799	156,640	405,725	374,339	465,463
Total farm and forest products	1,929,150	2,029,897	2,436,805	2,310,970	2,091,054	2,282,936
	Shipments from the United States to Porto Rico			Shipments from Porto Rico to the United States		
ANIMALS AND ANIMAL PRODUCTS						
Animals, live	$99	$111	$187			
Dairy products	1,378	1,619	1,425			
Eggs	20	30	30			
Hides and skins, raw (except fur)				$163	$70	$88
Meats and meat products	5,703	5,897	6,630	[1]		
Animal products, miscellaneous	[2] 6	26	24	123	182	142
Total animals and animal products	7,206	7,683	8,296	286	252	230

[1] Less than 500.

[2] Jan. 1–June 30.

TABLE 645.—*Value of principal groups of farm and forest products exported from and imported into the United States, 1923–1925*—Continued

[Thousand dollars—i. e., 000 omitted]

Article	Year ended June 30					
	Shipments from the United States to Porto Rico			Shipments from Porto Rico to the United States		
	1923	1924	1925 preliminary	1923	1924	1925 preliminary
VEGETABLE PRODUCTS						
Chocolate and cocoa	164	193	175			
Coffee	2	1	1	14	71	67
Cotton, unmanufactured				261	182	263
Fruits	350	455	414	4,565	3,792	4,188
Grains and grain products	10,641	12,782	13,683			
Nuts	19	28	24	569	621	711
Oilseeds and oilseed products	273	372	360			
Seeds except oilseeds	[2] 8	8	6	38	92	41
Sugar, molasses, and sirups	540	620	347	46,534	48,220	54,555
Tea	4	2	3			
Tobacco, unmanufactured	770	706	645	9,479	13,170	9,838
Vegetables	2,093	2,627	3,157	[2] 30	31	40
Vegetable products, miscellaneous	221	452	544	43	147	275
Total vegetable products	15,055	18,246	19,331	61,513	66,326	69,958
Total farm products	22,261	25,920	27,627	61,799	66,578	70,188
FOREST PRODUCTS						
Rosin, tar, turpentine, and pitch	18	19	18			
Wood	1,801	2,871	2,065	[1] 2	3	2
Total forest products	1,819	2,890	2,083	[1] 2	3	2
Total farm and forest products	24,080	28,810	29,710	61,801	66,581	70,190
	Shipments from the United States to Hawaii			Shipments from Hawaii to the United States		
ANIMALS AND ANIMAL PRODUCTS						
Animals, live	383	308	249	5	22	23
Dairy products	1,276	1,330	1,310			
Eggs	467	488	547			
Hides and skins, raw (except fur)				176	173	152
Meats and meat products	1,557	1,564	1,760	30	30	34
Wool, raw				118	43	74
Animal products, miscellaneous	[2] 4	42	18	88	102	108
Total animals and animal products	3,687	3,741	3,884	417	370	391
VEGETABLE PRODUCTS						
Chocolate and cocoa	134	105	134			
Coffee	23	66	47	406	431	987
Fruits	969	947	1,109	22,577	28,503	20,510
Grains and grain products	5,389	6,171	7,022	51	20	36
Nuts	98	95	105	8	4	2
Oilseeds and oilseed products	242	314	436			
Seeds, except oilseeds	[2] 21	31	20			
Sugar, molasses, etc	825	619	256	69,818	74,886	65,462
Tea	20	22	27			
Tobacco, unmanufactured	[2] 3	1	(1)	1	21	3
Vegetables	990	1,130	1,206	33	30	33
Vegetable products, miscellaneous	227	316	326	2	2	5
Total vegetable products	8,945	9,817	10,692	92,896	103,897	97,038
Total farm products	12,632	13,558	14,576	93,313	104,267	97,429

[1] Less than 500.

[2] Jan. 1–June 30.

TABLE 645.—*Value of principal groups of farm and forest products exported from and imported into the United States, 1923–1925*—Continued

[Thousand dollars—i. e., 000 omitted]

Article	Year ended June 30					
	Shipments from the United States to Hawaii			Shipments from Hawaii to the United States		
	1923	1924	1925 preliminary	1923	1924	1925 preliminary
FOREST PRODUCTS						
Rosin, tar, turpentine, and pitch	51	57	41	[1]		
Wood	3,293	3,924	3,337	[1]	[1]	1
Total forest products	3,344	3,981	3,378	[1]	[1]	1
Total farm and forest products	15,976	17,539	17,954	93,313	104,267	97,430
	Shipments from the United States to Alaska			Shipments from Alaska to the United States		
ANIMALS AND ANIMAL PRODUCTS						
Animals, live	70	115	77	6	125	200
Dairy products	1,223	1,259	1,244			
Eggs	519	546	624			
Meats and meat products	1,736	1,779	1,927			
Animal products, miscellaneous	[2] 5	13	14			
Total animals and animal products	3,553	3,712	3,886	6	125	200
VEGETABLE PRODUCTS						
Chocolate and cocoa	24	18	22			
Coffee	271	302	375			
Fruits	711	847	905			
Grains and grain products	929	860	1,049			
Nuts	37	35	27			
Oilseeds and oilseed products	58	66	96			
Seeds, except oilseeds	[2] 9	7	11			
Sugar	555	599	533			
Tea	85	84	95			
Tobacco, unmanufactured	[2] 3	2	1			
Vegetables	699	797	927			
Vegetable products, miscellaneous	168	208	248			
Total vegetable products	3,549	3,825	4,289			
Total farm products	7,102	7,537	8,175	6	125	200
FOREST PRODUCTS						
Rosin, tar, turpentine, and pitch	29	51	52			
Wood	1,166	1,428	1,547	123	188	215
Forest products, miscellaneous				[2] 61	52	0
Total forest products	1,195	1,479	1,599	184	240	215
Total farm and forest products	8,297	9,016	9,774	190	365	415

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, June, 1925.

[1] Less than 500.

[2] Jan. 1–June 30.

TABLE 646.—*Exports of selected domestic agricultural products, 1909–1925*

Year ended June 30	Cattle	Cheese	Packing-house products							
			Beef, cured—salted or pickled	Beef, fresh	Beef oils—oleo oil	Beef tallow	Beef and its products—total, so far as ascertainable [1]	Pork, cured—bacon	Pork, cured—hams and shoulders	Pork, cured—salted or pickled
	Thousands	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
1909	208	6,823	44,494	122,953	179,985	53,333	418,844	244,579	212,170	52,355
1910	139	2,847	36,554	75,730	126,092	29,380	286,296	152,163	146,885	40,032
1911	150	10,367	40,284	42,511	138,697	29,813	265,924	156,675	157,709	45,729
1912	106	6,338	38,088	15,264	126,467	39,451	233,925	208,574	204,044	56,321
1913	25	2,599	25,857	7,362	92,850	30,586	170,208	200,994	159,545	53,749
1914	18	2,428	23,266	6,394	97,017	15,813	151,212	193,964	165,882	45,543
1915	5	55,363	31,875	170,441	80,482	20,240	394,981	346,718	203,701	45,656
1916	21	44,394	38,115	231,214	102,646	16,289	457,556	579,809	282,209	63,461
1917	13	66,050	58,054	197,177	67,110	15,209	423,674	667,152	266,657	46,993
1918	18	44,303	54,468	370,033	56,603	5,015	600,132	815,294	419,572	33,222
1919	42	18,792	45,066	332,205	59,292	16,172	591,302	1,238,247	667,240	31,504
1920	83	19,378	32,384	153,561	74,529	32,937	368,002	803,667	275,456	41,643
1921	146	10,826	23,313	21,084	106,415	16,844	203,815	489,298	172,012	33,286
1922	155	7,471	26,774	3,993	117,174	27,658	222,462	350,549	271,642	33,510
1923	61	8,446	24,185	4,017	104,956	25,665	194,912	408,334	319,269	40,934
1924	33	3,938	21,851	2,817	92,965	37,372	185,372	423,500	381,564	37,469
1925 [2]	106	9,432	22,407	3,144	105,145	28,776	190,211	236,263	292,214	26,726

Year ended June 30	Packing-house products			Apples, fresh	Corn and corn meal (in terms of grain)	Linters	Cotton	Cotton, including linters	Glucose and grape sugar	Corn oil cake and oil-cake meal	Cottonseed oil cake and oil-cake meal
	Pork—lard	Pork and its products—total, as far as ascertainable [3]	Lard compounds								
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 bales*	*1,000 bales*	*1,000 bales*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
1909	528,723	1,053,142	75,183	896	37,665	(5)	------	8,896	112,225	53,234	1,233,750
1910	362,928	707,110	74,557	922	38,128	(5)	------	6,413	149,820	49,109	640,089
1911	476,108	879,455	73,754	1,721	65,615	(5)	------	8,068	181,963	83,385	804,597
1912	532,256	1,071,952	62,523	1,456	41,797	(5)	------	11,070	171,156	72,490	1,293,690
1913	519,025	984,697	67,457	2,150	50,780	(5)	------	9,125	200,149	76,263	1,128,092
1914	481,458	921,913	58,304	1,507	10,726	(5)	------	9,522	199,531	59,031	799,974
1915	475,532	1,106,180	69,981	2,352	50,668	226	8,581	8,807	158,463	45,026	1,479,065
1916	427,011	1,462,697	52,843	1,466	39,897	251	5,917	6,168	186,406	18,996	1,057,222
1917	444,770	1,501,948	56,359	1,740	66,753	474	5,702	6,176	214,973	15,758	1,150,160
1918	392,506	1,692,124	31,278	635	49,073	186	4,455	4,641	97,858	458	44,681
1919	724,771	2,704,694	128,157	1,576	23,019	84	5,442	5,526	136,230	562	311,624
1920	587,225	1,762,611	44,196	1,051	16,729	52	7,035	7,087	245,204	511	449,573
1921	746,157	1,522,162	42,156	2,665	70,906	53	5,570	5,623	141,954	1,795	454,701
1922	812,379	1,516,320	30,328	1,094	179,490	126	6,592	6,718	273,982	3,596	532,721
1923	952,642	1,794,880	11,140	1,756	96,596	48	5,205	5,253	162,693	686	454,350
1924	1,014,898	1,934,189	6,907	4,098	23,135	115	5,784	5,899	148,051	------	250,366
1925 [2]	792,735	1,400,149	8,922	3,221	9,791	200	8,239	8,439	139,577	------	885,375

[1] Includes canned, cured, and fresh beef, oleo oil, oleo stock, oleomargarine, tallow, and stearin from animal fats.
[2] Preliminary.
[3] Includes canned, fresh, salted, or pickled pork, lard, neutral lard, lard oil, bacon, and hams.
[4] Bales of 500 pounds gross.
[5] Included with cotton.

TABLE 646.—*Exports of selected domestic agricultural products, 1909–1925*—Con.

Year ended June 30	Prunes	Tobacco—unmanufactured	Hops	Oils, vegetable—cottonseed oil	Rice and rice bran, meal, and polish	Sugar, raw and refined	Wheat	Wheat flour	Wheat and wheat flour (in terms of grain)
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 gallons*	*1,000 pounds*	*1,000 pounds*	*1,000 bushels*	*1,000 barrels*	*1,000 bushels*
1909	22,602	287,901	10,447	51,087	20,511	79,946	66,923	10,521	114,268
1910	89,015	357,196	10,589	29,861	26,779	125,507	46,680	9,041	87,364
1911	51,031	355,327	13,105	30,069	30,063	54,947	23,729	10,129	69,312
1912	74,328	379,845	12,191	53,263	39,447	79,594	30,160	11,006	79,689
1913	117,951	418,797	17,591	42,031	38,908	43,995	91,603	11,395	142,880
1914	69,814	449,750	24,263	25,738	22,414	50,896	92,394	11,821	145,590
1915	43,479	348,346	16,210	42,449	77,480	549,007	259,643	16,183	332,465
1916	57,423	443,293	22,410	35,535	121,967	1,630,151	173,274	15,521	243,117
1917	59,645	411,599	4,825	21,188	181,372	1,248,908	149,831	11,943	203,574
1918	32,927	289,171	3,495	13,437	196,363	576,483	34,119	21,880	132,579
1919	59,072	629,288	7,467	23,828	193,128	1,115,865	178,583	24,182	287,402
1920	114,066	648,038	30,780	21,253	483,385	1,444,031	122,431	21,652	219,865
1921	57,461	506,526	22,206	37,769	440,855	582,698	293,268	16,180	366,077
1922	109,398	463,389	19,522	12,215	741,509	2,002,039	208,321	15,797	279,407
1923	79,229	454,364	13,497	8,572	370,670	749,855	154,951	14,883	221,923
1924	136,448	597,630	20,461	5,256	227,757	270,942	78,793	17,253	156,430
1925 [2]	171,771	430,702	16,122	7,101	112,037	501,124	195,490	13,896	258,023

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1909–1918, and Monthly Summary of Foreign Commerce of the United States, June issues, 1920–1925.

Cottonseed oil, 1910, pounds reduced to gallons at the rate of 7.5 pounds per gallon. It is assumed that 1 barrel of corn meal is the product of 4 bushels of corn, and 1 barrel of wheat flour the product of 4½ bushels of wheat.

[2] Preliminary.

TABLE 647.—*Imports of selected agricultural products, 1909–1925*

Year ended June 30	Cheese	Silk [1]	Wool	Almonds		Argols or wine lees	Cocoa and chocolate, total	Coffee	Corn	Oats, including oatmeal	Wheat
				Not shelled	Shelled						
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1909	35,548	25,188	266,409	11,029		32,116	132,661	1,049,869	258	6,692	41
1910	40,818	23,457	263,928	18,556		28,183	111,071	871,470	118	[2] 1,035	164
1911	45,569	26,666	137,648	15,523		29,175	140,971	875,367	52	[2] 107	509
1912	46,542	26,585	193,401	17,231		23,661	148,786	885,201	53	[2] 2,622	2,699
1913	49,388	32,102	195,293	2,592	13,079	29,479	143,510	863,131	903	[2] 724	798
1914	63,784	34,546	247,649	5,731	13,308	29,793	179,364	1,001,528	12,367	[2] 22,274	1,979
1915	50,139	31,053	308,083	4,903	12,209	28,625	194,734	1,118,691	9,898	[2] 631	426
1916	30,088	41,925	534,828	2,929	13,668	34,721	245,579	1,201,104	5,208	[2] 665	5,703
1917	14,482	40,351	372,372	5,011	18,413	23,926	340,483	1,319,871	2,267	[2] 762	24,139
1918	9,839	43,681	379,130	4,279	19,561	30,267	399,312	1,143,891	3,196	[2] 2,591	28,177
1919	2,442	50,069	422,415	6,734	23,595	32,228	313,195	1,046,029	3,311	551	11,121
1920	17,914	58,410	427,578	7,356	26,326	23,638	421,880	1,414,228	10,229	6,044	4,780
1921	16,585	34,778	318,236	6,622	13,875	26,486	328,447	1,348,926	5,743	3,796	51,004
1922	34,271	57,437	255,087	4,723	26,619	18,749	318,969	1,238,012	125	1,733	14,466
1923	54,555	63,188	525,473	4,576	22,972	21,950	383,929	1,305,188	138	293	18,013
1924	66,597	56,595	239,122	2,654	23,411	17,650	386,227	1,429,617	228	4,244	27,284
1925 [3]	61,489	70,270	284,706	3,802	21,351	20,664	386,689	1,279,570	4,617	3,041	6,169

[1] Includes "Silk, raw or as reeled from the cocoon," "Silk waste, and silk cocoons."
[2] Does not include oatmeal.
[3] Preliminary.

TABLE 647.—*Imports of selected agricultural products, 1909–1925*—Continued

Year ended June 30	Wheat flour	Wheat, including wheat flour	Flaxseed	Unmanufactured tobacco	Flax	Hemp	Hops	Jute and jute butts	Licorice root
	1,000 barrels	*1,000 bushels*	*1,000 bushels*	*1,000 pounds*	*1,000 long tons*	*1,000 long tons*	*1,000 pounds*	*1,000 long tons*	*1,000 pounds*
1909	92	457	594	43,123	10	5	7,387	157	97,743
1910	145	816	5,002	46,853	13	6	3,201	68	82,297
1911	142	1,147	10,499	48,293	8	5	8,558	65	125,135
1912	159	3,414	6,842	54,740	11	5	2,991	101	74,582
1913	108	1,282	5,294	67,977	12	8	8,494	125	105,116
1914	90	2,384	8,653	61,175	10	9	5,382	106	115,636
1915	64	715	10,666	45,809	5	5	11,651	83	65,959
1916	330	7,188	14,679	43,078	7	7	676	108	41,003
1917	175	24,925	12,394	49,105	8	10	237	113	52,400
1918	675	31,215	13,367	86,991	6	7	121	78	26,983
1919	37	11,289	8,427	83,951	9	2	———	53	42,684
1920	159	5,496	23,392	94,005	5	4	2,696	77	48,045
1921	1,421	57,398	16,170	58,923	5	10	4,808	90	59,693
1922	619	17,251	13,632	65,225	5	3	893	62	62,388
1923	429	19,045	25,906	75,786	8	6	1,295	85	35,339
1924	169	28,045	19,577	54,497	5	1	761	84	87,684
1925 [3]	7	6,199	13,419	76,870	4	3	439	56	51,354

Year ended June 30	Manila	Molasses	Olive oil, for table use	Opium, crude	Potatoes	Rice and rice flour, rice meal, and broken rice	Sisal grass	Sugar, raw and refined	Tea
	1,000 long tons	*1,000 gallons*	*1,000 gallons*	*1,000 pounds*	*1,000 bushels*	*1,000 pounds*	*1,000 long tons*	*1,000 pounds*	*1,000 pounds*
1909	62	22,093	4,129	517	8,384	222,900	91	4,189,421	114,917
1910	93	31,292	3,702	449	353	225,401	100	4,094,546	85,626
1911	74	23,838	4,406	630	219	208,775	118	3,937,978	102,534
1912	69	28,828	4,837	400	13,735	190,063	114	4,104,618	101,407
1913	74	33,927	5,221	508	327	222,104	154	4,740,041	94,813
1914	50	51,410	6,218	455	3,646	300,195	216	5,056,822	91,131
1915	51	70,840	6,711	484	271	277,191	186	5,420,962	96,988
1916	79	85,717	7,224	147	210	264,324	229	5,633,162	109,866
1917	77	110,238	7,533	87	3,079	216,049	143	5,332,746	103,364
1918	86	130,731	2,538	158	1,180	456,059	150	4,903,327	151,315
1919	68	130,075	4,283	346	3,534	368,726	153	5,836,048	109,172
1920	77	154,670	6,813	629	6,941	179,930	176	7,596,032	97,326
1921	52	113,414	4,443	77	3,423	96,865	159	7,012,679	72,198
1922	44	87,908	7,941	144	2,110	73,620	72	8,464,329	86,142
1923	98	161,135	9,950	109	572	69,536	98	8,733,483	96,669
1924	88	174,037	10,784	79	564	38,216	97	7,530,000	105,443
1925 [3]	73	215,778	10,707	91	478	57,677	146	8,678,131	92,779

Year ended June 30	Beeswax	Onions	Plums and prunes	Raisins	Currants	Dates	Figs
	1,000 pounds	*1,000 bushels*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
1909	765	575	296	5,794	32,482	21,869	15,236
1910	972	1,024	———	5,043	33,326	22,694	17,362
1911	903	1,515	———	2,479	33,440	29,505	23,460
1912	1,077	1,436	———	3,256	33,151	25,208	18,765
1913	829	789	———	2,580	30,844	34,305	16,838
1914	1,412	1,115	———	4,555	32,033	34,074	19,285
1915	1,565	829	———	2,809	30,351	24,949	20,780
1916	2,146	816	———	1,024	25,373	31,075	7,153
1917	2,686	1,758	———	1,850	10,477	25,485	16,480
1918	1,827	1,313	———	844	5,168	5,573	10,473
1919	2,127	152	———	120	842	20,192	9,230
1920	3,924	1,884	———	13,897	38,225	36,893	28,552
1921	2,215	689	———	43,269	50,178	35,267	25,424
1922	3,101	2,488	———	18,363	49,467	46,742	43,139
1923	4,095	1,781	———	12,335	18,924	52,037	36,585
1924	3,271	1,406	———	5,745	17,155	44,143	31,668
1925 [3]	2,956	2,075	———	10,004	15,064	63,444	45,259

[3] Preliminary.

TABLE 647.—*Imports of selected agricultural products, 1909–1925*—Continued

Year ended June 30	Hides and skins, other than furs			Macaroni, vermicelli, and all similar preparations	Lemons	Oranges and limes	Walnuts	
	Cattle	Goat	Other than cattle and goat				Not shelled	Shelled
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
1909	192,252	104,048	148,254	85,114	135,184	8,436	26,158	
1910	318,004	115,845	174,771	113,773	160,215	4,676	33,641	
1911	150,128	86,914	137,850	114,779	134,969	7,672	33,619	
1912	251,013	95,341	191,415	108,231	145,639	7,629	37,214	
1913	268,042	96,250	207,904	106,501	151,416	12,253	16,291	10,371
1914	279,963	84,759	196,348	126,129			28,268	8,928
1915	344,341	66,547	137,439	86,542			22,338	11,107
1916	434,178	100,657	208,835	21,790			22,630	14,229
1917	386,600	105,640	207,967	3,473			25,667	13,059
1918	267,500	66,933	98,084	670			12,134	11,156
1919	253,877	89,005	105,260	592	[4]	[4]	3,241	7,696
1920	439,461	126,996	232,113	800	[4]	[4]	27,278	17,505
1921	198,573	41,728	111,891	1,297	[4]	[4]	12,525	10,641
1922	204,936	83,535	104,433	1,992	101,592	[4]	43,206	17,027
1923	405,383	89,401	163,401	3,254	122,818	[4]	19,913	17,606
1924	176,476	65,881	110,113	3,870	75,297	5,720	18,245	18,765
1925 [1]	199,312	65,956	109,725	6,191	93,530	4,929	30,912	23,640

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1909–1918, and Monthly Summary of Foreign Commerce of the United States, June issues, 1920–1925.

Where figures are lacking, either there were no imports or they were not separately classified for publication.

[1] Preliminary.
[4] Reported in value only.

TABLE 648.—*Exports and imports of selected forest products, 1909–1925*

Year ended June 30	Domestic exports					Imports					
	Lumber		Rosin	Spirits of turpentine	Timber, hewn and sawed	Camphor, crude	Rubber and similar gums, crude, total	Lumber		Shellac	Wood pulp
	Boards, deals, and planks	Staves						Boards, deals, planks, and other sawed	Shingles		
	1,000 M feet	*Thousands*	*1,000 barrels*	*1,000 gallons*	*1,000 M feet*	*1,000 pounds*	*1,000 pounds*	*1,000 M feet*	*1,000 M*	*1,000 pounds*	*1,000 long tons*
1909	1,358	52,583	2,170	17,502	419	1,990	114,599	846	1,058	19,185	274
1910	1,084	49,784	2,144	15,588	491	3,007	154,621	1,054	763	29,402	378
1911	2,032	65,726	2,190	14,818	532	3,726	145,744	872	643	15,495	492
1912	2,307	64,163	2,474	19,599	438	2,155	175,966	905	515	18,746	478
1913	2,550	89,006	2,806	21,094	512	3,709	170,747	1,091	560	21,912	502
1914	2,405	77,151	2,418	18,901	441	3,477	161,777	929	895	16,720	508
1915	1,129	39,297	1,372	9,404	174	3,729	196,122	939	1,487	24,153	588
1916	1,177	57,538	1,571	9,310	201	4,574	304,183	1,218	1,769	25,818	507
1917	1,042	61,469	1,639	8,842	184	6,885	364,914	1,175	1,924	32,540	699
1918	1,068	63,207	1,071	5,095	106	3,638	414,984	1,283	1,378	22,913	504
1919	1,073	62,753	882	8,065	92	2,623	422,215	977	1,757	14,269	475
1920	1,518	80,791	1,322	7,461	234	4,026	660,610	1,492	2,152	34,151	727
1921	1,269	65,710	877	9,742	123	2,093	371,300	920	1,331	23,872	624
1922	1,543	35,162	786	10,786	268	1,592	573,512	1,124	2,190	30,768	902
1923	1,549	57,466	1,040	9,012	383	3,498	810,028	1,958	2,695	32,773	1,293
1924	1,867	60,868	1,205	11,194	815	1,955	633,489	1,786	2,417	28,512	1,188
1925 [1]	1,929	79,877	1,412	12,305	586	1,904	825,745	1,732	2,551	21,436	1,529

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1909–1918, and Monthly Summary of Foreign Commerce of the United States, June issues, 1920–1925.

[1] Preliminary.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS						
Cattle:	*Number*	*Number*	*Number*	*Per cent*	*Per cent*	*Per cent*
Mexico	49,223	26,006	99,375	80.1	79.4	94.1
United Kingdom	6,417	3	994	10.4	(1)	.9
Cuba	2,529	3,046	3,214	4.1	9.3	3.0
Canada	1,601	962	608	2.6	2.9	.6
Belgium	1,443	2,398	844	2.3	7.3	.8
Germany	0	1	0	0	(1)	0
Other countries	273	345	576	0.5	1.1	.6
Total	61,486	32,761	105,611	100.0	100.0	100.0
Horses:						
Mexico	3,802	7,579	5,375	44.0	64.8	49.4
Canada	2,496	1,754	1,727	28.9	15.0	15.9
Spain	1,214	1,011	562	14.0	8.6	5.2
Cuba	491	604	1,730	5.7	5.2	15.9
United Kingdom	158	110	601	1.8	.9	5.5
Germany	10	41	147	.1	.4	1.3
Belgium	4	40	129	.1	.3	1.2
Other countries	466	554	608	5.4	4.8	5.6
Total	8,641	11,693	10,879	100.0	100.0	100.0
Butter:	*Pounds*	*Pounds*	*Pounds*			
United Kingdom	3,408,128	51	2,354,289	36.2	(1)	28.1
Cuba	767,108	804,905	870,306	8.2	14.8	10.4
Haiti	615,399	512,473	565,121	6.5	9.4	6.8
Other West Indies [2]	1,338,460	732,540	805,261	14.2	13.5	9.6
Mexico	904,158	843,245	1,108,750	9.6	15.5	13.0
Panama	657,793	739,120	805,650	7.0	13.6	9.6
Peru	234,975	518,243	455,316	2.5	9.6	5.4
Other South America	359,809	209,876	325,206	3.8	3.9	3.9
Philippine Islands	354,889	249,749	181,479	3.8	4.6	2.2
Bermuda	94,885	59,180	54,705	1.0	1.1	.7
Canada	76,314	42,085	7,218	.8	.8	.1
Japan	51,201	149,305	26,720	.5	2.8	.5
Germany	2,228	64,685	215,092	(1)	1.2	2.5
Other countries	544,490	499,862	598,669	5.9	9.2	7.2
Total	9,409,837	5,425,299	8,383,782	100.0	100.0	100.0
Cheese:						
United Kingdom	3,296,276	65,046	55,920	39.0	1.7	.6
Cuba	1,496,424	1,122,695	1,063,320	17.7	28.5	11.3
Other West Indies [2]	669,421	510,140	565,971	7.9	12.9	6.0
Mexico	1,037,719	824,468	983,086	12.3	21.0	10.4
Canada	660,943	264,967	1,334,054	7.8	6.7	14.1
Panama	344,933	339,431	407,526	4.1	8.6	4.3
Central America	276,221	280,679	276,383	3.3	7.1	2.9
China	190,980	114,722	143,985	2.3	2.9	1.5
Philippine Islands	104,799	97,980	109,321	1.2	2.5	1.2
Peru	51,500	107,874	149,704	.6	2.7	1.6
Germany	49,439	34,719	3,600,992	.6	.9	38.2
Sweden	8,054	3,489	0	.1	.1	0
Other countries	259,612	172,101	741,736	3.1	4.4	7.9
Total	8,446,321	3,938,311	9,432,000	100.0	100.0	100.0
Milk:						
Condensed—						
United Kingdom	1,476,878	509,534	224,750	3.1	.8	.5
Germany	1,021,240	1,814,976	310,055	2.1	2.7	.6
Other Europe	4,090,067	1,689,784	438,652	8.5	2.5	.9
Total Europe	6,588,185	4,014,294	973,457	13.7	6.0	2.0
Cuba	17,131,382	32,266,000	21,225,997	35.7	48.1	43.1
Japan	6,083,777	7,104,442	6,619,121	12.7	10.6	13.4
Chosen	506,188	435,548	394,066	1.1	.6	.8
China	2,701,412	2,769,066	2,667,615	5.6	4.1	5.4
Hongkong	2,421,396	2,469,790	2,408,724	5.0	3.7	4.9
British South Africa	2,695,488	1,451,795	1,342,383	5.6	2.2	2.7
Philippine Islands	2,030,954	8,045,581	5,820,585	4.2	12.0	11.8
Straits Settlements	1,275,215	302,824	51,000	2.7	.4	.1
Mexico	1,035,976	1,399,552	1,403,935	2.2	2.4	2.8
Panama	758,452	1,277,367	1,407,759	1.6	1.9	2.9
Costa Rica	278,605	337,385	376,201	.6	.5	.8
Brazil	274,165	238,542	449,222	.6	.3	.9
Bolivia	94,108	375,394	302,345	.2	.6	.6
Other countries	4,090,966	4,424,138	3,854,718	8.5	6.6	7.8
Total	47,966,269	67,111,718	49,297,128	100.0	100.0	100.0

[1] Less than 0.05 per cent.

[2] Excludes Bermuda.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS—con.						
Milk—Continued.						
Evaporated—	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
United Kingdom	24,483,752	36,527,662	28,662,026	22.5	24.9	23.1
Germany	15,422,430	49,403,004	43,355,455	14.1	33.7	34.9
Russia in Europe	15,028,237	0	31,038	13.8	0	(1)
Latvia	9,821,520	0	0	9.0	0	0
France	6,847,621	7,888,594	3,765,448	6.3	5.4	3.0
Ukraine	4,500,242	9,221	0	4.1	(1)	0
Belgium	2,249,432	6,965,583	1,679,616	2.1	4.8	1.3
Netherlands	1,003,604	7,460,785	7,328,170	.9	5.1	5.9
Other Europe	2,187,438	1,152,229	1,079,180	2.0	.8	.9
Total Europe	81,544,276	109,407,078	85,900,933	74.8	74.7	69.1
Philippine Islands	5,123,214	8,161,713	10,066,562	4.7	5.6	8.1
Panama	3,401,574	3,660,092	3,742,465	3.1	2.5	3.0
Peru	2,990,064	4,164,858	5,012,879	2.7	2.8	4.0
Mexico	2,710,430	2,626,935	2,589,158	2.5	1.8	2.1
Cuba	2,678,733	3,643,224	3,120,571	2.5	2.5	2.5
China	1,562,948	907,812	2,607,684	1.4	.6	2.1
Japan	788,644	4,213,370	1,732,435	.7	2.9	1.4
Other countries	8,272,180	9,715,852	9,477,375	7.6	6.6	7.7
Total	109,072,063	146,500,934	124,250,062	100.0	100.0	100.0
Powdered—						
Germany	993,547	243,105	1,036,003	34.1	9.0	18.4
United Kingdom	485,164	304,018	701,733	16.6	11.2	12.5
France	213,409	302,839	275,525	7.3	11.2	4.9
Other Europe	89,687	136,142	2,045,699	3.1	5.0	36.4
Total Europe	1,781,807	986,104	4,058,960	61.1	36.4	72.2
Japan	558,622	913,192	409,702	19.1	33.8	7.3
Cuba	113,737	150,699	237,451	3.9	5.6	4.2
Mexico	84,808	76,494	139,856	2.9	2.8	2.5
Canada	67,902	110,273	129,878	2.3	4.1	2.3
Panama	53,544	101,415	127,805	1.8	3.7	2.3
Peru	42,221	58,663	86,411	1.4	2.2	1.5
China	34,164	57,458	86,547	1.2	2.1	1.5
Chile	28,478	39,398	38,551	1.0	1.5	.7
Other countries	153,092	212,228	307,654	5.3	7.8	5.5
Total	2,918,375	2,705,924	5,622,815	100.0	100.0	100.0
Eggs, in the shell:	*Dozen*	*Dozen*	*Dozen*			
United Kingdom	4,739,080	3,376,762	777,020	13.8	10.3	3.1
Other Europe	31,902	14,434	56	.1	(1)	(1)
Total Europe	4,770,982	3,391,196	777,076	13.9	10.3	3.1
Cuba	11,542,575	13,135,196	11,957,622	33.7	40.0	47.6
Canada	8,577,206	6,479,665	4,153,040	25.0	19.7	16.6
Mexico	7,338,663	6,543,802	3,247,184	21.4	20.0	12.9
Panama	934,647	950,367	953,421	2.7	2.9	3.8
Argentina	740,100	1,881,710	3,567,630	2.2	5.7	14.2
Other countries	379,342	449,592	450,648	1.1	1.4	1.8
Total	34,283,515	32,831,528	25,106,621	100.0	100.0	100.0
Beef, canned:	*Pounds*	*Pounds*	*Pounds*			
United Kingdom	722,441	303,680	691,917	31.2	19.7	37.7
Cuba	89,166	35,230	163,401	3.9	2.3	8.9
Other West Indies [2]	324,537	100,080	125,341	14.0	6.5	6.8
Philippine Islands	291,241	113,388	213,361	12.6	7.3	11.6
Dutch East Indies	116,252	9,459	425	5.1	.6	(1)
Bermuda	101,698	17,945	8,283	4.4	1.1	.5
Canada	93,900	31,735	141,875	4.1	2.1	7.7
Mexico	81,189	77,627	95,252	3.5	5.0	5.2
Newfoundland and Labrador	64,663	52,264	66,923	2.8	3.4	3.6
Japan	58,885	45,887	930	2.6	3.0	.1
Germany	52,192	387,733	29,064	2.3	25.1	1.6
Honduras	44,202	57,852	42,243	1.9	3.7	2.3
British Guiana	38,021	13,650	6,054	1.6	.9	.3
Panama	28,454	37,788	33,987	1.2	2.4	1.9
Venezuela	20,466	21,907	24,600	.8	1.4	1.4
British South Africa	12,722	21,060	18,141	.5	1.4	1.0
French Guiana	10,944	6,973	5,831	.5	.5	.3
Netherlands	0	72,444	0	0	4.7	0
Other countries	161,507	138,095	167,195	7.0	8.9	9.1
Total	2,312,480	1,544,707	1,834,823	100.0	100.0	100.0

[1] Less than 0.05 per cent.

[2] Excludes Bermuda.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS—CON.						
Beef, pickled and other cured:	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Newfoundland and Labrador	6,627,439	7,420,262	7,841,130	27.4	34.0	35.0
Cuba	175,718	123,317	135,890	.7	.6	.6
Other West Indies [2]	5,070,684	4,704,803	4,875,329	20.9	21.5	21.8
United Kingdom	3,084,799	1,667,457	1,944,258	12.8	7.6	8.7
Norway	1,785,320	1,105,581	1,264,410	7.4	5.1	5.6
Canada	1,460,891	1,066,340	729,404	6.0	4.9	3.2
Dutch Guiana	1,137,500	855,750	1,108,906	4.7	3.9	5.0
French Guiana	481,000	338,675	342,925	2.0	1.5	1.5
British West Africa	817,731	1,277,336	868,650	3.4	5.8	3.9
Germany	462,936	447,215	366,469	1.9	2.0	1.6
Belgium	363,751	334,705	259,243	1.5	1.8	1.2
Panama	239,924	223,229	204,670	1.1	1.0	.9
Bermuda	237,890	170,859	193,187	1.0	.8	.9
Denmark	196,700	103,520	73,000	.8	.5	.3
Netherlands	190,989	62,462	50,575	.8	.3	.2
Other countries	1,831,991	1,899,470	2,159,483	7.6	8.7	9.6
Total	24,185,263	21,859,981	22,407,029	100.0	100.0	100.0
Bacon: [3]						
United Kingdom	188,274,240	146,232,728	104,627,031	46.1	35.8	49.4
Germany	74,441,278	80,226,029	25,972,307	18.2	19.6	12.3
Netherlands	30,971,830	37,059,139	7,994,827	7.6	9.1	3.8
Cuba	24,829,609	26,048,678	27,330,083	6.1	6.4	12.9
Belgium	23,215,436	16,059,551	6,401,874	5.7	3.9	3.0
Norway	12,268,761	10,427,177	8,774,714	3.0	2.6	4.1
Sweden	9,768,261	6,862,579	5,538,869	2.4	1.7	2.6
Canada	9,925,008	9,672,987	2,689,584	2.4	2.4	1.3
Italy	9,259,356	38,399,216	7,356,607	2.3	9.4	3.5
France	7,758,436	14,941,288	3,250,198	1.9	3.7	1.5
Denmark	2,456,058	1,601,989	1,605,164	.6	.4	.8
Mexico	395,045	410,779	443,681	.1	.1	.2
Other countries	14,771,022	20,157,551	9,721,775	3.6	4.9	4.6
Total	408,334,340	408,099,391	211,706,124	100.0	100.0	100.0
Cumberland sides: [4]						
United Kingdom		[5] 14,795,568	23,978,860		96.1	97.6
Canada		[5] 302,846	212,673		2.0	.9
Other countries		[5] 302,239	365,313		1.9	1.5
Total		[5] 15,400,653	24,556,786		100.0	100.0
Hams and shoulders, cured: [6]						
United Kingdom	259,352,777	297,751,898	229,124,536	81.2	80.4	82.6
Canada	19,535,776	15,111,884	5,601,147	6.1	4.1	2.0
Belgium	13,978,797	21,159,400	13,399,710	4.4	5.7	4.8
Cuba	12,784,118	14,247,756	15,724,791	4.0	3.9	5.7
France	2,142,135	4,536,967	1,113,300	.7	1.3	.4
Mexico	1,027,949	1,057,104	1,084,576	.3	.3	.4
Newfoundland and Labrador	648,377	804,218	829,974	.2	.2	.3
Panama	630,989	983,826	860,643	.2	.3	.3
Dominican Republic	325,619	332,494	368,707	.1	.1	.1
Other countries	8,842,306	13,423,053	9,459,710	2.8	3.7	3.4
Total	319,269,073	369,458,550	277,567,094	100.0	100.0	100.0
Wiltshire sides: [7]						
United Kingdom		[5] 10,019,129	12,025,415		82.8	82.1
Canada		[5] 1,667,151	2,572,506		13.8	17.6
Other countries		[5] 418,904	49,206		3.4	.3
Total		[5] 12,105,184	14,647,217		100.0	100.0

[2] Excludes Bermuda.
[3] Includes "Cumberland sides" prior to Jan. 1, 1924.
[4] Included with "Bacon" prior to Jan. 1, 1924.
[5] January—June.
[6] Includes "Wiltshire sides" prior to Jan. 1, 1924.
[7] Included with "Hams and shoulders" prior to Jan. 1, 1924.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS—con.						
Pork:						
Fresh—	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
United Kingdom	22,994,860	27,741,986	19,016,381	52.5	56.5	68.9
France	1,000	79,168	214,003	(1)	.2	.8
Other Europe	3,056,615	9,183,088	2,803,007	7.0	18.7	10.1
Total Europe	26,052,475	37,004,242	22,033,391	59.5	75.4	79.8
Canada	14,588,351	8,827,703	1,754,032	33.3	18.0	6.4
Cuba	2,203,886	2,181,492	1,885,694	5.0	4.4	6.8
Panama	499,956	551,923	576,720	1.1	1.1	2.1
Philippine Islands	157,103	141,192	69,351	.4	.3	.3
Bermuda	82,837	97,396	102,711	.2	.2	.4
Mexico	81,547	105,802	181,291	.2	.2	.7
Other countries	105,455	202,866	1,690,270	.3	.4	3.5
Total	43,771,610	49,112,616	27,603,460	100.0	100.0	100.0
Pickled—						
Canada	13,348,745	8,436,629	5,391,594	32.6	22.5	20.2
United Kingdom	5,852,630	4,105,706	3,280,555	14.3	11.0	12.3
Newfoundland and Labrador	5,265,840	5,154,915	4,206,344	12.9	13.8	15.7
Germany	3,523,805	3,308,849	491,821	8.6	8.8	1.8
British West Indies	3,377,783	3,084,256	2,671,817	8.3	8.2	10.0
Cuba	1,379,111	4,411,895	3,909,008	3.4	11.8	14.6
Haiti	1,269,842	1,304,729	1,013,649	3.1	3.5	3.8
Norway	1,567,944	2,349,184	1,813,984	3.8	6.3	6.8
British Guiana	972,334	776,440	929,382	2.4	2.1	3.5
British Honduras	708,250	676,121	565,761	1.7	1.8	2.1
Belgium	328,441	723,541	217,893	.8	1.9	.8
Other countries	3,339,031	3,137,134	2,234,218	8.1	8.3	8.4
Total	40,933,756	37,469,399	26,726,116	100.0	100.0	100.0
Lard:						
Germany	328,111,752	329,792,983	251,982,930	34.4	32.5	31.8
United Kingdom	241,144,099	240,016,876	223,010,931	25.3	23.7	28.1
Cuba	87,897,540	92,082,570	86,479,830	9.2	9.1	10.9
Dominican Republic	4,200,001	4,148,800	3,574,689	.4	.4	.5
Haiti	1,763,529	2,238,522	1,725,143	.2	.2	.2
Belgium	50,472,076	40,634,402	22,538,990	5.3	4.0	2.8
Netherlands	47,802,425	71,570,259	50,368,556	5.0	7.1	6.4
Mexico	44,951,072	45,899,783	35,937,353	4.7	4.5	4.5
France	37,801,672	32,616,060	11,463,141	4.0	3.2	1.4
Italy	29,570,822	77,209,556	41,145,363	3.1	7.6	5.2
Canada	14,318,375	15,230,837	9,810,743	1.5	1.5	1.2
Peru	7,799,400	10,133,557	9,588,335	.8	1.0	1.2
Ecuador	4,518,308	4,052,907	3,776,030	.5	.4	.5
Venezuela	2,192,440	2,101,955	488,856	.2	.2	.1
Poland and Danzig	6,708,091	3,279,220	5,688,169	.7	.3	.7
Sweden	5,941,585	5,498,148	2,808,007	.6	.5	.4
Denmark	5,699,646	7,364,675	4,692,192	.6	.7	.6
Switzerland	2,789,067	2,722,105	1,051,593	.3	.3	.1
Other countries	28,959,805	28,395,173	26,605,490	3.2	2.8	3.4
Total	952,641,705	1,014,898,388	792,735,441	100.0	100.0	100.0
Lard compounds, containing animal fats:						
Mexico	2,692,365	1,307,222	1,251,842	24.2	18.9	14.0
United Kingdom	1,575,543	965,937	677,160	14.1	5.8	7.4
Haiti	1,444,849	1,498,345	1,528,117	13.0	21.7	17.1
Cuba	1,413,357	980,353	2,750,064	12.7	13.5	30.8
Trinidad and Tobago	400,339	19,281	13,971	3.6	.3	.2
Dutch West Indies	271,488	236,185	261,756	2.4	3.4	2.9
Jamaica	155,905	50,668	29,789	1.4	.7	.3
Virgin Islands	130,556	283,383	252,924	1.2	4.1	2.8
Dominican Republic	46,307	36,099	100,992	.4	.5	1.1
Central America	748,478	701,491	572,820	6.7	10.2	6.4
Norway	735,077	86,150	322,285	6.6	1.2	3.6
Panama	357,509	315,049	225,131	3.2	4.6	2.5
Chile	166,690	91,698	167,558	1.5	1.3	1.9
Newfoundland and Labrador	112,614	94,727	70,498	1.0	1.4	.8
Netherlands	80,228	90,993	12,560	.7	1.3	.2
British West Africa	78,051	64,269	138,205	.7	.9	1.5
Bermuda	76,933	39,108	22,829	.7	.6	.3
Canada	64,281	141,132	166,008	.6	2.0	1.9
Germany	3,473	94,198	76,450	(1)	1.4	.9
Other countries	585,187	561,978	303,252	5.3	8.2	3.4
Total	11,139,730	6,907,366	8,922,451	100.0	100.0	100.0

[1] Less than 0.05 per cent.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS—con.						
Lard, neutral:	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Netherlands	8, 778, 345	8, 027, 907	6, 141, 191	33.1	33.1	30.1
United Kingdom	5, 476, 907	4, 609, 418	2, 702, 025	20.7	19.0	13.2
Norway	4, 314, 719	3, 293, 354	1, 891, 235	16.3	13.6	9.3
Germany	2, 059, 671	2, 411, 557	4, 705, 542	7.8	10.0	23.0
Sweden	1, 439, 750	1, 401, 896	1, 226, 967	5.4	5.8	6.0
Denmark	1, 212, 976	1, 284, 990	1, 027, 015	4.6	5.3	5.0
Belgium	971, 168	801, 047	605, 171	3.7	3.3	3.0
Newfoundland and Labrador	784, 755	999, 405	799, 297	3.0	4.1	3.9
Other countries	1, 455, 788	1, 409, 407	1, 322, 473	5.4	5.8	6.5
Total	26, 494, 079	24, 238, 981	20, 420, 916	100.0	100.0	100.0
Oleo oil:						
Netherlands	47, 052, 838	41, 649, 811	46, 206, 581	44.8	44.8	44.0
United Kingdom	14, 967, 025	12, 177, 331	12, 452, 715	14.3	13.1	11.8
Germany	13, 987, 654	11, 218, 141	18, 868, 974	13.3	12.1	17.9
Norway	12, 133, 362	12, 142, 884	8, 917, 808	11.6	13.1	8.5
Turkey in Europe	4, 123, 958	18, 901	0	3.9	(1)	0
Denmark	2, 581, 795	3, 279, 632	3, 503, 417	2.5	3.5	3.3
Sweden	2, 383, 367	1, 223, 604	1, 769, 315	2.3	1.3	1.7
Greece	1, 190, 630	4, 761, 951	6, 660, 802	1.1	5.1	6.3
Belgium	1, 665, 677	1, 843, 777	2, 075, 601	1.6	2.0	2.0
Newfoundland and Labrador	1, 522, 240	1, 282, 125	1, 060, 126	1.5	1.4	1.0
France	245, 712	19, 111	0	.2	(1)	0
Other countries	3, 102, 720	3, 348, 333	3, 630, 144	2.9	3.6	3.5
Total	104, 956, 378	92, 965, 001	105, 145, 483	100.0	100.0	100.0
VEGETABLE PRODUCTS						
Cotton, excluding linters:	*500-lb. bales*	*500-lb. bales*	*500-lb. bales*			
United Kingdom	1, 400, 317	1, 685, 377	2, 605, 456	26.9	29.1	31.6
Germany	928, 541	1, 271, 738	1, 765, 673	17.8	22.0	21.4
France	697, 535	738, 841	932, 866	13.4	12.8	11.3
Italy	572, 068	559, 833	747, 594	11.0	9.7	9.1
Spain	249, 780	216, 166	286, 581	4.8	3.7	3.5
Belgium	183, 429	162, 332	215, 074	3.5	2.8	2.6
Netherlands	71, 851	109, 727	143, 923	1.4	1.9	1.7
Sweden	60, 591	72, 323	61, 174	1.2	1.3	.8
Russia in Europe	7, 693	120, 318	286, 367	.1	2.1	3.5
Other Europe	109, 548	83, 829	96, 581	2.1	1.4	1.2
Total Europe	4, 281, 353	5, 020, 484	7, 141, 289	82.2	86.8	86.7
Japan	679, 159	583, 957	849, 584	13.1	10.1	10.3
Canada	203, 112	146, 688	197, 668	3.9	2.5	2.4
Other countries	41, 894	32, 570	50, 276	.8	.6	.6
Total	5, 205, 518	5, 783, 699	8, 238, 817	100.0	100.0	100.0
Linters:						
Germany	17, 106	73, 816	126, 319	35.7	64.2	63.0
France	6, 664	12, 583	18, 607	13.9	10.9	9.3
Netherlands	3, 767	2, 729	7, 362	7.8	2.4	3.7
United Kingdom	2, 691	9, 518	17, 969	5.6	8.3	9.0
Belgium	2, 340	6, 636	8, 667	4.8	5.8	4.3
Other Europe	509	4, 078	11, 813	1.2	3.5	5.9
Total Europe	33, 077	109, 360	190, 737	69.0	95.1	95.2
Canada	13, 940	5, 043	9, 185	29.1	4.4	4.6
Other countries	929	611	332	1.9	.5	.2
Total	47, 946	115, 014	200, 254	100.0	100.0	100.0
Fruits:						
Apples, fresh—	*Boxes*	*Boxes*	*Boxes*			
United Kingdom	2, 503, 633	3, 661, 826	3, 353, 937	71.7	59.1	65.9
Canada	347, 919	645, 817	443, 278	10.0	10.4	8.7
Norway	128, 537	175, 862	88, 251	3.7	2.8	1.7
Mexico	103, 824	126, 223	118, 042	3.0	2.0	2.3
Argentina	60, 777	86, 716	99, 764	1.7	1.4	2.0
Cuba	49, 973	85, 425	60, 274	1.4	1.4	1.2
Brazil	39, 550	84, 543	109, 174	1.1	1.4	2.2
Sweden	25, 254	179, 274	106, 269	.7	2.9	2.1
Denmark	21, 969	118, 238	31, 502	.6	1.9	.6
Germany	14, 483	476, 633	291, 068	.4	7.7	5.7
Other countries	195, 325	557, 642	386, 569	5.7	9.0	7.6
Total	3, 491, 244	6, 198, 199	5, 088, 128	100.0	100.0	100.0

[1] Less than 0.05 per cent.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Fruits—Continued.						
Apples, fresh—	*Barrels*	*Barrels*	*Barrels*	*Per cent*	*Per cent*	*Per cent*
United Kingdom	480,437	1,734,786	1,255,079	81.1	85.4	83.4
Canada	47,005	45,459	34,439	7.9	2.2	2.3
Cuba	20,156	24,537	17,545	3.4	1.2	1.2
Norway	13,261	30,244	22,675	2.2	1.5	1.5
Argentina	13,083	26,794	52,722	2.2	1.3	3.5
Mexico	4,414	1,749	1,990	.7	.1	.1
Brazil	1,602	232	1,177	.3	(1)	.1
Sweden	1,180	78,768	70,237	.2	3.9	4.6
Germany	18	42,568	19,731	(1)	2.1	1.3
Denmark	7	26,428	12,140	(1)	1.3	.8
Other countries	11,418	20,676	17,480	2.0	1.0	1.2
Total	592,581	2,032,241	1,505,224	100.0	100.0	100.0
Oranges—	*Boxes*	*Boxes*	*Boxes*			
Canada	1,674,106	2,334,329	1,980,152	93.1	90.1	90.2
United Kingdom	27,572	80,074	80,974	1.5	3.1	3.7
Other countries	97,535	177,405	135,488	5.4	6.8	6.1
Total	1,799,213	2,591,808	2,196,614	100.0	100.0	100.0
Apples, dried—	*Pounds*	*Pounds*	*Pounds*			
Netherlands	3,761,850	9,384,147	4,714,118	29.3	30.9	24.5
United Kingdom	1,677,141	2,171,010	2,576,807	13.1	7.1	13.4
Sweden	1,674,426	2,594,713	2,168,945	13.1	8.5	11.3
France	1,124,350	249,303	304,904	8.8	.8	1.6
Denmark	991,536	1,585,798	910,800	7.7	5.2	4.7
Norway	898,108	489,481	566,756	7.0	1.6	3.0
Germany	836,265	12,211,971	6,632,065	6.5	40.2	34.5
Finland	619,591	439,134	468,964	4.8	1.4	2.4
Belgium	402,105	394,650	121,327	3.1	1.3	.6
Canada	250,246	70,439	70,994	2.0	.2	.4
Argentina	53,735	111,049	109,460	.4	.4	.6
China	52,332	65,692	62,964	.4	.2	.3
Other countries	475,565	651,952	516,578	3.8	2.2	2.7
Total	12,817,250	30,410,339	19,224,682	100.0	100.0	100.0
Apricots, dried—						
France	3,306,111	647,575	1,017,712	29.5	1.7	7.7
United Kingdom	1,246,608	6,419,033	1,993,868	11.1	16.6	15.0
Denmark	1,243,494	3,593,724	836,282	11.1	9.3	6.3
Norway	1,085,049	1,455,814	427,136	9.7	3.8	3.2
Netherlands	897,500	9,896,676	1,425,867	8.0	25.5	10.7
Canada	802,276	2,152,860	1,663,792	7.2	5.6	12.5
Sweden	801,447	1,670,550	748,954	7.2	4.3	5.6
Japan	405,946	396,348	271,915	3.6	1.0	2.0
Belgium	394,945	1,911,302	525,782	3.5	4.9	4.0
Germany	323,556	9,252,229	3,082,213	2.9	23.9	23.2
New Zealand	226,795	143,015	115,451	2.0	.4	.9
Other countries	459,456	1,237,552	1,183,203	4.2	3.0	8.9
Total	11,193,183	38,776,678	13,292,175	100.0	100.0	100.0
Prunes—						
France	26,586,389	3,694,496	20,239,510	33.6	2.7	11.8
United Kingdom	18,905,239	30,160,616	31,632,927	23.9	22.1	18.4
Canada	13,951,017	15,209,349	14,775,869	17.6	11.1	8.6
Sweden	4,864,105	7,047,009	5,467,238	6.1	5.2	3.2
Belgium	2,515,887	3,522,493	4,760,229	3.2	2.6	2.8
Denmark	2,003,032	2,935,746	6,155,007	2.5	2.2	3.6
Netherlands	1,771,449	12,015,176	15,564,890	2.2	8.8	9.1
New Zealand	1,520,060	1,428,849	1,613,174	1.9	1.0	.9
Mexico	1,029,352	812,708	893,523	1.3	.6	.5
Norway	742,431	1,233,414	3,936,697	.9	.9	2.3
Germany	263,056	51,125,557	55,000,201	.3	37.5	32.0
Other countries	5,076,736	7,263,072	11,743,941	6.5	5.3	6.8
Total	79,228,753	136,448,485	171,771,206	100.0	100.0	100.0

[1] Less than 0.05 per cent.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Fruits—Continued.						
Raisins—	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
United Kingdom	37,411,094	29,607,010	23,675,405	39.8	33.4	26.1
Canada	30,764,423	34,093,277	38,039,533	32.7	38.7	41.9
Netherlands	6,546,300	4,107,251	4,266,150	7.0	4.7	4.7
New Zealand	5,062,815	4,079,832	3,424,404	5.4	4.6	3.8
Japan	4,632,227	7,695,360	1,918,839	4.9	8.7	2.1
Denmark	2,774,732	4,705,554	3,801,998	3.0	5.3	4.2
China	1,320,312	4,962,689	3,485,191	1.4	5.6	3.8
Mexico	1,254,672	1,586,697	1,783,164	1.3	1.8	2.0
Germany	287,715	527,852	5,099,975	.3	.6	5.6
Other countries	3,908,072	5,786,122	5,288,321	4.2	6.6	5.8
Total	93,962,362	88,151,644	90,782,980	100.0	100.0	100.0
Fruits, canned—						
United Kingdom	164,760,873	120,481,946	156,795,923	79.5	72.6	77.9
Canada	10,191,798	10,414,589	9,413,330	4.9	6.3	4.7
France	6,454,478	3,340,040	4,311,533	3.1	2.0	2.1
Cuba	4,021,997	6,573,053	6,637,117	2.0	4.0	3.3
Dutch East Indies	2,198,419	1,149,430	1,171,221	1.1	.7	.6
Netherlands	1,941,947	3,009,846	2,253,280	.9	1.8	1.1
Belgium	1,515,930	4,413,633	3,048,207	.7	2.7	1.5
Philippine Islands	1,011,011	658,346	1,216,238	.5	.4	.6
Norway	932,074	738,177	419,797	.4	.4	.2
Other countries	14,191,477	15,133,478	15,997,955	6.9	9.1	8.0
Total	207,220,004	165,912,488	201,282,791	100.0	100.0	100.0
Glucose:						
United Kingdom	93,054,723	79,681,031	82,751,108	59.6	56.5	60.5
Egypt	11,091,619	8,421,800	4,708,500	7.1	6.0	3.5
Belgium	6,384,683	4,882,669	3,905,571	4.1	3.5	2.9
Argentina	4,485,924	3,293,295	2,415,001	2.9	2.3	1.8
British South Africa	3,787,884	3,795,921	3,793,678	2.4	2.7	2.8
Greece	3,585,359	3,876,155	2,639,595	2.3	2.7	1.9
Mexico	2,638,023	2,671,754	3,163,757	1.7	1.9	2.3
Turkey in Europe	2,573,822	2,683,746	2,490,460	1.6	1.9	1.8
New Zealand	2,412,760	2,272,816	2,880,096	1.5	1.6	2.1
Netherlands	2,307,945	3,593,020	1,759,630	1.5	2.5	1.3
Norway	2,293,564	2,075,660	2,116,720	1.5	1.5	1.5
Canada	2,277,590	1,958,100	1,187,806	1.5	1.4	.9
Philippine Islands	2,087,695	1,872,963	2,745,346	1.3	1.2	2.0
Cuba	2,037,531	2,795,377	2,634,217	1.3	2.0	1.9
Germany	1,794,295	667,460	34,000	1.1	.5	(1)
Sweden	1,542,520	3,034,040	5,489,444	1.0	2.1	4.0
France	1,322,484	85,361	19,225	.8	(1)	(1)
Italy	1,202,379	4,075,938	3,014,271	.8	2.9	2.2
Other countries	9,433,839	9,654,064	9,074,163	6.0	6.8	6.6
Total	156,314,639	141,141,220	136,822,788	100.0	100.0	100.0
Grains and grain products:						
Corn—	*Bushels*	*Bushels*	*Bushels*			
Canada	32,153,890	8,257,917	4,239,042	34.2	39.0	50.1
United Kingdom	21,271,080	4,448,975	140,855	22.6	21.0	1.7
Netherlands	13,201,784	2,368,892	77,885	14.8	11.2	.9
Germany	11,806,514	672,586	26,317	12.6	3.2	.3
Denmark	3,320,120	695,064	0	3.5	4.2	0
France	3,174,168	380,313	4,844	3.4	1.8	(1)
Cuba	2,776,141	2,615,050	2,267,214	3.0	12.3	26.3
Belgium	1,930,687	563,330	0	2.1	2.7	0
Italy	960,110	11	3	1.0	(1)	(1)
Norway	823,113	85,744	178	.9	.4	(1)
Spain	422,375	151,462	2	.4	.7	(1)
Mexico	298,487	330,830	1,366,317	.3	1.6	16.2
Russia in Europe	8,392	0	8	(1)	0	(1)
Other countries	1,170,390	418,772	338,275	1.2	1.9	4.0
Total	94,064,053	21,186,944	8,460,120	100.0	100.0	100.0

[1] Less than 0.05 per cent.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Grains and grain products—Continued.						
Barley—	*Bushels*	*Bushels*	*Bushels*	*Per cent*	*Per cent*	*Per cent*
United Kingdom	12,784,031	10,390,220	8,578,118	70.3	92.7	36.3
Belgium	1,443,526	172,015	2,225,207	7.9	1.5	9.4
France	1,251,743	15,020	45,973	6.9	.2	.2
Netherlands	696,922	32,124	2,526,346	3.8	.3	10.7
Norway	523,546	226,973	541,928	2.9	2.0	2.3
Germany	441,702	32,882	7,775,309	2.4	.3	32.9
Denmark	143,838	165,417	693,513	.8	1.5	2.9
Mexico	120,570	159,223	200,752	.7	1.4	.8
Other countries	786,931	14,859	1,065,972	4.3	.1	4.5
Total	18,192,809	11,208,733	23,653,118	100.0	100.0	100.0
Rye—						
Germany	16,417,691	4,486,418	8,344,029	31.9	25.3	16.7
Canada	14,212,891	8,579,023	24,524,427	27.6	48.5	49.1
Netherlands	9,238,062	891,742	5,127,465	18.0	5.0	10.3
Norway	5,906,453	1,212,953	2,933,213	11.5	6.9	5.9
Finland	1,240,592	430,935	961,100	2.4	2.4	1.9
Denmark	1,065,705	523,949	804,010	2.0	3.0	1.6
United Kingdom	955,505	168,386	327,405	1.9	1.0	.7
Russia in Europe	928,824	4,328	4,348,411	1.8	(1)	8.7
Other countries	1,476,227	1,496,827	2,539,368	2.9	7.9	5.1
Total	51,411,550	17,704,581	49,909,428	100.0	100.0	100.0
Rye flour—	*Barrels*	*Barrels*	*Barrels*			
Finland	8,443	23,675	1,407	20.1	6.5	2.5
Sweden	7,527	27,688	15,649	18.0	7.6	28.2
Norway	5,062	888	161	12.1	.2	.3
Canada	4,367	4,193	3,982	10.4	1.1	7.2
Netherlands	3,273	69,747	7,544	7.8	19.0	13.6
Latvia	3,244	0	0	7.7	0	0
Esthonia	1,830	1,125	280	4.4	.3	.5
Denmark	1,724	7,513	2,813	4.1	2.1	5.1
Germany	1,456	189,407	13,800	3.5	51.7	24.9
France	1,125	26,714	572	2.7	7.3	1.0
Virgin Islands	709	753	795	1.7	.2	1.4
Dutch West Indies	208	329	332	.5	.1	.6
Cuba	156	135	407	.4	(1)	.7
Brazil	503	0	0	1.2	0	0
Austria	478	0	0	1.1	0	0
Russia in Europe	255	0	686	.6	0	1.2
Palestine and Syria	114	1,200	743	.3	.3	1.4
Belgium	0	10,443	0	0	2.9	0
United Kingdom	0	1,135	499	0	.3	.9
Poland and Danzig	0	0	804	0	0	1.5
Other countries	1,419	1,283	5,001	3.4	.4	9.0
Total	41,903	366,193	55,475	100.0	100.0	100.0
Wheat—	*Bushels*	*Bushels*	*Bushels*			
Italy	33,771,801	7,514,642	25,726,795	21.8	9.9	13.2
United Kingdom	28,257,471	16,811,144	40,274,462	18.2	21.3	20.6
France	14,750,870	2,469,865	14,269,429	9.5	3.1	7.3
Netherlands	12,246,730	4,207,748	16,727,326	7.9	5.4	8.6
Belgium	11,345,230	4,289,722	15,178,448	7.3	5.5	7.8
Germany	8,492,767	1,919,085	7,960,326	5.5	2.4	4.1
Norway	1,241,986	67,200	650,014	.8	.1	.3
Gibraltar	1,066,580	183,592	867,268	.7	.2	.4
Russia in Europe	85,274	0	0	.1	0	0
Spain	23,997	0	1,059,245	(1)	0	.5
Other Europe	1,856,269	1,069,762	8,974,003	1.2	1.4	4.6
Total Europe	113,150,775	38,823,760	131,708,256	73.0	49.3	67.4
Canada	31,992,628	17,979,540	55,596,684	20.6	22.8	28.4
Japan	5,358,422	10,255,908	4,099,967	3.5	13.0	2.1
China	1,106,580	8,301,021	374,065	.7	10.5	.2
Other countries	3,347,566	3,432,805	3,711,235	2.2	4.4	1.9
Total	154,950,971	78,793,034	195,490,207	100.0	100.0	100.0

[1] Less than 0.05 per cent.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Grain and grain products—Continued.						
Wheat flour—	*Barrels*	*Barrels*	*Barrels*	*Per cent*	*Per cent*	*Per cent*
United Kingdom	1,913,833	1,451,452	2,105,234	12.9	8.4	15.1
Germany	1,062,684	1,488,329	1,995,118	7.1	8.6	14.4
Netherlands	982,736	1,841,398	1,781,479	6.6	10.7	12.8
Finland	655,565	619,589	429,822	4.4	3.6	3.1
Turkey in Europe	472,378	32,799	1,292	3.2	.2	(1)
Greece	317,738	388,512	581,694	2.1	2.3	4.2
Russia in Europe	313,519	252	283,118	2.1	(1)	2.0
Norway	216,555	119,770	246,907	1.5	.7	1.8
Denmark	194,899	174,494	234,652	1.3	1.0	1.7
Poland and Danzig	158,785	34,716	113,881	1.1	.2	.8
Sweden	105,507	143,574	79,433	.7	.8	.6
Italy	54,280	153,333	72,357	.4	.9	.5
Belgium	42,072	58,834	101,662	.3	.3	.7
Other Europe	518,670	90,569	176,984	3.4	.5	1.3
Total Europe	7,009,221	6,597,621	8,203,633	47.1	38.2	59.0
China	1,475,843	2,938,805	129,328	9.9	17.0	.9
Hongkong	825,197	1,354,656	449,762	5.5	7.9	3.2
Cuba	1,088,582	1,114,160	1,232,649	7.3	6.5	8.9
Haiti	281,000	428,634	249,574	1.9	2.5	1.8
Other West Indies [2]	472,137	529,691	478,621	3.2	3.0	3.4
Japan	244,560	171,050	53,984	1.6	1.0	.4
Central America	537,868	562,360	576,394	3.6	3.3	4.2
Brazil	477,568	530,160	688,330	3.2	3.1	5.0
Philippine Islands	469,838	585,419	588,604	3.2	3.4	4.2
Kwantung, leased territory	384,909	934,358	42,773	2.6	5.4	.3
Mexico	365,664	495,263	216,074	2.5	2.9	1.6
Egypt	293,147	128,966	194,703	2.0	.7	1.4
British West Africa	108,703	124,229	133,533	.7	.7	1.0
Panama	88,240	85,503	89,559	.6	.5	.6
Venezuela	83,061	59,692	109,817	.6	.3	.8
Canada	66,936	114,361	65,705	.4	.7	.5
Other countries	610,240	497,692	393,111	4.1	2.9	2.8
Total	14,882,714	17,252,620	13,896,154	100.0	100.0	100.0
Hops:	*Pounds*	*Pounds*	*Pounds*			
Belgium	6,852,576	5,290,342	4,768,081	50.8	25.9	29.6
Canada	3,031,538	3,142,801	3,318,211	22.5	15.4	20.6
United Kingdom	2,351,919	8,341,301	5,758,018	17.4	40.8	35.7
Australia	382,633	55,670	80,728	2.8	.3	.5
Japan	168,521	552,500	635,247	1.2	2.7	3.9
Germany	53,270	1,308,643	196,859	.4	6.4	1.2
Other countries	656,726	1,769,448	1,364,834	4.9	8.5	8.5
Total	13,497,183	20,460,705	16,121,978	100.0	100.0	100.0
Oil cake and oil-cake meal:						
Cottonseed cake—						
Denmark	195,357,016	150,179,071	434,529,943	57.0	74.7	73.2
Germany	132,347,954	39,142,550	100,910,828	38.6	19.5	17.0
United Kingdom	7,775,307	4,890,946	11,786,420	2.3	2.4	2.0
Sweden	4,264,960	2,953,708	24,351,973	1.2	1.5	4.1
Other countries	2,798,957	3,760,879	22,084,253	.9	1.9	3.7
Total	342,544,194	200,927,154	593,663,417	100.0	100.0	100.0
Cottonseed meal—						
United Kingdom	83,015,447	35,136,660	134,854,900	74.2	71.1	46.2
Norway	11,201,439	3,920,000	21,194,000	10.0	7.9	7.3
Belgium	3,603,903	448,000	4,950,784	3.2	.9	1.7
Germany	3,566,500	4,039,575	89,502,404	3.2	8.2	30.7
Netherlands	3,284,869	0	12,735,541	2.9	0	4.4
Canada	2,627,740	1,863,430	4,229,490	2.4	3.8	1.4
Other countries	4,505,912	4,031,456	24,244,277	4.1	8.1	8.3
Total	111,805,810	49,439,121	291,711,396	100.0	100.0	100.0
Linseed or flaxseed cake—						
Netherlands	351,445,009	361,799,262	395,438,820	65.5	66.2	58.9
Belgium	91,655,770	86,467,843	187,903,965	17.1	15.8	28.0
United Kingdom	69,518,709	77,948,602	71,037,746	13.0	14.3	10.6
Germany	16,215,405	17,184,173	13,857,547	3.0	3.1	2.0
Other countries	7,720,345	3,447,672	3,221,954	1.4	.6	.5
Total	536,555,238	546,847,552	671,460,032	100.0	100.0	100.0

[1] Less than 0.05 per cent.

[2] Excludes Bermuda.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1935
VEGETABLE PRODUCTS—continued						
Oils, vegetable:						
Cottonseed—	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Canada	26,549,253	20,516,191	23,714,362	41.3	52.0	44.5
Mexico	6,711,448	8,376,445	3,808,649	10.4	21.3	7.2
Norway	5,155,490	1,824,917	2,079,317	8.0	4.6	3.9
Chile	4,174,868	858,632	439,229	6.5	2.2	.8
Argentina	3,840,798	642,753	1,573,118	6.0	1.6	3.0
Cuba	3,442,620	2,200,244	3,913,905	5.4	5.6	7.4
Uruguay	1,997,893	289,552	131,289	3.1	.7	.3
Denmark	1,705,794	19,016	9,805	2.7	(1)	(1)
Netherlands	1,312,695	0	9,252,004	2.0	0	17.4
Dominican Republic	1,045,782	1,070,257	975,337	1.6	2.7	1.8
Panama	515,414	538,598	459,891	.8	1.4	.9
French Guiana	493,331	188,324	78,728	.8	.5	.1
Germany	361,201	119,734	2,405,473	.6	.3	4.5
United Kingdom	342,188	19,697	428,862	.5	(1)	.8
Greece	302,320	18,877	13,471	.5	(1)	(1)
French West Indies	231,380	25,628	129,026	.4	.1	.2
Italy	206,099	11,779	447	.3	(1)	(1)
Other countries	5,903,295	2,696,868	3,847,703	9.1	7.0	7.2
Total	64,291,869	39,417,542	53,260,616	100.0	100.0	100.0
Sugar, refined:	*Short tons*	*Short tons*	*Short tons*			
United Kingdom	158,387	40,190	88,425	42.3	29.7	35.3
France	54,508	19,830	12,276	14.6	14.6	4.9
Norway	23,086	862	11,705	6.2	.6	4.7
Italy	20,977	256	1,321	5.6	.2	.5
Greece	16,191	4,445	12,425	4.3	3.3	5.0
Uruguay	13,688	23,638	22,399	3.7	17.4	8.9
Belgium	9,948	1,266	2,434	2.7	.9	1.0
Turkey in Europe	9,892	0	560	2.6	0	.2
Argentina	6,810	3,802	16,969	1.8	2.8	6.8
Denmark	6,135	(3)	1,445	1.6	(1)	.6
Germany	5,674	2,124	5,030	1.5	1.6	2.0
French Africa	4,559	768	856	1.2	.6	.3
Netherlands	3,710	164	10,426	1.0	.1	4.2
Latvia	3,361	(3)	1,792	.9	(1)	.7
Cuba	842	9,010	3,560	.2	6.7	1.4
Other West Indies [2]	2,244	3,437	3,619	.6	2.5	1.4
Morocco	1,883	737	877	.5	.5	.4
Newfoundland and Labrador	1,865	5,354	4,941	.5	4.0	2.0
Spanish Africa	1,854	1,352	1,338	.5	1.0	.5
British Africa	1,626	1,385	1,973	.4	1.0	.8
Panama	1,606	1,222	2,491	.4	.9	1.0
Mexico	1,232	1,582	1,098	.3	1.2	.4
Spain	1,200	2,542	8,320	.3	1.9	3.3
Philippine Islands	888	354	162	.2	.3	(1)
Bermuda	848	1,055	1,135	.2	.8	.5
Canada	631	6,665	8,769	.2	4.9	3.5
Other countries	21,283	3,431	24,216	5.7	2.5	9.7
Total	374,928	135,471	250,562	100.0	100.0	100.0
Tobacco, leaf:	*Pounds*	*Pounds*	*Pounds*			
United Kingdom	152,700,297	161,237,383	140,772,423	34.3	28.9	33.5
Italy	42,400,610	25,206,503	9,421,120	9.5	4.5	2.3
China	39,792,536	66,017,078	53,932,515	8.9	11.8	12.8
Hongkong	1,394,714	718,104	470,674	.3	.1	.1
France	37,638,320	29,376,348	30,277,096	8.5	5.3	7.2
Germany	30,681,022	55,667,010	19,726,377	6.9	10.0	4.7
Belgium	22,922,338	35,065,458	15,133,227	5.1	6.3	3.6
Australia	18,030,795	24,388,905	20,531,513	4.0	4.4	4.9
Netherlands	16,901,535	50,302,103	15,738,024	3.8	9.0	3.8
Canada	14,134,995	13,156,749	11,658,679	3.2	2.4	2.8
Spain	13,794,761	22,072,215	32,745,565	3.1	4.0	7.8
British West Africa	10,330,701	9,430,198	10,217,748	2.3	1.7	2.4
Sweden	5,919,714	6,991,487	2,191,516	1.3	1.3	.5
Portugal	5,714,648	3,757,887	2,985,812	1.3	.7	.7
French Africa	5,292,900	9,445,486	6,817,760	1.2	1.7	1.6
Denmark	5,037,335	5,531,636	4,170,352	1.1	1.0	1.0
Norway	3,425,895	4,275,471	4,829,116	.8	.8	1.1
Argentina	2,486,390	2,302,490	2,361,819	.6	.4	.6
Japan	2,471,857	11,615,799	8,901,143	.6	2.1	2.1
Switzerland	2,056,692	2,378,141	1,858,732	.5	.4	.4

[1] Less than 0.05 per cent. [2] Excludes Bermuda. [3] Less than one-half ton.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Tobacco, leaf—Continued.	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Haiti	1,430,497	1,362,450	1,749,366	.3	.2	.4
Mexico	434,837	1,502,878	1,970,315	.1	.3	.5
Other countries	10,148,858	15,486,438	21,761,798	2.3	2.7	5.2
Total	445,142,247	557,288,217	420,222,690	100.0	100.0	100.0
Potatoes:	*Bushels*	*Bushels*	*Bushels*			
Cuba	1,921,631	1,931,518	1,869,415	64.5	62.8	51.2
Canada	414,487	536,653	1,033,407	13.9	17.5	28.4
Panama	157,326	156,259	195,000	5.3	5.1	5.3
Mexico	143,690	203,156	168,479	4.8	6.6	4.6
Philippine Islands	46,190	12,452	3,674	1.6	.4	.1
Dominican Republic	37,759	31,777	41,994	1.3	1.0	1.2
British Guiana	31,548	27,958	15,587	1.1	.9	.4
United Kingdom	27,286	0	88,630	.9	0	2.4
Venezuela	25,734	22,142	42,578	.9	.7	1.2
Bermuda	22,959	17,565	13,321	.8	.6	.4
Other countries	151,341	135,466	175,887	4.9	4.4	4.8
Total	2,979,951	3,074,946	3,652,972	100.0	100.0	100.0
FOREST PRODUCTS						
Naval stores:						
Rosin—[9]	*Barrels*	*Barrels*	*Barrels*			
United Kingdom	277,269	327,760	330,095	26.7	27.2	23.4
Germany	162,485	263,325	299,627	15.6	21.9	21.2
Brazil	103,318	110,398	106,109	9.9	9.2	7.5
Japan	86,739	69,019	73,326	8.3	5.7	5.2
Argentina	86,328	97,151	138,384	8.3	8.1	9.8
Canada	58,698	57,816	57,941	5.6	4.8	4.1
Dutch East Indies	46,215	25,551	45,897	4.4	2.1	3.2
Italy	34,827	30,529	50,567	3.3	2.5	3.6
Sweden	27,148	22,024	29,792	2.6	1.8	2.1
Belgium	22,660	32,732	43,987	2.2	2.7	3.1
Netherlands	16,917	31,748	61,875	1.6	2.6	4.4
Cuba	16,022	16,063	22,897	1.5	1.3	1.6
Uruguay	14,765	12,470	13,946	1.4	1.0	1.0
Australia	10,830	22,316	31,863	1.0	1.9	2.3
Other countries	75,521	86,136	106,044	7.6	7.2	7.5
Total	1,039,742	1,205,038	1,412,290	100.0	100.0	100.0
Turpentine, spirits of—	*Gallons*	*Gallons*	*Gallons*			
United Kingdom	5,012,968	6,077,604	6,859,312	55.6	54.3	55.7
Canada	884,901	947,853	818,690	9.8	8.5	6.6
Netherlands	706,906	826,315	1,670,108	7.8	7.4	8.7
Germany	491,331	951,021	1,294,530	5.5	8.5	10.5
Australia	481,344	708,413	536,305	5.3	6.3	4.4
Argentina	397,356	406,222	427,313	4.4	3.6	3.5
Belgium	291,953	467,216	483,234	3.2	4.2	3.9
Brazil	131,229	138,609	195,726	1.5	1.2	1.6
British South Africa	75,452	72,831	72,046	.8	.7	.6
Other countries	538,916	598,089	548,294	6.1	5.3	4.5
Total	9,012,356	11,194,173	12,305,488	100.0	100.0	100.0
Wood:						
Lumber—						
Fir—	*M feet*	*M feet*	*M feet*			
Japan	185,259	323,286	134,845	39.6	51.4	23.4
Australia	77,819	54,745	92,493	16.6	8.7	16.0
China	68,121	72,937	90,102	14.5	11.6	15.6
Peru	34,479	55,494	74,260	7.4	8.8	12.9
British South Africa	15,725	2,914	10,011	3.4	.5	1.7
United Kingdom	15,114	12,012	20,123	3.2	1.9	5.2
Chile	14,420	30,267	29,106	3.1	4.8	5.0
Mexico	12,494	21,227	24,776	2.7	3.4	4.3
Canada	11,185	12,458	3,147	2.4	2.0	.6
Cuba	8,509	10,881	12,347	1.8	1.7	2.1
Argentina	6,750	7,523	18,383	1.4	1.2	3.3
Other countries	18,383	24,809	57,447	3.9	4.0	9.9
Total	468,288	628,553	577,050	100.0	100.0	100.0

[9] Barrels of 500 pounds.

TABLE 649.—*Destination of principal farm products exported from the United States, 1923–1925*—Continued

Article and country to which exported	Year ended June 30					
	1923	1924	1925	1923	1924	1925
FOREST PRODUCTS—continued						
Wood—Continued.						
Lumber—Continued.						
Oak—	*M feet*	*M feet*	*M feet*	*Per cent*	*Per cent*	*Per cent*
United Kingdom	67,544	85,213	93,929	48.9	52.7	54.1
Canada	37,879	35,940	30,867	27.4	22.2	17.8
Belgium	10,101	14,990	12,453	7.3	9.2	7.2
Argentina	9,155	7,953	11,573	6.6	4.9	6.7
Uruguay	2,042	1,061	1,912	1.5	.7	1.1
Spain	1,787	1,520	2,781	1.3	.9	1.6
Netherlands	1,396	2,526	6,125	1.0	1.6	3.5
British South Africa	1,309	3,521	3,825	.9	2.2	2.2
Other countries	6,905	9,103	10,146	5.1	5.6	5.8
Total	138,118	161,757	173,551	100.0	100.0	100.0
Pine, yellow, long leaf—						
Argentina	178,200	154,254	202,262	30.3	24.9	27.3
Cuba	125,354	124,266	152,785	21.3	20.1	20.7
Dominican Republic	5,519	9,037	10,689	.9	1.5	1.4
Other West Indies [2]	36,131	41,630	40,211	6.1	6.7	5.4
Mexico	54,495	60,472	68,851	9.3	9.8	9.3
United Kingdom	41,208	44,136	45,216	7.0	7.1	6.1
Canada	33,006	38,137	21,225	5.6	6.2	2.9
Spain	21,846	23,530	28,649	3.7	3.8	3.9
Uruguay	15,206	16,279	22,915	2.6	3.0	3.1
Belgium	14,217	21,168	14,436	2.4	3.4	2.0
Italy	10,623	15,913	21,988	1.8	2.6	3.0
France	6,265	5,336	5,409	1.1	.9	.7
Netherlands	5,817	9,060	24,527	1.0	1.5	3.3
Panama	4,202	5,508	5,759	.7	.9	.8
Bermuda	1,443	651	1,170	.3	.1	.2
Other countries	34,021	46,756	73,676	5.9	7.5	9.9
Total	587,565	618,493	739,768	100.0	100.0	100.0
Railroad ties—	*Number*	*Number*	*Number*			
Canada	614,412	638,646	481,224	25.0	28.1	17.9
Honduras	451,947	402,522	148,574	19.6	14.6	5.5
Mexico	282,933	766,017	608,621	11.5	27.8	22.6
British India	215,458	0	0	8.8	0	0
Japan	233,382	209,788	587	9.5	7.6	(1)
Chosen	23,935	51,335	0	1.0	1.9	0
Guatemala	155,811	173,042	242,556	6.3	6.3	9.0
Palestine and Syria	117,963	0	0	4.8	0	0
Peru	103,400	228,850	173,494	4.2	8.3	6.4
Chile	52,500	0	1,000	2.1	0	(1)
Cuba	39,841	50,078	186,164	1.6	1.8	6.9
China	36,016	59,083	251,717	1.5	2.1	9.3
United Kingdom	33,181	9,560	46,526	1.3	.3	1.7
Jamaica	29,379	33,739	0	1.2	1.9	0
Costa Rica	15,725	28,617	306,225	.8	1.0	11.4
Panama	390	11,277	16,575	(1)	.4	.6
Colombia	0	32,781	0	0	1.2	0
Other countries	25,270	43,618	235,029	1.0	1.7	8.7
Total	2,459,543	2,758,953	2,698,292	100.0	100.0	100.0

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1923 and 1925.

[1] Less than 0.05 per cent.

[2] Excludes Bermuda.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS						
Cattle:	*Number*	*Number*	*Number*	*Per cent*	*Per cent*	*Per cent*
Canada	230,227	141,171	121,802	91.4	91.2	89.7
Mexico	20,301	12,853	13,326	8.1	8.3	9.8
United Kingdom	737	680	482	.3	.5	.4
Other countries	622	32	158	.2	(1)	.1
Total	251,887	154,736	135,768	100.0	100.0	100.0
Horses:						
Canada	2,165	1,900	1,571	76.9	77.3	73.3
United Kingdom	310	419	374	11.0	17.0	17.5
Mexico	203	30	14	7.2	1.2	.7
Other countries	138	109	183	4.9	4.5	8.5
Total	2,816	2,458	2,142	100.0	100.0	100.0
Butter:	*Pounds*	*Pounds*	*Pounds*			
Denmark	7,371,147	10,457,458	839,629	46.7	35.5	11.7
United Kingdom	369,106	1,719,622	52,370	2.4	5.8	.7
Other Europe	208,011	1,432,848	133,801	1.3	4.9	1.9
Total Europe	7,948,264	13,609,928	1,025,800	50.4	46.2	14.3
New Zealand	3,887,174	5,047,654	1,985,496	24.6	17.1	27.6
Canada	2,989,355	6,451,170	3,587,770	19.0	21.9	49.9
Argentina	793,479	4,084,041	414,778	5.0	13.9	5.8
Other countries	154,013	273,031	175,332	1.0	.9	2.4
Total	15,772,285	29,465,824	7,189,176	100.0	100.0	100.0
Cheese:						
Italy	20,571,704	32,922,074	32,842,899	37.7	49.4	53.4
Switzerland	14,765,121	16,140,224	15,222,229	27.1	24.2	24.8
France	4,537,008	4,418,938	4,814,129	8.3	6.8	7.8
Netherlands	2,147,774	3,048,284	2,970,093	3.9	4.6	4.8
Greece	922,287	2,055,266	1,886,861	1.7	3.1	3.1
United Kingdom	531,157	560,432	276,230	1.0	.8	.5
Norway	469,419	467,650	518,945	.9	.7	.8
Other Europe	571,425	1,697,356	1,312,405	1.0	2.5	2.1
Total Europe	44,515,895	61,310,224	59,843,791	81.6	92.1	97.3
Canada	5,858,305	1,803,217	535,349	10.8	2.7	.9
Argentina	4,000,545	2,736,340	469,498	7.3	4.1	.8
Mexico	70,661	254,720	143,092	.1	.4	.2
Other countries	109,864	492,265	496,869	.2	.7	.8
Total	54,555,270	66,596,766	61,488,599	100.0	100.0	100.0
Eggs, in the shell:	*Dozen*	*Dozen*	*Dozen*			
Canada	261,331	141,717	162,900	48.8	33.3	23.9
Hongkong	214,582	219,232	256,073	40.1	51.4	37.5
China	36,134	61,638	252,491	6.8	14.5	37.0
Other countries	22,827	3,320	10,917	4.3	.8	1.6
Total	534,874	425,907	682,381	100.0	100.0	100.0
Eggs and egg yolks (dried, frozen, and preserved):	*Pounds*	*Pounds*	*Pounds*			
China	14,441,181	17,365,708	17,581,557	97.4	95.3	92.2
Other countries	380,148	847,292	1,486,727	2.6	4.7	7.8
Total	14,821,329	18,213,000	19,068,284	100.0	100.0	100.0
Egg albumen:						
China	2,908,760	7,166,108	4,050,456	90.5	98.5	92.8
Other countries	304,272	111,149	312,729	9.5	1.5	7.2
Total	3,213,032	7,277,257	4,363,185	100.0	100.0	100.0
Hides and skins other than furs:						
Calfskins, dry [2]—						
Argentina	4,474,240	1,673,587	997,043	29.9	15.6	12.3
France	1,519,034	198,582	308,076	10.1	1.8	3.8
United Kingdom	1,225,966	476,850	98,311	8.2	4.4	1.2
Canada	1,224,488	735,369	486,943	8.2	6.8	6.0
Netherlands	1,070,450	509,728	434,741	7.1	4.7	5.4

[1] Less than 0.05 per cent.
[2] Includes "Kip skins, dry," prior to Sept. 22, 1922.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS—con.						
Hides and skins other than furs—Con.						
Calfskins, dry [2]—Continued.	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Sweden	961, 618	128, 713	280, 253	6.4	1.2	3.5
Norway	797, 118	390, 814	801, 198	5.3	3.6	9.9
Germany	587, 669	318, 101	149, 963	3.9	3.0	1.8
Finland	546, 288	1, 084, 443	1, 002, 517	3.6	10.1	12.4
Latvia	534, 818	1, 302, 671	725, 960	3.6	12.1	9.0
Denmark	302, 684	475, 374	194, 692	2.0	4.4	2.4
Russia in Europe	269, 914	74, 518	11, 531	1.8	.7	.1
Belgium	219, 201	47, 464	6, 856	1.5	.4	.1
New Zealand	171, 016	1, 011, 853	906, 925	1.1	9.4	11.2
Poland	162, 886	135, 176	366, 798	1.1	1.3	4.5
China	159, 923	40, 728	21, 409	1.1	.4	.3
Uruguay	106, 712	774, 580	331, 831	.7	7.2	4.1
Italy	90, 331	42, 750	109, 726	.6	.4	1.4
Switzerland	87, 171	0	0	.6	0	0
British India	38, 365	67, 092	60, 759	.3	.6	.8
Australia	30, 678	407, 497	186, 621	.2	3.8	2.3
Other countries	407, 515	858, 148	605, 154	2.7	8.1	7.5
Total	14, 988, 085	10, 754, 038	8, 087, 307	100.0	100.0	100.0
Calfskins, wet [3]—						
France	8, 833, 727	3, 395, 954	3, 937, 049	28.8	18.4	17.0
Canada	5, 068, 156	5, 412, 337	5, 519, 284	16.5	29.3	23.9
Sweden	3, 065, 676	1, 295, 525	2, 279, 794	10.0	7.0	9.9
United Kingdom	2, 805, 954	2, 154, 343	523, 090	9.1	11.7	2.3
Denmark	2, 103, 810	477, 312	1, 037, 827	6.9	2.6	4.5
Netherlands	1, 560, 670	425, 084	938, 844	5.1	2.3	4.1
Italy	1, 243, 504	373, 937	327, 414	4.0	2.0	1.4
Argentina	1, 144, 697	620, 425	421, 006	3.7	3.4	1.8
Switzerland	1, 085, 592	515, 619	795, 350	3.5	2.8	3.4
Belgium	1, 084, 696	129, 756	328, 784	3.5	.7	1.4
Finland	623, 330	639, 043	368, 986	2.0	3.5	1.6
Latvia	576, 640	887, 225	1, 149, 498	1.9	4.8	5.0
Norway	461, 508	291, 977	425, 502	1.5	1.6	1.8
Poland	448, 907	145, 102	1, 650, 220	1.5	.8	7.1
Australia	148, 134	542, 203	778, 980	.5	2.9	3.4
New Zealand	126, 460	392, 815	1, 233, 654	.4	2.1	5.3
Uruguay	9, 368	11, 951	0	[1]	.1	0
Other countries	344, 829	740, 268	1, 422, 399	1.1	4.0	6.1
Total	30, 735, 598	18, 450, 876	23, 137, 681	100.0	100.0	100.0
Cattle hides, dry—						
Argentina	17, 719, 184	2, 509, 740	2, 040, 226	30.1	13.9	14.2
Colombia	7, 865, 138	6, 271, 063	5, 293, 983	13.4	34.6	36.8
China	6, 905, 068	1, 028, 209	52, 694	11.7	5.7	.4
Canada	4, 186, 832	1, 466, 187	1, 114, 133	7.1	8.1	7.7
United Kingdom	3, 279, 153	191, 395	179, 745	5.6	1.1	1.3
Dutch East Indies	2, 582, 016	317, 622	0	4.4	1.8	0
France	2, 441, 200	604, 716	266, 190	4.2	3.3	1.8
Venezuela	2, 383, 540	2, 114, 545	1, 924, 866	4.1	11.7	13.4
Brazil	1, 709, 727	144, 644	169, 231	2.9	.8	1.2
British India	1, 221, 562	82, 965	406, 575	2.1	.5	2.8
Uruguay	1, 097, 292	347, 144	23, 148	1.9	1.9	.2
Cuba	692, 290	1, 724	17, 503	1.2	[1]	.1
Nicaragua	634, 478	445, 524	475, 027	1.1	2.5	3.3
Peru	442, 858	95, 041	39, 251	.8	.5	.3
Mexico	425, 597	240, 454	306, 951	.7	1.3	2.1
Italy	366, 540	37, 111	0	.6	.2	0
Ecuador	349, 107	100, 624	17, 702	.6	.6	.1
New Zealand	198, 229	73, 964	51, 129	.3	.4	.4
Switzerland	151, 535	1, 800	0	.3	[1]	0
Australia	126, 878	488, 810	394, 849	.2	2.7	2.7
Honduras	112, 121	214, 683	181, 499	.2	1.2	1.3
Guatemala	18, 962	12, 597	16, 571	[1]	.1	.1
Other countries	3, 860, 936	1, 321, 372	1, 404, 945	6.5	7.1	9.8
Total	58, 770, 243	18, 111, 934	14, 376, 218	100.0	100.0	100.0

[1] Less than 0.05 per cent.
[2] Includes "Kip skins, dry," prior to Sept. 22, 1922.
[3] Includes "Kip skins, wet," prior to Sept. 22, 1922.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS—con.						
Hides and skins other than furs—Con.						
Cattle hides, wet—	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Argentina	186,696,992	99,660,875	113,565,163	53.9	62.9	61.4
Uruguay	34,551,249	11,714,089	8,614,600	10.0	7.4	4.7
Canada	30,489,525	28,602,925	36,084,396	8.8	18.1	19.5
Brazil	24,403,024	2,511,514	3,051,776	7.0	1.6	1.7
France	12,840,361	2,658,590	5,166,416	3.7	1.7	2.8
Cuba	12,418,583	2,019,120	6,165,361	3.6	1.3	3.3
Italy	5,667,392	701,266	567,386	1.6	.4	.3
Australia	5,082,759	1,833,715	3,394,173	1.5	1.2	1.8
Venezuela	375,171	84,107	271,515	.1	.1	.1
Other countries	34,087,902	8,576,629	8,054,729	9.8	5.3	4.4
Total	346,612,958	158,362,830	184,935,515	100.0	100.0	100.0
Goat and kid skins, dry—						
British India	19,597,086	13,173,680	17,190,066	28.0	25.4	30.1
China	12,148,704	8,636,578	8,467,982	17.2	16.7	14.8
Argentina	4,843,644	3,130,925	3,668,173	6.8	6.0	6.4
Brazil	4,569,259	4,132,230	3,857,513	6.5	8.0	6.7
Aden	4,549,505	2,855,206	2,372,301	6.4	5.5	4.1
Spain	3,451,732	3,158,354	1,641,586	4.9	6.1	2.9
Mexico	2,783,963	2,804,017	4,074,061	3.9	5.4	7.1
United Kingdom	1,925,208	1,263,918	1,992,246	2.7	2.4	3.5
Venezuela	1,801,211	1,438,685	1,403,367	2.5	2.8	2.5
France	1,361,982	632,390	1,372,174	1.9	1.2	2.4
British South Africa	1,359,964	1,066,425	717,369	1.9	2.1	1.3
Other Dutch East Indies	1,248,198	1,634,425	1,436,024	1.7	3.2	2.5
British West Africa	1,147,479	1,023,036	483,637	1.6	2.0	.8
Algeria, Tunis	1,137,958	811,789	662,966	1.6	1.6	1.2
Peru	853,525	863,757	740,066	1.2	1.7	1.3
Netherlands	593,985	247,226	127,180	.8	.5	.2
Morocco	401,520	175,133	336,425	.6	.3	.6
British East Africa	349,862	470,050	913,215	.5	.9	1.6
Greece	325,808	220,157	347,980	.5	.4	.6
Other countries	5,343,457	4,072,877	5,397,745	8.8	7.8	9.4
Total	70,794,050	51,810,858	57,202,066	100.0	100.0	100.0
Goatskins, wet—						
British India	16,824,162	12,989,559	7,410,757	90.4	92.3	84.7
United Kingdom	361,842	14,057	275,586	2.0	.1	3.1
Argentina	158,018	53,962	139,576	.8	.4	1.6
British South Africa	147,200	409,640	326,321	.8	2.9	3.7
Other countries	1,115,824	602,763	601,886	6.0	4.3	6.9
Total	18,607,046	14,069,981	8,754,126	100.0	100.0	100.0
Kip skins, dry [4]—						
Argentina	7,209,064	2,381,371	345,406	62.0	67.3	18.6
United Kingdom	831,957	297,708	187,564	7.2	8.4	10.1
Uruguay	746,250	105,953	0	6.4	3.0	0
France	538,270	154,251	131,410	4.6	4.4	7.1
British West Africa	366,978	40,461	62,060	3.2	1.1	3.3
Canada	290,142	140,922	433,333	2.5	4.0	23.3
China	248,207	28,516	0	2.1	.8	0
Sweden	174,860	105,950	82,070	1.5	3.0	4.4
British India	118,042	85,425	102,560	1.0	2.4	5.5
Netherlands	108,831	0	21,039	.9	0	1.1
Denmark	102,862	0	156,638	.9	0	8.4
Poland and Danzig	0	0	147,925	0	0	7.9
Lithuania	0	28,209	36,086	0	.8	1.9
Switzerland	0	0	24,476	0	0	1.3
Other countries	899,986	172,085	132,814	7.7	4.8	7.1
Total	11,628,449	3,540,851	1,863,331	100.0	100.0	100.0
Kip skins, wet [5]—						
France	3,149,255	1,801,337	1,997,646	34.4	22.9	40.0
Argentina	2,999,463	2,927,069	844,850	32.7	37.3	16.9
Canada	792,258	1,010,218	1,184,614	7.7	12.9	23.7
China	555,793	435,059	9,517	6.1	5.5	.2

[4] Included with "Calfskins, dry," prior to Sept. 22, 1922.
[5] Included with "Calfskins, wet," prior to Sept. 22, 1922.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS—con.						
Hides and skins other than furs—Con.						
Kip skins, wet [5]—Continued.	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Netherlands	415,409	226,589	73,776	4.5	2.9	1.5
Belgium	258,375	102,272	39,284	2.8	1.3	.8
Sweden	188,252	93,113	0	2.1	1.2	0
United Kingdom	113,494	464,106	128,609	1.2	5.9	2.6
Italy	81,692	58,797	348,256	.9	.7	6.9
Lithuania	0	149,520	0	0	1.9	0
Other countries	703,548	589,643	370,727	7.6	7.5	7.4
Total	9,167,539	7,857,723	4,997,279	100.0	100.0	100.0
Sheep and lamb skins, dry and wet—						
United Kingdom	27,358,807	12,760,231	13,421,187	31.7	20.7	21.5
Argentina	16,229,412	12,442,382	10,531,498	18.8	20.2	16.9
New Zealand	13,666,790	12,917,279	16,638,910	15.8	21.0	26.7
Australia	4,838,716	2,674,258	2,532,934	5.6	4.4	4.1
Spain	3,978,638	3,056,921	1,155,008	4.6	5.0	1.9
Canada	3,660,849	1,462,469	2,039,042	4.2	2.4	3.3
Uruguay	3,321,104	2,757,060	1,458,531	3.9	4.5	2.3
British South Africa	2,499,658	1,366,995	1,466,241	2.9	2.2	2.4
Brazil	1,850,933	3,559,447	1,986,765	2.2	5.8	3.2
Chile	1,509,370	1,774,592	1,811,020	1.7	2.9	2.9
Aden	1,135,559	497,326	1,020,178	1.3	.8	1.6
France	1,066,581	884,757	1,568,209	1.2	1.4	2.5
China	683,003	989,688	649,882	.8	1.6	1.0
Other countries	4,576,199	4,362,328	6,031,876	5.3	7.1	9.7
Total	86,375,619	61,445,733	62,311,281	100.0	100.0	100.0
Fibers, animal:						
Silk, raw, in skeins reeled from cocoon—						
Japan	37,989,046	34,445,020	46,855,276	72.1	74.6	79.2
China	10,584,948	8,718,404	8,757,498	20.1	18.9	14.8
Italy	1,818,206	1,576,078	2,064,281	3.5	3.4	3.5
France	408,684	386,454	289,729	.8	.8	.4
Other countries	1,882,720	1,045,907	1,250,864	3.5	2.3	2.1
Total	52,683,604	46,171,863	59,137,648	100.0	100.0	100.0
Wool, unmanufactured—						
Carpet wool—						
China	65,140,551	57,718,076	56,590,990	37.9	48.8	40.9
United Kingdom	60,859,099	29,396,237	45,521,281	35.4	24.8	32.9
Argentina	8,695,254	7,758,910	4,592,577	5.1	6.6	3.3
France	6,156,173	2,982,313	2,951,697	3.6	2.5	2.1
Italy	6,062,134	2,823,275	3,079,541	3.5	2.4	2.2
Germany	4,205,049	1,577,217	1,775,514	2.4	1.3	1.3
British India	3,696,097	3,432,146	5,929,067	2.2	2.9	4.3
Palestine and Syria	2,850,141	4,250,144	5,223,282	1.7	3.6	3.8
Turkey in Asia	2,456,828	2,071,319	1,993,750	1.4	1.7	1.4
Denmark	1,021,014	41,349	355	.6	(1)	(1)
Spain	681,433	357,545	991,659	.4	.3	.7
Persia	303,268	681,037	0	.2	.6	0
Uruguay	266,526	24,288	135,726	.2	(1)	.1
British South Africa	220,748	97,498	33,792	.1	.1	(1)
Greece	175,175	207,774	73,780	.1	.2	.1
Chile	86,119	92,556	17,340	.1	.1	(1)
Other countries	9,003,583	4,863,479	9,550,275	5.1	4.1	6.9
Total	171,879,192	118,375,163	138,461,126	100.0	100.0	100.0
Clothing wool—						
United Kingdom	15,407,663	4,236,568	6,882,070	35.3	33.0	28.2
Argentina	9,762,858	3,101,080	7,636,574	22.3	24.2	31.2
Australia	5,195,722	1,404,650	1,755,787	11.9	8.6	7.2
Uruguay	4,365,494	1,137,585	2,590,112	10.0	8.9	10.6
Canada	3,465,426	1,145,330	1,328,745	7.9	8.9	5.4
British South Africa	1,225,209	346,769	362,958	2.8	2.7	1.5
Chile	1,036,420	674,544	1,566,228	2.4	5.3	6.4
New Zealand	665,235	374,397	513,637	1.5	2.9	2.1
China	334,253	0	27,133	.8	0	.1
Peru	268,938	129,963	246,947	.6	1.0	1.0
Other countries	1,976,011	568,850	1,529,482	4.5	4.5	6.3
Total	43,703,289	12,819,736	24,445,673	100.0	100.0	100.0

[1] Less than 0.05 per cent.

[5] Included with "Calfskins, wet," prior to Sept. 22, 1922.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
ANIMALS AND ANIMAL PRODUCTS—con.						
Fibers, animal—Continued.						
Wool, unmanufactured—Contd.						
Combing wool—	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Argentina	77, 256, 141	19, 787, 998	18, 911, 034	25.9	19.2	16.0
Australia	69, 406, 989	33, 180, 931	37, 101, 110	23.3	32.2	31.5
United Kingdom	58, 657, 619	23, 751, 430	19, 527, 037	19.7	23.1	16.6
Uruguay	42, 040, 631	6, 572, 372	17, 504, 090	14.1	6.4	14.8
British South Africa	16, 187, 811	4, 271, 234	3, 478, 924	5.4	4.1	2.9
New Zealand	13, 666, 196	5, 884, 796	9, 868, 767	4.6	5.7	8.4
Canada	5, 952, 834	4, 857, 552	4, 357, 052	2.0	4.7	3.7
Other countries	15, 327, 931	4, 696, 566	7, 242, 927	5.0	4.6	6.1
Total	298, 496, 152	103, 002, 879	117, 990, 941	100.0	100.0	100.0
Hair of the Angora goat (mohair), alpaca, etc.—						
United Kingdom	4, 674, 695	1, 852, 429	1, 083, 648	41.0	37.6	28.4
British South Africa	3, 469, 041	715, 621	1, 126, 932	30.5	14.5	29.6
Turkey in Europe	2, 601, 398	1, 255, 881	225, 137	22.8	25.5	5.9
Peru	309, 003	911, 394	692, 930	2.7	18.5	18.2
China	274, 764	134, 818	524, 401	2.4	2.7	13.8
Other countries	65, 123	54, 438	155, 594	.6	1.2	4.1
Total	11, 394, 024	4, 924, 581	3, 808, 642	100.0	100.0	100.0
VEGETABLE PRODUCTS						
Cocoa or cacao beans:						
British West Africa	122, 276, 584	152, 532, 542	138, 513, 157	32.1	39.8	36.2
Brazil	59, 978, 071	71, 736, 843	71, 816, 467	15.7	18.7	18.8
Dominican Republic	42, 457, 894	42, 368, 024	46, 926, 416	11.1	11.1	12.3
Ecuador	40, 886, 824	30, 310, 474	28, 999, 365	10.7	7.9	7.6
British West Indies	39, 938, 150	35, 004, 010	37, 374, 107	10.5	9.1	9.8
Venezuela	21, 990, 119	15, 253, 536	18, 409, 584	5.8	4.0	4.8
United Kingdom	16, 030, 541	9, 525, 066	6, 686, 178	4.2	2.5	1.7
Haiti	5, 026, 713	2, 648, 900	2, 259, 650	1.3	.7	.6
Portugal	2, 398, 716	1, 675, 833	3, 053, 786	.6	.4	.8
Other countries	30, 524, 446	21, 916, 014	28, 531, 291	8.0	5.8	7.4
Total	381, 508, 058	382, 971, 242	382, 570, 001	100.0	100.0	100.0
Coffee:						
Brazil	840, 038, 490	950, 950, 167	860, 269, 172	64.4	66.5	67.2
Colombia	193, 889, 565	254, 381, 159	223, 169, 914	14.9	17.8	17.4
Central America	125, 398, 369	90, 816, 554	65, 974, 578	9.6	6.4	5.1
Venezuela	58, 509, 417	59, 967, 439	57, 392, 861	4.5	4.2	4.5
Mexico	39, 490, 998	31, 601, 993	22, 825, 216	3.0	2.2	1.8
Dutch East Indies	20, 987, 513	21, 084, 533	27, 966, 440	1.6	1.5	2.2
West Indies [6]	10, 500, 978	5, 295, 525	11, 237, 537	.8	.4	.9
Aden	2, 436, 100	5, 157, 285	4, 958, 853	.2	.3	.4
Other countries	13, 936, 254	10, 362, 204	5, 774, 963	1.0	.7	.5
Total	1,305,187,684	1,429,616,859	1,279,569,534	100.0	100.0	100.0
Fibers, vegetable:						
Cotton, raw—						
Egypt	157, 990, 018	78, 631, 055	91, 930, 193	66.9	53.8	59.3
China	24, 792, 329	21, 577, 342	15, 941, 770	10.5	14.8	10.3
Mexico	15, 868, 478	13, 442, 658	22, 287, 221	6.7	9.2	14.4
Peru	10, 335, 486	9, 955, 561	5, 678, 348	4.4	6.8	3.6
British India	8, 894, 607	16, 302, 430	13, 044, 278	3.8	11.2	8.4
United Kingdom	5, 274, 508	4, 181, 755	3, 666, 467	2.2	2.9	2.4
Other countries	12, 936, 993	1, 932, 732	2, 544, 021	5.5	1.3	1.6
Total	236, 092, 419	146, 023, 533	155, 092, 298	100.0	100.0	100.0
Flax, unmanufactured—	*Tons*	*Tons*	*Tons*			
United Kingdom	2, 661	1, 699	1, 595	32.4	34.8	37.0
Canada	2, 091	1, 292	499	25.5	26.4	11.6
Belgium	765	290	520	9.3	5.9	12.0
Latvia	474	341	455	5.8	7.0	10.5
Germany	471	2	250	5.7	(1)	5.8
Italy	451	297	154	5.5	6.1	3.6
Poland and Danzig	344	62	12	4.2	1.3	.3
Netherlands	282	170	141	3.5	3.5	3.3

[1] Less than 0.5 per cent.

[6] Includes Bermuda.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Fibers, vegetable—Continued.						
Flax, unmanufactured—Continued.	*Tons*	*Tons*	*Tons*	*Per cent*	*Per cent*	*Per cent*
Japan	126	316	153	1.5	6.5	3.5
Russia in Europe	18	108	198	.2	2.2	4.6
Other countries	524	308	338	6.4	6.3	7.8
Total	8,207	4,885	4,315	100.0	100.0	100.0
Manila fiber—						
Philippine Islands	96,758	97,261	72,402	99.1	99.2	99.3
Other countries	851	771	513	.9	.8	.7
Total	97,609	98,032	72,915	100.0	100.0	100.0
Sisal grass—						
Mexico	77,383	71,162	116,374	79.3	73.4	79.7
Dutch East Indies	8,932	11,172	13,742	9.2	11.5	9.4
British East Africa	3,104	1,875	5,318	3.2	1.9	3.7
United Kingdom	1,185	905	742	1.2	.9	.5
Belgium	864	4,759	3,489	.9	4.9	2.4
Other countries	6,114	7,096	6,316	6.2	7.4	4.3
Total	97,582	96,969	145,981	100.0	100.0	100.0
Fruits:						
Bananas—	*Bunches*	*Bunches*	*Bunches*			
Central America	29,076,239	27,976,873	31,981,525	65.3	62.3	63.3
Jamaica	9,881,633	9,406,524	10,635,004	22.2	20.9	21.0
Colombia	2,466,880	2,343,982	2,260,400	5.5	5.2	4.5
Cuba	1,716,376	2,277,353	2,118,885	3.9	5.1	4.2
Other countries	1,363,118	2,930,373	3,517,517	3.1	6.5	7.0
Total	44,504,246	44,935,105	50,513,331	100.0	100.0	100.0
Lemons [7]—	*Boxes*	*Boxes*	*Boxes*			
Italy	1,636,414	1,010,100	1,260,865	98.6	99.3	99.8
Other countries	23,294	7,432	3,050	1.4	.7	.2
Total	1,659,708	1,017,532	1,263,915	100.0	100.0	100.0
Currants—	*Pounds*	*Pounds*	*Pounds*			
Greece	18,556,646	16,809,739	14,675,834	98.1	98.0	97.4
Other countries	367,498	345,692	388,321	1.9	2.0	2.6
Total	18,924,144	17,155,431	15,064,155	100.0	100.0	100.0
Dates—						
British India	42,384,714	68,728	26,185	81.5	.2	[1]
United Kingdom	3,343,006	1,581,824	12,870,897	6.4	3.6	20.3
Turkey in Asia	2,334,231	2,810,883	4,320,657	4.5	6.4	6.8
Hejaz, Arabia, etc	2,168,026	36,530,233	35,498,330	4.2	82.8	56.0
Palestine and Syria	23,124	340	8,668,075	[1]	[1]	13.7
Other countries	1,784,130	3,150,674	2,059,876	3.4	7.0	3.2
Total	52,037,231	44,142,682	63,444,020	100.0	100.0	100.0
Figs—						
Greece	[8] 17,093,647	4,456,595	7,596,281	46.7	14.1	16.8
Portugal	6,163,428	3,866,124	4,794,097	16.8	12.2	10.6
Turkey in Asia	4,514,558	19,688,606	22,157,498	12.3	62.2	48.9
Italy	1,550,149	1,526,320	3,793,447	4.2	4.8	8.4
United Kingdom	1,259,785	343,755	1,933,145	3.4	1.1	4.3
Spain	1,173,151	322,381	795,381	3.2	1.0	1.7
Turkey in Europe	1,146,765	115,006	120,903	3.1	.4	.3
Other countries	3,683,572	1,348,953	4,068,257	10.3	4.2	9.0
Total	36,585,055	31,667,740	45,259,009	100.0	100.0	100.0
Grains:						
Rice, cleaned—						
French Indo-China	27,773,526	1,770,000	417,500	48.8	5.5	1.0
Hongkong	21,054,035	21,266,678	24,941,943	37.0	66.1	59.9
Germany	2,599,180	3,270,003	3,019,987	4.6	10.2	7.2
China	2,071,080	1,636,611	1,673,819	3.6	5.1	4.0

[1] Loss than 0.05 per cent.

[7] Boxes of 74 pounds net.

[8] Includes Greece in Asia.

TABLE 659.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Grains—Continued.						
Rice, cleaned—Continued.	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
British India	1,587,012	523,870	2,006,091	2.8	1.6	4.8
United Kingdom	518,672	295,778	0	.9	.9	0
Netherlands	380,000	1,823,281	4,858,073	.7	5.7	11.7
Italy	253,957	527,952	632,927	.4	1.6	1.5
Dutch East Indies	220,496	0	0	.4	0	0
Mexico	0	187,167	2,853,159	0	.6	6.9
Other countries	488,734	891,404	1,235,967	.8	2.7	3.0
Total	56,946,692	32,192,744	41,639,466	100.0	100.0	100.0
Rice, uncleaned (including paddy)—						
Mexico	7,137,461	2,543,163	360	61.1	49.7	(1)
Japan	2,552,505	2,326,042	11,603,666	21.9	45.5	96.5
French Indo-China	1,282,000	0	0	11.0	0	0
Hongkong	317,561	149,543	87,006	2.7	2.9	.7
Other countries	388,691	98,757	333,323	3.3	1.9	2.8
Total	11,678,218	5,117,505	12,024,355	100.0	100.0	100.0
Rice flour and meal—						
Japan	342,963	388,278	416,972	37.6	43.1	10.4
French Indo-China	200,009	0	0	22.0	0	0
Hongkong	172,992	201,446	166,236	19.0	22.4	4.1
China	2,100	1,135	2,480	.2	.1	.1
Germany	156,750	159,040	2,803,141	17.2	17.7	69.9
Netherlands	22,400	60,000	0	2.5	6.7	0
Dutch East Indies	6,394	2,717	0	.7	.3	0
Canada	1,744	1,480	4,233	.2	.2	.1
United Kingdom	688	48,500	112	.1	5.4	(1)
Mexico	0	0	605,784	0	0	15.1
Other countries	4,950	37,344	14,368	.5	4.1	.3
Total	910,981	899,940	4,013,326	100.0	100.0	100.0
Wheat—	*Bushels*	*Bushels*	*Bushels*			
Canada	18,012,467	27,276,774	6,169,024	100.0	100.0	100.0
Other countries	73	7,131	169	(1)	(1)	(1)
Total	18,012,540	27,283,905	6,169,193	100.0	100.0	100.0
Wheat flour—	*Barrels*	*Barrels*	*Barrels*			
Canada	428,659	168,799	6,219	99.8	99.8	92.6
Other countries	762	333	499	.2	.2	7.4
Total	429,421	169,132	6,718	100.0	100.0	100.0
Nuts:						
Filberts, shelled—	*Pounds*	*Pounds*	*Pounds*			
Spain	4,672,896	3,017,454	2,197,158	75.3	41.0	50.6
Turkey in Europe	654,527	2,065,648	774,966	10.5	28.1	17.8
France	539,693	1,474,318	923,815	8.7	20.1	21.3
Italy	277,172	509,054	188,451	4.5	6.9	4.3
Other countries	64,285	286,514	260,353	1.0	3.9	6.0
Total	6,208,573	7,352,983	4,344,743	100.0	100.0	100.0
Filberts, not shelled—						
Italy	13,911,108	14,037,698	7,184,872	96.8	99.5	77.0
Spain	244,377	44,982	2,090,345	1.7	.3	22.4
France	87,455	27,525	32,400	.6	.2	.4
Turkey in Europe	58,264	0	6,169	.4	0	.1
Other countries	65,071	504	11,833	.5	(1)	.1
Total	14,366,275	14,110,659	9,325,619	100.0	100.0	100.0
Peanuts, shelled—						
China	28,350,727	42,043,532	83,786,251	66.8	87.0	97.9
Hongkong	0	60,522	41,069	0	.1	.1
Japan	12,102,549	2,358,318	466,018	28.5	4.9	.5
Spain	594,219	847,836	468,280	1.4	1.8	.5
Kwantung, leased territory	41,000	536,156	10,000	.1	1.1	(1)
Other countries	1,350,230	2,463,382	838,009	3.2	5.1	1.0
Total	42,438,725	48,309,746	85,609,627	100.0	100.0	100.0

[1] Less than 0.05 per cent.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Nuts—Continued.						
Peanuts, not shelled—	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
China	2,462,095	3,065,120	9,357,234	63.7	85.8	82.3
Hongkong	47,607	66,589	40,298	1.2	1.9	.4
Japan	999,204	409,590	1,543,498	25.9	11.5	13.6
Spain	303,593	11,110	184,979	7.9	.3	1.6
Other countries	49,640	18,215	245,424	1.3	.5	2.1
Total	3,862,139	3,560,624	11,371,433	100.0	100.0	100.0
Walnuts, shelled—						
France	13,846,640	15,233,834	17,050,910	78.6	81.2	72.1
China	1,676,430	1,756,451	3,424,349	9.5	9.4	14.5
Spain	585,329	710,591	1,047,109	3.3	3.8	4.4
Italy	286,385	155,518	747,761	1.6	.8	3.2
Canada	254,380	257,130	344,727	1.4	1.4	1.5
Turkey in Europe	213,696	143,051	348,907	1.2	.8	1.5
Other countries	742,732	508,209	675,827	4.4	2.6	2.8
Total	17,606,092	18,764,784	23,639,590	100.0	100.0	100.0
Walnuts, not shelled—						
Italy	8,497,492	10,389,368	11,477,343	42.7	56.9	37.1
France	8,487,674	4,622,757	9,222,391	42.6	25.3	29.8
China	1,591,683	1,951,850	6,332,116	8.0	10.7	20.5
Chile	574,467	333,080	811,245	2.9	1.8	2.6
Canada	199,738	65,400	269,443	1.0	.4	.9
Japan	100,700	35,000	430,189	.5	.2	1.4
Rumania	73,218	166,266	449,686	.4	.9	1.5
Turkey in Europe	18,673	214,601	164,527	.1	1.2	.5
Other countries	369,774	466,614	1,755,313	1.8	2.6	5.7
Total	19,913,419	18,244,936	30,912,253	100.0	100.0	100.0
Oils, vegetable:						
Coconut—						
Philippine Islands	210,968,211	181,013,122	250,120,748	99.2	99.9	99.9
British India	1,492,431	125,434	157,665	.7	.1	.1
Other countries	112,775	91,763	49,511	.1	(1)	(1)
Total	212,573,417	181,230,319	250,327,924	100.0	100.0	100.0
Olive oil, edible—						
Italy	43,935,892	52,076,274	58,380,487	58.9	64.4	72.7
Spain	18,213,291	19,560,602	11,323,964	24.4	24.2	14.1
France	8,093,740	6,117,812	6,050,908	10.8	7.6	7.5
Greece	[2]3,571,235	1,633,265	2,487,619	4.8	2.0	3.1
Turkey in Europe	277,796	57,281	8,153	.4	.1	(1)
Turkey in Asia	0	634	2,575	0	(1)	(1)
Other countries	533,971	1,434,877	2,048,705	.7	1.7	2.6
Total	74,625,925	80,880,745	80,302,411	100.0	100.0	100.0
Soy-bean oil—						
Kwantung	31,621,507	16,034,460	15,491,975	81.8	90.9	75.8
Japan	4,190,610	21,010	180,360	10.8	.1	.9
China	2,105,590	1,534,950	3,431,070	5.4	8.7	16.8
Other countries	717,674	40,790	1,330,438	2.0	.3	6.5
Total	38,635,381	17,631,210	20,433,843	100.0	100.0	100.0
Seeds:						
Flaxseed—	*Bushels*	*Bushels*	*Bushels*			
Argentina	22,330,931	16,169,352	8,255,176	89.3	82.6	61.5
Canada	2,191,103	3,365,498	5,137,183	8.8	17.2	38.3
Other countries	483,902	41,900	26,728	1.9	.2	.2
Total	25,005,936	19,576,750	13,419,087	100.0	100.0	100.0
Clover seed—						
Clover, red—	*Pounds*	*Pounds*	*Pounds*			
France	245,766	17,094,803	4,842,935	40.4	70.4	74.6
Poland	132,000	0	0	21.7	0	0
Canada	131,284	556,231	115,841	21.5	2.3	1.8
Germany	52,848	733,345	519,201	8.7	3.0	8.0
United Kingdom	35,858	3,883,926	409,223	5.9	16.0	6.3

[1] Less than 0.05 per cent.

[2] Includes Greece in Asia.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Seeds—Continued.						
Clover seed—Continued.						
Clover, red—Continued.	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Czechoslovakia	10,910	100,723	21,600	1.8	.4	.3
Italy	0	974,564	194,356	0	4.0	3.0
Chile	0	654,654	230,709	0	2.7	3.5
Other countries	0	289,125	160,197	0	1.2	2.5
Total	608,666	24,287,371	6,494,062	100.0	100.0	100.0
All other, including alsike, crimson, and all other clover—						
Canada	10,482,073	18,513,745	16,614,679	78.9	64.3	72.6
France	1,569,395	6,080,806	4,520,774	11.8	21.1	19.7
United Kingdom	475,639	935,547	40,627	3.6	3.2	.2
Germany	303,289	1,431,992	868,356	2.3	5.0	3.2
Poland	64,953	53,484	273,613	.5	.2	1.8
Czechoslovakia	56,401	581,239	191,395	.4	2.0	.8
Chile	0	88,424	0	0	.3	0
Italy	0	17,600	43,250	0	.1	.2
Other countries	341,708	1,101,301	340,708	2.5	3.8	1.5
Total	13,293,458	28,804,138	22,893,402	100.0	100.0	100.0
Spices:						
Pepper (unground)—						
Dutch East Indies	18,594,560	21,793,822	27,297,296	55.5	79.8	72.8
British India	6,900,406	1,310,831	3,496,047	20.6	4.8	9.3
Straits Settlements	5,130,284	3,073,238	4,249,780	15.3	11.2	11.3
United Kingdom	473,376	230,467	393,507	1.4	.8	1.1
Netherlands	285,144	117,864	750,707	.8	.4	2.0
Ceylon	284,132	2,141	194,948	.8	[1]	.5
Other countries	1,879,856	807,087	1,123,089	5.6	3.0	3.0
Total	33,547,758	27,335,450	37,505,374	100.0	100.0	100.0
Sugar, raw, cane:	*Short tons*	*Short tons*	*Short tons*			
Cuba	4,020,796	3,257,632	3,858,186	92.1	86.5	89.0
Philippine Islands	276,616	315,426	382,889	6.3	8.4	8.8
Central America	34,490	16,723	18,397	.8	.5	.4
Peru	4,396	52,395	29,820	.1	1.4	.7
Other South America	2,177	25,000	3,011	[1]	.7	.1
Dominican Republic	1,740	39,095	6,396	[1]	1.0	.1
Other countries	26,529	58,729	38,297	.7	1.5	.9
Total	4,366,744	3,765,000	4,336,996	100.0	100.0	100.0
Tea:	*Pounds*	*Pounds*	*Pounds*			
Japan	35,974,918	34,297,049	28,529,302	37.2	32.5	30.7
British East Indies	19,851,220	23,720,914	24,784,514	20.5	22.5	26.7
United Kingdom	15,545,681	17,780,569	18,985,531	16.1	16.9	20.5
China	13,507,750	18,538,792	10,321,852	14.0	17.6	11.1
Dutch East Indies	8,666,908	8,672,748	6,202,286	9.0	8.2	6.7
Canada	791,745	705,650	611,567	.8	.7	.7
Other countries	2,330,386	1,727,275	3,343,652	2.4	1.6	3.6
Total	96,668,608	105,442,997	92,778,704	100.0	100.0	100.0
Tobacco, leaf (unmanufactured):						
Leaf, product of Philippine Islands	1,924,196	1,145,121	1,129,995	100.0	100.0	100.0
Leaf, suitable for cigar wrappers—						
Netherlands	8,576,043	6,219,949	5,608,130	96.7	97.0	97.3
Dutch East Indies	119,016	19,431	5,526	1.3	.3	.1
Cuba	58,882	32,242	122,464	.7	.5	2.1
Canada	17,172	23,108	18,707	.2	.4	.3
Other countries	[2] 96,389	118,909	11,270	1.1	1.8	.2
Total	8,867,502	6,413,639	5,766,097	100.0	100.0	100.0
All other leaf—						
Greece	[3] 27,869,579	12,887,544	27,724,885	44.2	28.8	40.0
Cuba	22,489,375	18,265,315	20,737,457	35.6	40.8	30.4
Turkey in Europe	4,547,316	1,052,244	1,226,963	7.2	2.3	1.8
Germany	2,475,697	3,813,752	1,649,266	3.9	8.5	2.4

[1] Less than 0.05 per cent. [2] Includes 73,575 pounds from the Virgin Islands. [3] Includes Greece in Asia.

TABLE 650.—*Origin of principal agricultural products imported into the United States, 1923–1925*—Continued

Article and country of origin	Year ended June 30—					
	1923	1924	1925	1923	1924	1925
VEGETABLE PRODUCTS—continued						
Tobacco, leaf—Continued.						
All other leaf—Continued.	*Pounds*	*Pounds*	*Pounds*	*Per cent*	*Per cent*	*Per cent*
Turkey in Asia	1,284,647	1,349,916	6,508,377	2.0	3.0	9.5
Netherlands	1,120,439	107,504	3,399	1.8	.2	(1)
Italy	825,262	4,089,388	9,536,710	1.3	9.1	14.0
United Kingdom	588,638	615,799	72,660	.9	1.4	.1
Bulgaria	296,027	1,546,617	349,236	.5	3.5	.5
China	98,000	102,639	53,647	.2	.2	.1
Other countries	1,483,044	990,648	372,435	2.4	2.2	.6
Total	63,078,024	44,821,366	68,235,035	100.0	100.0	100.0
Vegetables:						
Onions—	*Bushels*	*Bushels*	*Bushels*			
Spain	990,288	1,097,991	1,090,360	55.5	78.1	52.5
Egypt	447,082	147,796	618,238	25.1	10.5	29.8
United Kingdom	157,396	51,540	70,710	8.8	3.7	3.4
Canada	42,300	774	28,637	2.4	(1)	1.4
Netherlands	33,484	310	60,480	1.9	(1)	2.9
Mexico	19,597	28,536	17,873	1.1	2.0	.9
Bermuda	17,551	9,297	8,645	1.0	.7	.4
Canary Islands	13,498	7,551	6,587	.8	.5	.3
Italy	10,784	17,016	18,656	.6	1.2	.9
Australia	3,423	3,712	8,013	.2	.3	.4
Other countries	47,122	41,897	146,499	2.6	3.0	7.1
Total	1,782,525	1,406,420	2,074,698	100.0	100.0	100.0
Potatoes (natural state)—						
Canada	470,357	451,806	394,053	82.2	80.1	82.5
Bermuda	89,514	87,320	59,980	15.6	15.5	12.6
Canary Islands	5,683	0	1,147	1.0	0	.2
Netherlands	3,337	1,476	0	.6	.3	0
Azores and Madeira Islands	1,062	0	0	.2	0	0
Cuba	512	4,793	8,585	.1	.8	1.8
Spain	4	3,609	7,283	(1)	.6	1.5
Egypt	0	11,196	0	0	2.0	0
Other countries	1,678	3,846	6,506	.3	.7	1.4
Total	572,147	564,046	477,554	100.0	100.0	100.0
FOREST PRODUCTS						
India rubber, crude:	*Pounds*	*Pounds*	*Pounds*			
British East Indies	547,799,814	416,837,321	506,103,995	68.7	67.5	63.1
Dutch East Indies	113,302,153	115,233,963	147,319,412	14.2	18.7	18.3
United Kingdom	75,700,650	47,513,200	101,748,803	9.5	7.7	12.7
Brazil	30,771,572	23,534,637	30,928,250	3.9	3.8	3.9
Netherlands	10,821,152	3,610,487	4,544,570	1.4	.6	.6
France	2,742,632	1,310,209	3,537,751	.3	.2	.4
Peru	1,574,697	764,401	1,526,398	.2	.1	.2
Other South America	2,033,793	3,097,943	1,975,079	.3	.5	.2
Canada	379,604	98,552	284,970	(1)	(1)	(1)
Mexico	144,253	32,756	0	(1)	(1)	0
Portugal	10,748	75,883	0	(1)	(1)	0
Other countries	12,374,081	4,992,545	4,617,174	1.5	.9	.6
Total	797,655,149	617,101,897	802,586,402	100.0	100.0	100.0
Wood:						
Cabinet wood, mahogany—	*M feet*	*M feet*	*M feet*			
Central America	17,575	22,777	31,058	41.0	48.5	44.2
Africa	14,771	16,033	26,081	34.4	34.1	37.1
Mexico	5,221	2,906	9,558	12.2	6.2	13.6
United Kingdom	3,923	2,897	1,638	9.1	6.2	2.3
Other countries	1,405	2,362	1,947	3.3	5.0	2.8
Total	42,895	46,975	70,282	100.0	100.0	100.0

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1923 and 1925.

[1] Less than 0.05 per cent.

TABLE 651.—*Foreign trade of the United States in agricultural products: Comparative summary, 1909–1925*

Year ended June 30	Agricultural exports [1]			Agricultural imports [1]		Excess of agricultural exports (+) or of imports (−)	Forest products			
	Domestic						Exports			
	Total	Percentage of all exports	Foreign	Total	Percentage of all imports		Domestic	Foreign	Imports	Excess of exports (+) or of imports (−)
	1,000 dollars	*Per cent*	*1,000 dollars*	*1,000 dollars*	*Per cent*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1909	903,239	55.1	9,585	638,613	48.7	+274,210	72,442	4,983	123,920	−46,495
1910	871,158	50.9	14,470	687,509	44.2	+198,119	85,630	9,802	178,572	−84,040
1911	1,030,794	51.2	14,665	680,205	44.5	+365,254	103,039	7,587	162,312	−51,686
1912	1,050,627	48.4	12,108	783,457	47.4	+279,277	108,122	6,413	172,523	−57,988
1913	1,123,652	46.3	15,029	815,301	45.0	+323,381	124,836	7,432	180,502	−48,235
1914	1,113,974	47.8	17,729	924,247	48.8	+207,456	106,979	4,518	155,261	−43,765
1915	1,475,938	54.3	34,420	910,786	54.4	+599,571	52,554	5,089	165,849	−108,207
1916	1,518,071	35.5	42,088	1,189,705	54.1	+370,454	68,155	4,364	252,851	−180,331
1917	1,968,253	31.6	37,640	1,404,972	52.8	+600,921	68,919	11,172	322,699	−242,609
1918	2,280,466	39.1	39,563	1,618,874	55.0	+701,144	87,181	6,066	335,033	−241,787
1919	3,579,918	50.6	103,530	1,768,191	57.1	+1,915,257	113,275	6,004	293,781	−174,501
1920	3,861,511	48.6	122,508	3,129,659	59.7	+854,450	190,040	11,026	508,410	−307,334
1921	2,607,641	40.8	87,019	1,941,837	53.1	+752,823	141,876	7,805	343,141	−193,460
1922	1,915,866	51.8	40,783	1,282,880	49.2	+673,769	94,115	5,120	245,474	−146,239
1923	1,799,168	46.3	43,359	1,905,245	50.4	−62,718	129,981	6,989	405,725	−268,755
1924	1,867,098	44.2	57,640	1,716,715	48.3	+208,023	162,799	6,642	374,339	−204,898
1925 [2]	2,280,165	47.7	54,091	1,817,473	47.5	+516,783	156,640	11,932	465,463	−296,891

Division of Statistical and Historical Research. Compiled from Foreign Commerce and Navigation of the United States, 1909–1918, and Monthly Summary of Foreign Commerce of the United States, June issues, 1920–1925. All values are gold.

[1] Not including forest products.

[2] Preliminary.

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*

This table presents some results, in terms of averages per farm, from most of the farm business surveys and farm account books kept by farmers that have been made in the United States from 1907 to 1924. It includes essentially all the leading types of farming. The studies were made either singly or cooperatively in some form by the United States Department of Agriculture, and the agricultural colleges and experiment stations.

EXPLANATION OF TERMS

Capital.—The value of all real estate, machinery, livestock, and other property used to carry on the year's business. It includes the value of the farm dwelling, but not of the household furnishings.

Receipts.—Proceeds from the sale of crops produced during the farm year, the increase from livestock, and the receipts from work off the farm, rent of buildings, etc. The increase from stock is found by subtracting the sum of the amount paid for stock purchases and the inventory value at the beginning of the year from the sum of the receipts from livestock products, sales of livestock, and the inventory value at the end of the year. Receipts do not include the family living from the farm.

Expenses.—Annual expenditures made in carrying on the farm business. They include depreciation on buildings and equipment, and the unpaid labor performed by members of the farm family, but do not include the farmer's own labor, or any household and personal expenses.

Farm income.—The difference between receipts and expenses. It does not include the family living from the farm.

Labor income.—Farm income less 5 per cent interest charge for the use of the capital. It does not include the family living from the farm. In some of the studies, as originally published, other rates of interest were used.

Return to capital.—The rate returned to the capital after the farmer's labor is deducted from the farm income.

Labor income represents what the farm has earned from the year's business for the labor and management of the farmer after a charge of 5 per cent has been deducted for the use of the capital, while return to capital represents what the farm has earned from the year's business for the capital used after a charge has been deducted for the labor and management of the farmer.

Family living from the farm.—The food products set aside from the year's production, and the fuel, and house rent furnished by the farm for the living of the farm family. This is in addition to receipts, farm income, and labor income.

Farmer's labor.—An allowance for the farmer's own labor and management at the rate he would have to pay another man to take his place. It does not include the family living from the farm.

Other unpaid family labor.—The unpaid family labor other than the labor of the farmer himself determined on the basis of what it would cost to have the same work done by hired labor, or on the amount of additional labor that would need to be hired to carry on the same sized business if the family labor had not been available.

Principal sources of receipts.—These are named in order of importance and in most instances, include all those amounting to 5 per cent or more of the total receipts. Under this heading cotton includes sales of cottonseed; poultry includes sales of eggs; sheep includes lambs and wool; horses includes mules and colts; work off the farm includes man, man and team, and machine work; wood lot includes sales of timber, lumber, posts, firewood, etc. Cattle does not include sales of dairy products.

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
			Number	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Alabama:														
Chilton	Cotton, work off farm	1920	50	77	4,362	3,189	637	599	38	−180	−10.2		481	157
Dale	Cotton, peanuts	1918	90	170	6,183	4,959	2,079	823	1,256	947	10.9		579	174
Lauderdale	Cotton, corn	1919	84	96	6,454	4,904	1,556	936	620	297	3.0		424	191
Madison	do	1920	53	176	12,802	10,291	1,377	1,789	−412	−1,052	−7.4		529	220
Marshall	Cotton	1918	90	58	4,833	3,917	1,118	594	524	282	1.2		464	147
Do	Cotton, corn	1919	79	71	6,854	5,285	1,957	1,011	946	603	6.9		475	230
Tallapoosa	Cotton, cattle, hogs	1918	89	204	4,454	3,480	1,041	648	393	170	−1.6		465	146
Several southeastern counties.	Cotton, hogs, peanuts	1919	72		8,993	6,483	2,716	1,225	1,491	1,041				
Do	Cotton, peanuts, hogs, corn	1921	191	113	5,138	4,032	1,007	683	324	67	.1		321	102

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
		Number		*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Arizona: Graham, Maricopa, and Yuma.	Cattle, alfalfa, dairy, hogs, wheat, poultry, cotton.	1914–1916	627	104	21,740	17,110	4,051	1,604	2,447	1,360	8.1	328	694	100
Arkansas:														
Columbia	Cotton	1916	50							603		433		
Lee	do	1919	80	138	13,054	10,437	3,360	2,382	978	325	3.9		469	240
Lee and Phillips	do	1916	50							1,372		417		
Pulaski	do	1916	70	90						301		347		
California (several counties)	Citrus fruit	1921	12	25	38,214		5,790	3,315	2,475	564				
Do	do	1922	12	19	45,327		8,165	4,191	3,974	1,708	6.3		1,097	
Do	Deciduous fruit	1921	20	44	19,988		3,217	2,843	374	−625				
Do	do	1922	12	53	28,054		6,136	4,524	1,612	209	1.9		1,065	
Do	Hay, grain	1921	12	215	17,609		3,537	3,129	408	−472				
Do	do	1922	10	200	26,065		5,196	3,382	1,814	511	2.8		1,081	
Do	Dairy	1921	20	80	18,556		5,037	3,608	1,429	501				
Do	do	1922	20	55	20,101		3,891	2,205	1,686	681	3.4		1,005	
Do	Poultry	1921	8	25	14,810		3,607	2,629	978	238				
Do	do	1922	12	7	5,184		2,601	1,813	788	529	3.6		601	
Do	General crops and livestock	1921	21	70	12,721		2,801	2,498	303	−333				
Do	do	1922	22	74	18,184		3,228	2,289	939	30	.1		919	
Do	Livestock	1921	7	428	29,961		5,671	4,562	1,109	−389				
Do	Poultry and fruits	1922	12	20	16,598		4,115	2,677	1,438	608	3.1		925	
Do	Above types combined	1921	100	126	21,694		4,237	3,227	1,010	−75	2.7		417	
Do	do	1922	100	59	22,047		4,530	2,867	1,663	561	3.3		942	
Colorado:														
Adams—														
Bennett	Wheat	1914	54	365	9,824		1,505	407	1,158	667				
Do	do	1915	52	443	12,597				951	321				
El Paso—														
Divide	Cattle, oats, dairy	1914	57	1,117	21,960	17,689	2,649	941	1,708	610	5.5		490	178
Do	do	1915	62							587				
Las Animas—Sunflower Valley.	Livestock, crops	1915	45	296	13,230				799	137				
Lincoln and Kit Carson—														
Flagler	Cattle, wheat	1914	48	590	11,251		1,554	368	1,186	623				
Do	do	1915	68							929				
Lincoln and Washington.	Wheat, cattle, hogs, dairy, poultry	1922	159	723	28,124	24,625	2,758	1,823	935	−471	1.1	540	632	189
Logan—														
Fleming	Wheat, corn	1914	66	505	18,885		3,699	931	2,768	1,824				
Do	do	1915	54		13,400				1,570	900				

Morgan—														
Fort Morgan	Sugar beets, cattle, sheep, hay, hogs	1914	105	187	20,837	16,872	4,868	2,144	2,724	1,682	10.6		510	182
Wiggins	Livestock	1915	67		7,128				643	287				
Pueblo—														
Arkansas	Alfalfa, sugar beets, cattle, horses	1914	99	83	12,246	10,683	2,455	1,058	1,397	785	7.2		512	116
Do	do	1915	48		13,361				1,468	800				
Rio Grande—Monte Vista.	Potatoes, hogs, wheat, sheep, oats, peas.	1914	78	334	26,687	23,397	5,050	1,964	3,086	1,752	9.2		628	145
Weld—														
Lucerne	Sugar beets, sheep, potatoes, alfalfa	1914	236	136	24,000	20,760	5,529	2,742	2,787	1,587	8.8		670	
Do	do	1915	182	134	24,450	20,904	6,881	2,963	3,918	2,696	13.5		614	135
Do	Potatoes, sugar beets, sheep, cattle, wheat.	1921	150	119	33,212	29,263	6,050	3,769	2,881	1,220	5.8	505	953	136
Do	do	1922	20	139	35,394	31,517	11,653	10,914	739	−1,031	−.5	331	918	138
Do	do	1923	22	160	38,431	34,586	14,756	11,708	3,048	1,126	5.5	348	944	237
Do	do	1924	20	171	40,544	35,780	19,548	15,445	4,103	2,076	7.9	351	886	277
Connecticut:														
Fairfield—Danbury	Dairy	1915	46		10,100		2,169	1,258	911	406				
Hartford—Farmington	do	1915	30		11,174		3,018	1,945	1,073	514				
Litchfield—														
Bridgewater	Tobacco, dairy, cattle	1914	66	160	14,216	10,187	3,691	2,188	1,503	792	6.9		515	182
Cornwall	Dairy	1915	24	219	13,141	9,640	2,730	1,735	995	338				
New Haven—Cheshire	do	1915	38	95	11,757	9,030	3,199	2,148	1,051	463				
New London—														
Lebanon	Dairy, cattle, work off farm	1913	67	121	7,300	5,273	1,918	1,442	476	111	.2		461	66
Do	Dairy	1914	40	104	6,838	4,663	2,246	1,195	1,051	709				
Tolland and Windham	Dairy, work off farm, cattle, poultry	1913	57	160	8,669	6,267	2,540	1,743	797	364	4.5		403	102
Windham—Putman	Dairy	1915	41		7,060		1,681	961	720	367				
Delaware:														
Kent—Wyoming	Apples, peaches, pears, poultry, wheat	1914	55	120	17,088	14,945	3,164	1,971	1,193	339	5.3		293	65
New Castle—														
Middletown	Wheat, dairy, corn, sugar corn, cattle	1914	65	218	20,605	16,600	4,629	2,186	2,443	1,413	10.7		232	42
Do	do	1915	62	216	20,737	16,609	3,145	2,043	1,102	65	3.9		299	29
Do	Wheat, dairy, corn, sugar corn	1924	65	216	22,832	18,304	4,904	3,208	1,696	554	4.5	540	663	210
Sussex—														
Milton	Poultry, tomatoes, corn, wheat, work off farm, dairy.	1914	68	112	5,982	4,836	846	488	358	59				91
Lewes	Poultry, wheat, dairy, corn, tomatoes, potatoes, hogs.	1922	86	89	8,220	6,699	1,160	903	257	−154	−1.6	419	391	168
Seaford	Poultry, cantaloupes, tomatoes, sweet potatoes.	1923	91	88	8,036	6,457	1,995	1,410	585	183	1.0	509	502	173
Florida:														
Alachua—														
Gainesville	Cucumbers, other truck crops, hogs	1923	90	228	8,090	6,378	2,534	1,634	900	496	7.6	397	285	144
Do	do	1924	133	211	7,774	6,239	1,702	1,826	−124	−513	−5.3		291	122
Levy—Williston	Cucumbers, hogs	1923	120	170	8,111	6,461	3,087	1,712	1,375	969	13.9	451	251	133
Hillsboro—														
Plant City	Strawberries, potatoes, oranges, cabbage, string beans.	1917	100	52	6,253	5,115	2,618	1,242	1,376	1,063	14.5		470	141
Do	Strawberries, string beans, potatoes, oranges, cabbage, cucumbers.	1918	100	53	6,681	5,336	2,241	1,478	763	429	3.5	432	532	181

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Florida—Continued.														
Hillsboro—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Plant City	Strawberries, oranges, string beans, tomatoes, potatoes.	1919	100	54	7,655	6,128	2,336	1,431	905	522	3.1	499	670	166
Do	Strawberries, cabbage, oranges, potatoes, string beans, tomatoes.	1920	100	54	8,306	6,845	3,556	1,991	1,565	1,150	10.0	520	734	148
Do	Strawberries, oranges, tomatoes, string beans, cucumbers.	1921	100	53	8,615	7,177	3,565	2,092	1,473	1,042	9.0	451	695	152
Do	Strawberries, string beans, oranges, tomatoes, potatoes.	1922	100	52	9,662	8,182	3,076	2,228	848	365	2.3	420	624	177
Polk—														
Winter Haven	Oranges, grapefruit, tangerines	1917	100	40	20,656	19,553	2,700	1,487	1,213	180	4.1	-------	364	7
Do	do	1918	100	41	21,702	20,429	6,011	2,082	3,929	2,844	16.4	-------	380	9
Do	do	1919	100	42	28,698	27,082	8,512	2,823	5,689	4,254	18.0	230	529	20
Do	do	1920	100	41	35,906	33,968	10,301	3,621	6,680	4,885	17.0	-------	558	5
Do	do	1921	100	41	40,512	38,493	5,580	3,507	2,023	−3	3.7	-------	531	16
Do	do	1922	100	41	41,776	39,808	9,044	3,428	5,616	3,527	12.2	263	509	18
Georgia:														
Brooks	Cotton, hogs, watermelons, corn	1914	106	145	8,992	6,788	2,195	1,536	659	209	2.3	584	405	101
Bullock	Cotton, hogs, corn, melons	1920	50	144	14,862	12,457	1,355	1,758	−403	−1,146	−6.5	-------	563	184
Greene	Cotton	1918	78	280	14,426	12,595	5,217	2,267	2,950	2,229	15.9	-------	657	177
Do	do	1919	74	224	14,959	12,029	4,543	2,728	1,815	1,067	8.0	-------	624	226
Floyd	Cotton, cattle, work off farm, corn	1920	44	107	9,432	7,676	1,111	1,240	−129	−601	−7.1	-------	539	257
Laurens	Cotton	1918	85	173	13,090	11,160	4,616	2,076	2,540	1,886	15.3	-------	533	192
Do	Cotton, corn, hogs	1919	75	166	11,495	9,145	2,187	1,873	314	−261	−1.6	-------	497	201
Mitchell	Cotton, peanuts, hogs, corn	1919	50	267	18,021	14,100	4,987	3,412	1,575	674	5.3	-------	617	106
Sumter—														
White	Cotton	1913	317	367	15,258	12,710	4,357	2,814	1,543	780	7.2	-------	447	44
Colored	do	1913	217	109	3,845	3,288	1,312	720	592	400	10.0	-------	207	172
White	Cotton, hogs, corn	1918	336	387	24,227	20,367	7,823	4,378	3,445	2,234	11.7	690	615	74
Colored	Cotton	1918	214	123	7,004	5,781	2,933	1,336	1,597	1,247	17.6	471	367	318
White	Cotton, corn, hogs, peanuts	1924	97	289	15,717	13,338	4,357	3,273	1,084	298	2.8	707	651	77
Idaho:														
Twin Falls	Wheat, potatoes, beans, sugar beets, alfalfa.	1919	200	73	30,521	27,170	5,035	2,287	2,748	1,222	6.1	516	890	119
Do	Wheat, sugar beets, potatoes, beans, cattle.	1920	192	71	29,023	25,967	3,736	2,431	1,305	−146	.8	580	1,058	179
Do	Wheat, potatoes, sugar beets, cattle, clover seed, beans.	1921	181	71	21,093	18,731	2,756	2,018	738	−317	−.2	534	786	82
Do	Beans, wheat, potatoes, sugar beets, clover seed, cattle.	1922	87	73	20,837	18,451	3,356	1,934	1,422	380	3.0	507	796	95

Idaho and Washington:														
Nez Perce and Asotin	Apples, peaches, lettuce, tomatoes, cherries, hogs, hay.	1914	10	22	11,414	10,800	1,028	714	314	−257				39
Latah and Whitman—														
Palouse	Wheat, oats, cattle, hogs	1914	246	319	27,450		3,787	1,430	2,357	985	7.0		441	105
Do	Wheat	1919	226	301	46,183	41,510	8,659	4,052	4,607	2,298	7.7	608	1,037	263
Do	do	1920	241	333	51,900	46,860	6,539	4,850	1,689	−906	1.2	573	1,085	278
Do	do	1921	250	327	46,518	42,386	4,130	3,725	405	−1,921	−1.1	480	918	205
Illinois:														
Adams, Hancock, and McDonough.	Hogs, grain, cattle, poultry	1924	51	202	43,653	37,292	4,784	1,877	2,907	724	5.3		577	209
Cass and Menard	Hogs, cattle, corn, wheat	1910	144	228	45,280	41,051	4,427	1,532	2,895	631	5.5		393	85
Champaign	Corn, oats, dairy, wheat	1915	81	212	55,046	50,661	5,523	1,640	3,883	1,131	5.6		808	88
Champaign, Ford, and McLean.	Grain, hogs, cattle	1924	52	223	54,118	47,874	6,576	2,002	4,574	1,868	7.4		551	113
Clark, Coles, Douglas, Moultrie.	Grain, hogs, dairy, cattle	1924	32	200	40,366	35,884	5,528	1,694	3,834	1,816	8.2		518	176
Clinton	Cattle, grain, poultry, hogs	1922	25	164	19,367	15,402	2,187	1,078	1,109	141	1.7		782	
Do	Dairy, grain, poultry, cattle, hogs	1923	21	163	20,302	16,187	2,867	1,451	1,416	401	4.5		494	494
Do	do	1924	58	164	17,212	13,390	2,604	1,296	1,308	447	4.7		494	355
Edwards, Lawrence, Richland, and Wabash.	Grain, hogs, dairy, poultry, cattle	1924	41	174	20,085	16,569	3,177	1,271	1,906	902	7.2		452	235
Greene, Jersey, and Macoupin.	Hogs, dairy, grain, poultry, cattle	1924	41	174	25,401	20,812	3,245	1,493	1,752	482	4.6		576	230
Grundy	Crops, cattle, hogs	1915	61	181	39,670		3,379	1,277	2,102	118				
Henry, Marshall, Putman, Whiteside.	Grain, hogs, cattle, dairy	1924	41	208	46,855	40,227	6,079	2,011	4,068	1,725	7.4		591	255
Jo Daviess, Ogle, and Stephenson.	Hogs, dairy, cattle, poultry, grain	1924	51	180	31,448	25,896	3,251	1,496	1,755	183	3.8		574	266
Kane	Dairy, cattle, hogs, wheat	1915	60	184	37,812	31,886	4,969	2,198	2,771	880	6.2		442	234
La Salle	Grain, hogs, dairy, cattle	1924	34	247	67,670	59,516	8,079	2,589	5,490	2,106	7.2		604	261
Logan, Macon, McLean, and Tazewell.	Grain, hogs, dairy	1924	30	232	59,691	52,533	7,298	2,409	4,889	1,904	7.3		551	208
Monroe and Randolph	Grain, dairy, poultry, hogs	1924	23	175	16,207	12,803	2,644	1,294	1,350	540	5.0		544	363
Tazewell	Corn, oats, hogs, cattle horses	1914	67	155	46,230	41,725	3,417	1,188	2,229	−82	3.6		565	74
Do	Crops, hogs, cattle, horses	1915	50	174	50,866		4,262	1,240	3,022	479				
Do	Crops, hogs, cattle	1916	40	183	54,846		5,088	1,427	3,661	919	6.8			
Wabash	Grain, hogs, cattle, poultry	1922	36	170	24,751	21,152	2,338	1,212	1,126	−112	2.7		465	
Do	Grain, hogs, poultry, dairy, cattle	1923	24	163	22,595	18,855	2,510	1,231	1,279	149	3.5		491	161
Will	Grain, dairy, hogs, cattle, poultry	1924	34	188	42,807	36,150	5,409	2,143	3,266	1,126	6.3		585	237
Woodford	Grain, hogs, cattle	1916	50	231	61,833		5,901	1,676	4,225	1,133				
Do	do	1917	19	199	52,723	46,315	8,765	1,566	7,199	4,563	12.8		427	
Do	do	1918	19	199	57,587	46,459	7,819	2,013	5,806	2,927	9.3		463	
Do	do	1919	19	201	59,034	46,933	7,669	1,960	5,709	2,757	8.8		529	
Do	Hogs, grain, cattle, poultry	1920	19	197	57,624	46,047	3,852	2,499	1,353	−1,528	1.3		596	
Do	do	1921	19	201	55,570	46,945	2,866	2,315	551	−2,227	(1)		552	
Do	Grain, hogs, cattle, poultry	1922	99	233	65,870	59,145	4,821	2,203	2,618	−675	3.2		525	
Do	Grain, hogs, cattle, poultry, dairy	1923	95	204	55,411	48,067	4,353	2,029	2,324	−447	3.1		579	
Do	Grain, hogs, cattle	1924	101	208	58,565	51,355	6,779	1,961	4,818	1,890	7.2		580	199

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
			Number	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Illinois and Iowa:														
Warren and Henry	Hogs, corn, cattle	1921	53	174	51,852	45,682	3,863	2,229	1,634	−959	2.0		577	119
Do	Hogs, cattle, corn, wheat, oats	1922	42	171	47,762	42,180	5,152	2,358	2,794	406	4.7		564	63
Indiana:														
Adams	Dairy, hogs, small grains	1918	34	122	18,203	16,485	4,630	1,998	2,632	1,722				
Allen	Dairy, small grains, hogs	1917	12	115	20,395	17,183	3,697	908	2,789	1,769				112
Do	do	1918	12	97	16,111	12,800	3,423	1,485	1,938	1,132				
Bartholomew	Hogs, wheat, cattle, dairy, poultry	1914	69	125	10,089	8,054	1,474	730	744	240				128
Do	Cattle, hogs, dairy, wheat, corn, poultry, hay.	1915	63	120	9,705	7,843	1,114	521	593	108	3.0		299	99
Do	Hogs, dairy, wheat, cattle, corn, poultry.	1916	63	123	12,784	10,509	1,847	629	1,218	579	7.0		321	104
Do	Hogs, wheat, dairy, cattle, corn, poultry.	1917	43	123	10,070	7,756	1,969	671	1,298	794	10.0		286	60
Do	do	1918	18	162	14,611	10,955	3,361	1,717	1,644	913				
Benton	Corn, oats, hogs, cattle	1914	49	206	44,780	40,927	3,370	1,357	2,013	−226				67
Do	Oats, corn, hogs, cattle	1915	53	210	45,728	42,028	4,753	1,130	3,623	1,337	7.3		290	53
Clarke	Dairy, cattle, hogs work off farm, corn, poultry.	1916	49	130	7,204	5,331	1,341	571	770	410	7.0		268	53
Do	do	1917	15	114	7,621	5,416	2,416	859	1,557	1,176				
Do	do	1918	5	118	9,636	8,543	2,893	1,545	1,348	866				
Clinton	Hogs, oats, wheat, corn, cattle	1910	100	116	19,055	16,977	1,911	624	1,287	334	5.1		312	48
Do	Hogs, corn, cattle, oats, clover seed	1913	100	124	24,936	22,672	2,265	762	1,503	256	4.7		325	85
Do	Hogs, corn, oats, cattle, wheat	1914	100	126	25,724	23,084	2,190	860	1,330	44	3.9		332	70
Do	Hogs, corn, oats, wheat, cattle	1915	100	129	26,436	23,728	2,408	899	1,509	187	4.4		338	78
Do	Hogs, corn, oats, cattle	1916	100	130	26,598	23,888	3,118	978	2,140	810	6.7		349	79
Do	Hogs, oats, cattle, corn	1917	100	130	27,822	24,571	3,615	1,372	2,243	852	6.6		402	89
Do	Hogs, oats, cattle, wheat, corn	1918	100	127	31,135	27,720	4,578	1,600	2,978	1,421	7.9	495	527	120
Do	Hogs, corn, wheat, oats, cattle	1919	100	130	32,618	28,702	4,655	1,881	2,774	1,143	6.5	490	657	121
Decatur	Hogs, small grains, cattle, corn	1917	25	158	22,672	18,225	6,049	1,654	4,395	3,261				65
Do	do	1918	10	209	26,712	19,062	8,782	5,508	3,274	1,938				
DeKalb	Hogs, wheat, dairy, sheep, hay	1917	6	111	14,306	11,050	3,683	1,536	2,147	1,432				24
Dubois	Wheat, dairy, cattle, poultry, hogs	1914	70	135	8,141	6,787	1,217	568	649	242				121
Do	do	1915	42	145	9,750	8,057	1,290	609	681	193				126
Do	Dairy, hogs, cattle, wheat, poultry	1916	21	152	10,155	8,236	1,614	606	1,008	500				243
Gibson	Hogs, cattle, dairy, poultry	1914	9	126	10,314	8,133	1,738	1,006	732	216				171
Do	Hogs, cattle, dairy, hay, poultry, wheat, work off farm.	1915	80	97	8,451	6,882	1,195	558	637	214	2.8		404	38
Do	Hogs, cattle, poultry, dairy, horses, hay.	1916	65	95	7,930	6,258	1,319	465	854	458	6.6		329	21
Do	Hogs, dairy, poultry, wheat, hay	1917	38	87	7,865	6,047	1,829	572	1,257	864				16
Do	do	1918	13	91	8,025	6,110	2,723	937	1,786	1,385				

Grant	Hogs, cattle, corn, dairy, poultry	1916	79	99	19,273	16,151	2,757	745	2,012	1,048	8.9		300	52
Do	Hogs, small grains, corn	1917	14	91	20,242	16,108	4,354	1,127	3,227	2,215				
Greene	Hogs, cattle, wheat, dairy, poultry	1914	30	247	18,022	14,843	2,254	1,039	1,215	314				48
Harrison	Dairy, poultry, wheat	1917	18	92	5,148	3,533	1,413	502	911	654				41
Hendricks	Hogs, small grain, corn	1917	13	132	19,606	15,165	4,856	1,516	3,340	2,300				72
Henry	Hogs, cattle, wheat	1915	46	38	23,747	18,941	3,474	1,744	1,730	543	5.0		531	53
Jefferson	Dairy, poultry, small grains, tobacco	1916	77	168	1,0164	7,615	1,735	761	974	466				64
Do	do	1917	22	122	7,620	5,365	2,161	952	1,209	828				55
Johnson	Hogs, small grains, corn	1917	20	149	25,850	23,499	6,559	1,694	4,865	3,573				
LaPorte	Dairy, small grains	1914	8	169	30,514	10,045	4,154	2,177	1,977	451				125
Lawrence	Hogs, cattle, wheat, dairy, poultry	1914	15	175	18,242	15,230	3,124	2,294	830	−82				118
Do	Cattle, hogs, dairy, horses, poultry, wheat.	1915	65	199	13,863	11,059	1,902	872	1,030	337	5.1		319	51
Do	Dairy, poultry, wheat	1916	42	200	14,938	10,623	2,825	910	1,915	1,168				26
Do	do	1917	29	182	14,535	10,754	3,747	1,261	2,486	1,759				32
Do	do	1918	9	153	11,936	9,488	5,050	2,548	2,502	1,905				33
Madison	Hogs, corn, cattle, poultry, dairy	1913	60	98	16,061	13,854	2,171	824	1,347	544				63
Do	Hogs, cattle, wheat, corn, horses, dairy.	1914	54	113	18,513	15,715	2,304	820	1,484	558				59
Do	Hogs, corn, small grain	1915	26	105	16,912	14,412	2,223	702	1,521	675				60
Marion	Lettuce, tomatoes, cucumbers	1917	25	11	13,335	12,199	3,122	3,031	91	−576	−5.0		755	423
Do	do	1918	25	12	13,101	11,907	4,035	3,164	871	216	.5		806	679
Montgomery	Hogs, corn, oats, cattle, wheat	1915	77	151	25,909	23,084	2,849	889	1,960	665	6.0		397	62
Do	Hogs, corn, cattle, oats	1916	42	167	29,847	25,855	4,325	1,274	3,051	1,559				23
Do	Hogs, corn, small grains	1917	21	160	28,647	23,862	6,550	1,944	4,606	3,174				2
Orange	Dairy, wheat, hogs, poultry	1917	22	167	13,884	10,784	3,642	1,392	2,250	1,556				43
Pulaski	Cattle, hogs, poultry, corn, wheat, dairy.	1914	62	137	13,827	11,585	1,715	832	883	192				108
Do	Cattle, hogs, wheat, corn, poultry, dairy.	1915	77	134	15,051	12,541	1,746	712	1,034	281	5.0		285	80
Do	Hogs, cattle, wheat, corn, poultry, dairy.	1916	70	138	16,570	13,635	2,041	761	1,280	452	6.2		256	64
Do	Small grains, dairy, hogs	1917	59	154	17,877	13,547	3,521	994	2,527	1,633				36
Spencer	Dairy, hogs, wheat, cattle, poultry, hay.	1915	46	143	14,464	12,568	1,710	844	866	143	4.5		213	99
Do	Wheat, dairy, poultry	1916	20	154	16,795	13,220	3,099	1,158	1,941	1,101				134
Do	do	1917	9	117	12,289	10,267	2,762	904	1,858	1,244				140
Stark	Small grains, dairy, poultry, truck	1914	7	190	23,902	19,986	2,734	901	1,833	638				131
Do	Wheat, hogs, corn, oats, potatoes, cattle, dairy.	1915	59	150	17,426	15,044	1,666	825	841	−30	2.7		364	117
Do	Wheat, hogs, cattle, dairy, oats, corn	1916	41	149	17,343	14,876	1,816	652	1,164	297	5.0		293	159
Do	Small grains, dairy, poultry, truck	1917	22	142	17,414	14,163	2,162	819	1,343	472				116
Sullivan	Hogs, cattle, wheat	1914	10	266	30,602	26,305	3,260	1,729	1,531	1				271
Tippecanoe	Small grains, cattle, hogs	1919	74	207	55,600	49,971	6,566	2,947	3,619	839	5.4		609	261
Do	do	1920	82	229	58,121	52,936	4,082	3,506	576	−2,330	−.2		671	213
Do	do	1921	82	220	41,878	38,171	3,295	2,340	955	−1,139	.7		642	66
Wabash	Hogs, wheat, cattle, oats, poultry, dairy.	1915	53	129	23,423	20,108	2,403	1,006	1,397	226	4.2		420	44
Do	Hogs, cattle, corn, wheat, oats	1916	49	128	22,990	19,530	2,994	729	2,265	1,115	8.3		367	44
Do	Hogs, cattle, small grains	1917	40	122	21,444	18,076	4,142	1,051	3,091	2,019				66
Washington	Hogs, dairy, cattle, wheat, poultry	1914	59	118	8,566	6,715	1,467	886	581	153				

TABLE 652.—*Farm business surveys: Summaries 71,515 of farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Indiana—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Washington	Hogs, dairy, cattle, wheat, poultry, horses.	1915	53	108	7,637	5,934	1,395	571	824	442				66
Do	Hogs, dairy, cattle, poultry, horses	1916	44	117	7,066	4,995	1,563	591	972	619				40
Do	Dairy, poultry, small grains	1917	30	103	7,489	6,030	2,491	769	1,722	1,348				10
Wells	Hogs, small grains, hay, dairy, poultry	1914	7	154	32,301	28,289	3,793	1,439	2,354	739				113
Indiana and Michigan: Several counties, northern Indiana and southern Michigan.	Onions, peppermint, livestock, hay, grain, celery.	1914	100	114	16,910	14,668	3,183	1,265	1,918	1,072	8.7		448	
Iowa:														
Blackhawk	Hogs, dairy, cattle, corn, oats	1914	67	163	38,641	34,416	3,175	934	2,241	309	4.7		430	114
Do	Hogs, dairy, cattle, oats	1915	54	167	40,842	35,820	2,967	1,337	1,630	−412	3.2		322	97
Blackhawk, Tama, and Grundy.	Cattle, hogs, corn, oats	1913	905	207	46,027	40,717	3,615	1,008	2,607	306	4.8		402	123
Bremer and Fayette	Dairy, hogs, poultry, cattle	1923	239	150	28,684	24,089	3,348	1,555	1,793	359	3.3	556	857	220
Calhoun	Corn, oats, hogs, cattle	1922	202	181	45,620		3,742	1,709	2,033	−248	2.6	520	824	151
Clay	Hogs, cattle, oats, dairy, horses	1915	59	176	35,722	31,757	2,298	826	1,472	−314				80
Do	Hogs, corn, cattle, oats, dairy	1916	36	161	33,386	29,600	3,836	772	3,064	1,395				
Dickinson	Hogs, cattle, oats, corn	1915	35	223	33,125	28,885	2,617	946	1,671	15	4.2		265	160
Emmet	Hogs, oats, cattle, dairy	1915	57	228	37,869	33,593	2,819	1,156	1,663	−230				108
Do	Hogs, corn, oats, cattle	1916	50	240	40,873	36,179	5,608	1,088	4,520	2,476				124
Greene	Corn, hogs, oats, cattle	1914	68	183	35,302	31,707	3,261	692	2,569	804	6.1		417	84
Do	Hogs, corn, cattle, oats	1915	52	181	35,667	31,753	2,726	748	1,978	195	4.7		302	86
Greene and Guthrie	Hogs, corn, cattle, oats	1910	227	186	23,834	20,608	2,114	540	1,574	382	5.0		382	70
Harrison	Hogs, cattle, corn	1916	66	147	25,527	20,908	3,394	922	2,472	1,196	8.3		347	
Henry	Corn, hogs, cattle, oats	1913	62	171	36,689	33,300	2,564	639	1,925	93				121
Do	Corn, hogs, oats, cattle	1915	49	168	37,195	33,435	3,455	797	2,658	798	6.1		384	114
Do	Hogs, corn, cattle	1916	41	166	36,699	32,640	3,650	888	2,762	927	6.5		392	122
Humboldt	Hogs, corn, cattle, oats, poultry, dairy	1922	74	190	49,880		4,069	2,170	1,899	−595	2.2	687	819	247
Do	do	1923	41	199	49,859		3,754	2,344	1,410	−1,083	.9		947	111
Montgomery	Hogs, cattle, corn, wheat	1914	55	195	36,949	32,436	3,158	813	2,345	998	5.3		385	101
Polk	Hogs, dairy	1922	169	150	34,873	31,913	3,746	1,618	2,128	384	3.7	509	825	174
Pottowattomie	Hogs, cattle	1919	19	277	95,116	83,963	10,940	7,200	3,740	−1,016	2.7		1,218	207
Do	Hogs, cattle, wheat	1920	33	259	99,692	89,337	9,786	5,251	4,535	−450	3.4		1,098	218
Do	do	1921	50	259	80,677	71,310	5,295	4,720	575	−3,459	−.6		1,055	207
Do	Hogs, cattle	1922	75	230	61,729	54,462	5,979	3,156	2,823	−203	3.6		587	162
Do	Cattle, hogs	1923	68	233	59,412	51,303	7,043	4,435	2,608	−363	3.4		612	157
Scott	Hogs, barley, cattle, corn	1914	70	144	37,185	33,069	3,006	816	2,190	331				182
Do	Hogs, cattle, barley, wheat	1915	52	152	41,666	36,907	3,975	1,270	2,705	622				201
Do	do	1916	50	154	40,440	35,906	5,409	1,285	4,124	2,102				134

Tama	Hogs, cattle, corn, oats, barley	1918	209	219	62,560	55,526	7,386	2,307	4,579	1,401	5.4	654	1,161	216
Do	Hogs, cattle, oats, corn, poultry, dairy	1921	237	211	57,989		3,418	2,851	567	−2,332	−.7	642	994	294
Warren	Hogs, cattle, wheat, corn, poultry	1915	832	156	21,083	18,319	2,164	710	1,454	370	5.3		303	85
Do	do	1918	183	177	32,080	27,738	3,863	1,628	2,235	631	5.0	570	647	167
Do	Hogs, wheat, cattle, poultry, dairy	1921	229	177	34,841		2,563	1,602	961	−781	.2	645	889	145
Kansas:														
Allen	Hogs, cattle, hay, dairy	1913	100	170	13,660	11,589	1,568	951	617	−96	2.0		338	62
Do	Hogs, cattle, corn, hay, dairy, horses, poultry.	1914	89	176	14,238	11,827	2,155	720	1,435	723	6.3		535	105
Do	Hogs, cattle, corn, dairy, poultry	1915	97	150	13,608	11,072	1,280	769	511	−109				
Do	do	1916	87	167	13,758	11,381	1,677	786	892	204		267		
Cowley	Wheat, dairy, hogs, cattle, horses	1914	225	168	13,475	11,775	1,960	730	1,170	496	4.7		537	115
Do	Wheat, dairy, hogs, cattle, corn, work off farm, horses.	1915	178	169	13,722	11,813	1,535	672	863	177	2.0		590	96
Do	Wheat, dairy, hogs, cattle, corn	1916	124	174	14,366	12,134	2,017	852	1,165	447		341		
Finney	Wheat, cattle, hogs	1922	57	1,063	26,203	22,102	3,356	1,994	1,362	52	2.6	497	674	177
Graham and Norton	Wheat, corn, cattle, hogs, horses, poultry, dairy.	1915	71	388	14,032	10,982	2,099	775	1,324	622				97
Harvey	Wheat, hogs, cattle, rye	1914	69	225	22,562	19,661	4,166	1,461	2,705	1,577	9.5		568	146
Do	Wheat, hogs, cattle, corn, dairy, horses	1915	71	225	21,760	19,200	2,112	941	1,171	83	2.8		564	101
Jackson	Hogs, cattle, poultry	1916	250	161	17,614	14,934	2,185	898	1,287	406		414		
Do	do	1917	201	165	18,441	15,422	3,544	1,066	2,478	1,556		479		
Jewell	Hogs, wheat, cattle, corn, horses	1914	70	231	14,443	12,271	1,678	741	937	215	3.0		499	109
Browns Creek	Wheat, work off farm, corn, hogs, poultry, cattle.	1915	53	181	13,270	11,422	2,234	660	1,574	910	7.4		588	30
Leavenworth	Dairy, wheat, cattle, hogs	1914	75	195	17,533	15,064	3,014	1,949	1,065	188				100
Do	Dairy, cattle, hogs, wheat	1915	78	175	16,162	13,681	1,925	984	941	133				91
Lyon	Cattle, hogs, hay, horses, dairy	1914	55	377	28,139	22,594	4,144	1,731	2,413	1,006	5.6		829	183
Do	Cattle, hay, dairy, wheat, corn, poultry.	1915	84	228	20,526	16,383	2,109	1,209	900	−126	.6		774	102
Miami	Hogs, cattle, wheat, poultry, horses, corn.	1915	62	219	19,178	16,183	1,720	1,048	672	−287	.4		595	74
Montgomery	Wheat, cattle, dairy, hogs, hay, poultry, work off farm, horses.	1915	56	201	13,971	11,665	1,536	820	716	17	1.7		482	17
Pottowattomie	Wheat, hogs, cattle, poultry, rye, dairy.	1914	33	204	15,709	13,962	1,651	741	910	125	1.5		673	93
Reno	Wheat, cattle, corn, hogs, dairy, horses	1915	93	302	26,150	22,223	3,359	1,464	1,895	587	4.8		633	
Sherman and Thomas	Wheat, cattle, hogs, dairy	1922	82	1,069	46,424	41,689	4,279	2,576	1,703	−618	2.1	667	709	221
Kentucky:														
Christian	Tobacco, livestock	1915	342		17,029	13,535	2,896	1,688	1,208	357		500		81
Fleming and Mason	Tobacco, hogs, cattle	1922	241	152	20,762	18,570	3,714	1,941	1,773	735		332		163
Hardin, Oldham, Shelby and Spencer.	Dairy	1915–1916	162	196	17,559	14,218	3,116	1,439	1,677	799				
Henderson and Union	Hogs tobacco, corn, cattle, wheat, hay	1923	270	202	17,270	14,646	2,696	1,702	994	130		508		
Jefferson	Dairy truck crops	1914	100	212	29,091	26,901	4,028	2,178	1,850	395	3.5		818	132
Larue	Tobacco, cattle, hogs	1922	84	150	10,574		1,914	938	976	447				
Madison, Mason and Scott.	Tobacco, livestock	1913	178	310	37,819	32,585	6,050	3,464	2,586	695	5.1		672	126
Louisiana:														
Caddo	Cotton	1914	40	989	72,247	59,335	12,156	10,128	2,028	−1,584	.6		1,612	30
Claibourne—														
White	Cotton, dairy, cattle, corn	1914	84	206	4,671	3,210	936	809	127	−107	−5.6		388	122
Colored	Cotton	1914	14	116	2,504	1,806	568	518	50	−75	−9.1		278	258

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Louisiana—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Several southern counties.	Cane, corn, hay	1923	100	187	18,570	13,337	3,998	3,438	560	−368				
Maine:														
Androscoggin	Dairy, fruit	1921	45		7,156	4,952	2,260	1,524	736	378				
Do	Dairy, poultry	1922	30		6,769	4,720	2,222	1,606	616	279				
Do	do	1923	34		7,805	5,548	3,168	2,219	949	559				
Aroostook	Potatoes	1914	98	154	17,429	14,258	2,805	2,945	−140	−1,011	−3.8		531	124
Cumberland	Dairy, poultry, cattle, work off farm, apples, hay.	1913	100	136	6,680	4,732	1,653	1,083	570	236	2.2		424	78
Do	Dairy, fruit	1921	21		7,561	5,713	2,360	1,516	844	466				
Do	Dairy, poultry	1923	8		7,454	5,420	3,322	2,345	977	604				
Franklin	Apples, dairy, cattle, work off farm, woodlot, sweet corn, poultry.	1914	106	160	6,090	4,471	1,409	858	551	247	2.2		416	99
Do	Dairy, cattle, apples, poultry, potatoes, sweet corn, hay, work off farm.	1915	33	140	5,819	4,206	1,173	645	528	237	1.7		428	109
Do	Dairy, sugar corn	1919	50		6,978	4,704	3,004	1,688	1,316	967				
Do	Dairy, poultry	1920	36		7,019	4,737	2,949	1,864	1,085	734				
Do	Dairy, apples	1921	25		6,580	4,587	2,278	1,406	872	543				
Do	Dairy, sugar corn	1922	30							345				
Do	do	1923	23		7,041	5,033	2,475	1,441	1,034	682				
Hancock	Dairy, poultry, potatoes, cattle, work off farm, hogs.	1914	73	120	3,587	2,313	1,070	790	280	101	−4.0		425	85
Do	Dairy, potatoes, poultry, cattle, woodlot, work off farm.	1915	33	129	3,898	2,456	1,449	787	662	467	6.6		405	77
Do	Dairy, poultry	1922	17			2,626				554				
Do	do	1923	13		3,768	2,620	1,850	1,075	775	587				
Kennebec	Dairy, apples, cattle, poultry, potatoes, work off farm.	1914	83	113	6,016	4,379	1,491	1,005	486	185	1.5		396	86
Do	Dairy, apples, cattle, poultry, work off farm, hogs.	1915	61	115	6,403	4,593	1,453	866	587	267	2.9		403	50
Do	Dairy, apples	1921	24		8,576	6,056	2,317	1,377	940	511				
Do	Dairy, poultry	1922	30		6,943	4,988	1,861	1,170	691	344				
Do	do	1923	28		6,982	5,028	2,441	1,454	987	638				
Knox-Lincoln	Dairy, poultry	1921	17		5,006	3,533	1,773	1,233	540	290				
Do	do	1922	21			3,719				264				
Do	do	1923	12		5,033	3,414	2,076	1,240	836	584				
Oxford	Dairy, poultry	1922	33		6,702	4,757	2,182	1,478	704	369				
Do	do	1923	38		6,090	4,638	2,041	1,324	717	413				
Penobscot	Potatoes, dairy, cattle, poultry, hogs	1914	53	150	6,100	4,172	1,396	862	534	229	2.0		413	77
Do	Potatoes, dairy, cattle, hogs, poultry, work off farm.	1915	66	155	6,237	4,067	1,767	990	777	465	5.7		420	45

Do	Dairy, potatoes	1919	19		5,158	3,611	3,295	1,621	1,674	1,416					
Do	do	1921	22		6,509	4,075	2,445	1,758	687	362					
Do	Dairy, poultry	1922	20		6,305	4,096	2,146	1,503	643	328					
Do	do	1923	10		6,882	4,424	3,049	1,960	1,089	745					
Piscataquis	Dairy, potatoes	1921	29		6,884	4,914	2,009	1,304	705	361					
Do	do	1922	16		7,741	5,727	2,001	1,501	500	113					
Somerset	Dairy, poultry	1922	20		5,662	4,002	1,737	1,175	562	279					
Do	Dairy, lumber	1923	14		6,489	4,599	2,509	1,494	1,015	691					
York	Dairy, poultry	1921	21		7,868	5,230	3,284	2,178	1,106	713					
Do	do	1922	21		7,252	5,107	2,404	1,599	805	442					
Do	do	1923	18		6,155	4,510	2,198	1,272	926	618					
Maryland:															
Carrol and Frederick	Dairy, crops, livestock	1918	94	148	27,885	20,519	7,502	4,454	3,048	1,654					
Frederick	Cattle, wheat, sugar corn, corn, poultry	1914	239	120	16,783	13,756	2,963	1,361	1,602	763	7.4		353	108	
Do	do	1915	150	140	20,247	16,426	2,713	1,333	1,380	368	4.9		389	102	
Prince George, near Washington, D. C.	Truck crops, small fruits	1916	152	26	5,839	5,170	1,743	1,043	700	408	6.0		351	57	
Massachusetts:															
Barnstable—Falmouth	Strawberries, turnips	1921	14	14	5,324	4,929	2,105	951	1,154	888					
Berkshire—															
Sheffield	Dairy	1920	39	177	15,452	10,739	3,737	2,801	936	163					
Do	do	1921	55	196	13,858	9,682	3,460	2,596	864	171					
Do	do	1922	48	190	13,406	9,522	3,600	2,609	991	321					
Do	do	1923	52	188	12,170	8,485	3,801	2,368	1,433	825					
Hancock	do	1923	23	260	8,056	5,783	2,942	1,711	1,231	828					
Bristol	Dairy, work off farm, poultry, truck crops, potatoes.	1913	37	87	7,622	5,588	3,062	1,975	1,087	706					53
Do	Dairy, poultry, work off farm, potatoes	1914	75	75	8,101	5,773	2,670	1,795	875	470	2.4		681	57	
Do	Dairy, work off farm, poultry, potatoes	1915	42	90	9,278	6,517	3,075	1,952	1,123	659				76	
Acushnet	Dairy, poultry	1921	12	71	12,413	10,125	3,837	2,730	1,107	486					
Essex	Dairy, work off farm, apples, truck crops, poultry.	1914	90	118	9,601	7,093	2,548	1,660	888	498	3.5		549	102	
Do	Dairy, work off farm, apples, poultry, truck crops.	1915	68	99	8,735	6,416	2,190	1,561	629	192	1.9		464	84	
Do	Poultry, truck crops	1921	9	51	14,338	11,931	5,716	3,918	1,798	1,081					
Franklin	Onions, tobacco, dairy, work off farm	1914	57	109	16,552	13,752	4,678	3,187	1,491	663	4.7		705	117	
Ashfield	Dairy, apples	1922	19	164	9,113	6,321	3,226	2,148	1,078	622					
Do	do	1923	19	168	9,571	6,584	4,028	2,432	1,596	1,117					
Heath	Dairy, livestock	1922	24	161	7,318	4,640	2,075	1,522	553	187					
Do	do	1923	26	195	7,425	4,819	2,364	1,523	841	470					
Shelburne	do	1921	24	196	15,407	10,158	4,035	2,987	1,048	278					
Do	do	1922	25	202	15,170	9,570	3,654	2,809	845	87					
Do	do	1923	23	202	14,083	8,524	4,675	3,205	1,470	766					
Hampden	Dairy, work off farm, cattle, poultry, potatoes.	1914	99	138	8,213	5,952	2,314	1,595	719	308	3.0		470	107	
Do	do	1915	35	162	7,433	5,343	1,910	1,070	840	468	6.7		338	52	
Granville	Dairy, truck, crops	1921	24	118	6,851	5,104	2,089	1,307	782	439					
Do	do	1922	23	128	7,287	5,513	2,804	1,532	1,272	908					
Hampshire	Tobacco, onions	1914	83	66	17,908	15,093	5,986	3,670	2,316	1,421	8.6		773	138	
Granby	Dairy	1923	29	137	20,138	14,852	5,799	4,106	1,693	686					
Middlesex	Dairy, work off farm, apples, poultry	1915	36	71	9,375	7,258	2,687	1,739	948	479	5.4		439	65	
Boxboro	Dairy, apples	1920	41	87	9,549	7,873	2,937	1,870	1,067	590					
Do	do	1921	39	88	9,956	7,882	1,792	1,602	190	−308					

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Massachusetts—Continued.														
Middlesex—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Boxboro	do	1922	35	98	10,101	8,145	2,689	1,922	767	262				
Do	do	1923	36	93	10,082	8,845	3,197	2,034	1,163	659				
Littleton	do	1920	62	102	15,498	11,310	4,962	3,647	1,315	540				
Do	do	1921	59	95	15,630	12,014	3,510	2,975	535	−247				
Do	do	1922	53	103	16,198	12,742	4,960	3,457	1,503	993				
Do	do	1923	47	108	15,442	12,136	5,522	3,705	1,817	1,045				
Norfolk	Dairy, work off farm, poultry, peaches	1915	20	93	8,690	6,657	2,643	1,829	814	380				36
Plymouth	Poultry	1921	29	22	8,334	6,978	4,349	2,705	1,644	1,227				
Worcester	Dairy, work off farm, poultry, apples	1913	100	116	9,668	7,538	2,821	2,108	713	230	2.9		435	115
Do	Dairy, work off farm, poultry, apples, cattle.	1914	84	131	8,320	6,205	2,482	1,614	868	452	5.0		450	89
Do	Dairy, apples, work off farm, poultry, cattle.	1915	36	120	9,347	6,938	2,834	1,695	1,139	672	7.4		446	94
Michigan:														
Alpena	Dairy, cattle, horses, hogs, oats, potatoes.	1915	50	120	5,414	3,766	1,048	444	604	393	5.1		329	76
Branch	Hogs, dairy, sheep, cattle, poultry	1914	61	97	8,166	6,540	1,302	636	666	258	3.5		377	49
Do	Hogs, dairy, sheep, cattle, poultry, wheat.	1915	57	90	9,025	6,961	1,514	552	962	511	7.3		307	69
Gratiot	Sugar beets, beans, dairy, wheat, hogs, cattle.	1919	52	90	20,300	17,416	3,659	1,771	1,888	873	4.9		903	162
Iron	Dairy, work off farm, cattle, hay, potatoes, poultry.	1914	87	78	4,927	3,549	1,080	645	395	139	.6		355	127
Jackson and Shiawassee	Dairy, hogs, wheat, cattle, sheep, poultry.	1921	23	159	24,436	18,610	3,473	2,210	1,263	41				
Kent	Dairy, cattle, wheat, potatoes	1914	10	158	20,110	16,325	3,269	2,010	1,259	253	3.2		606	168
Lenawee	Dairy, hogs, wheat, poultry, cattle	1911	453	112	12,413	10,337	1,967	824	1,143	522	6.1		390	87
Do	Sheep, hogs, cattle, wheat	1921	24	179	34,583	27,568	5,021	3,655	1,366	−363				105
Mason	Livestock, crops	1915	67	65	7,960	6,316	1,500	602	898	500				
Montcalm, Emmet, and Antrim.	Potatoes, apples, dairy	1921	21	197	16,092	13,042	2,902	2,040	862	27				116
Newaygo	Dairy, cattle, hogs, poultry, apples	1914	96	71	7,501	5,993	1,141	557	584	209	4.0		281	122
Do	Dairy, beans, cattle, hogs, potatoes, wheat.	1915	87	104	8,795	7,033	1,685	563	1,122	682	8.8		344	56
Saginaw	Beans, hogs, cattle, dairy, wheat, poultry, oats.	1914	76	93	8,972	7,007	1,705	762	943	494	6.9		320	83
Do	Cattle, hogs, dairy, beets, field beans, wheat.	1915	73	109	10,064	7,383	1,729	709	1,020	517	6.8		334	83
St. Joseph	Wheat, dairy, cattle, hogs, sheep, poultry.	1915	54	161	10,784	9,107	1,599	657	962	393	5.5		338	64

Tuscola	Beans, sugar beets, cattle, hogs, dairy, hay.	1914	180	98	10,060	8,882	1,773	695	1,078	545				87
Do	Sugar beets, beans, dairy, cattle, hogs.	1919	94	100	17,376	13,871	3,725	2,008	1,717	848	3.6		1,099	
Wayne and Monroe	Dairy, hogs, cattle, wheat, poultry, hay.	1921	24	140	31,764	25,271	4,300	2,730	1,570	−18				46
Michigan, Minnesota, and Wisconsin: Several counties of cut-over land in each State.	Dairy	1914	801	108	6,856				392	49				163
Minnesota:														
Betrami	Potatoes, dairy, work off farm	1918	69	162	6,170	4,720	1,374	812	862	553				187
Clay	Wheat, potatoes, dairy, oats, cattle, hogs.	1913	69	264	14,797	12,324	1,918	788	1,130	390	5.0		392	175
Do	Potatoes, wheat, cattle, dairy, oats, hogs.	1914	66	264	15,448	12,529	1,922	744	1,178	406				140
Do	Wheat, potatoes, cattle, dairy, oats, hogs.	1915	58	254	16,175	13,528	2,524	944	1,580	771				133
Do	Potatoes, cattle, dairy, wheat, hogs	1916	45	246	16,169	13,309	3,656	943	2,713	1,905				182
Crow Wing	Dairy, cattle, hogs, poultry	1915	34	147	7,780	5,901	1,055	402	653	264	3.8		355	92
Do	Dairy, cattle, potatoes, oats, hogs	1916	22	162	8,859	6,309	1,337	510	827	384				108
Dakota	Hogs, cattle, dairy, oats, wheat, barley, horses.	1913	60	217	22,650	19,332	2,320	986	1,334	202	4.5		325	131
Do	Hogs, dairy, cattle, oats, barley	1914	51	200	20,995	17,919	2,371	899	1,472	422	5.2		376	114
Do	Hogs, cattle, dairy, wheat, potatoes, oats, barley.	1915	20	200	22,141	18,690	2,371	952	1,419	312	4.5		415	65
Grant	Hogs, cattle, wheat, dairy, barley, poultry.	1916	9	242	20,957	17,422	2,369	1,009	1,360	312				288
Itasca	Potatoes, dairy, work off farm	1918	67	125	8,357	6,301	2,195	1,160	1,035	617				319
Jackson	Hogs, oats, cattle, dairy, corn	1914	57	214	28,358	24,741	2,590	831	1,759	341				173
Do	Hogs, cattle, dairy, oats	1915	56	233	30,610	26,688	2,299	987	1,312	−218				137
Do	Hogs, cattle, oats, dairy, corn	1916	47	212	28,166	24,421	3,578	999	2,579	1,171				167
Kandiyohi	Hogs, dairy, cattle, wheat, barley, corn.	1914	43	263	22,866	18,980	2,497	1,043	1,454	311	4.7		389	248
Lacqui Parle	Wheat, hogs, cattle	1915	53	251	27,128	23,845	3,020	946	2,074	718	6.2		404	119
Do	Hogs, cattle, wheat	1916	29	260	29,117	24,688	3,409	1,034	2,375	919				100
Mahnomen	Wheat, flax, dairy	1918	61	293	14,693	11,036	3,425	1,854	1,571	836				504
Pope	Cattle, hogs, dairy, oats, potatoes	1914	64	232	17,442	14,691	1,870	769	1,101	229				125
Do	Cattle, hogs, dairy, oats, wheat, potatoes.	1915	62	233	18,249	15,046	2,004	861	1,143	231				79
Renville	Wheat, cattle, hogs, corn, dairy	1914	73	241	25,102	22,095	2,600	923	1,677	422	5.0		413	174
Do	Wheat, hogs, cattle, dairy	1915	57	236	26,551	23,145	2,681	998	1,683	355	4.7		448	113
Rice	Dairy, small grain, hogs	1911	104	168	16,996	14,061	2,255	1,011	1,244	394				243
Do	do	1912	401	137	14,181	11,909	1,655	633	1,022	313	5.1		299	116
Stevens	Hogs, cattle, dairy, barley, wheat, oats, horses.	1914	50	301	25,263	21,729	2,125	1,066	1,059	−204				209
Traverse	Wheat, hogs, oats, cattle	1915	50	288	25,202	22,018	3,012	1,120	1,892	632				130
Do	Cattle, hogs, wheat, dairy, oats, poultry.	1916	18	286	25,511	21,774	2,160	1,248	912	−364				136
Washington	Dairy, hogs, cattle, potatoes, hay	1914	70	130	10,674	8,235	1,530	561	969	435	6.0		333	122
Do	Dairy, cattle, potatoes, hogs	1915	47	138	11,418	8,714	1,913	668	1,245	674	7.6		373	78
Do	Dairy, cattle, potatoes, hogs, wheat	1916	7	158	13,991	10,104	3,103	1,046	2,057	1,357				54

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Mississippi:			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Coahoma	Cotton	1914	106	933	71,259	62,908	15,500	11,759	3,741	178	3.9	-------	995	44
Copiah	Tomatoes, cabbage	1918	10	109	6,570	5,180	4,698	2,362	2,336	2,008	26.3	-------	606	182
Do	Tomatoes, cabbage, carrots	1919	91	121	5,915	4,109	3,920	2,133	1,787	1,491	25.7	-------	268	279
Do	Tomatoes, cattle, cabbage, peas, dairy	1920	5	97	5,039	3,540	1,728	946	782	530	2.8	-------	642	84
Jones	Cotton, dairy, cattle, hogs, poultry	1919	154	154	6,531	-------	1,809	1,009	800	473	4.1	627	531	187
Lowndes	Cotton, corn, hay, cattle, work off farm.	1920	47	513	48,602	41,619	1,946	4,087	−2,141	−4,571	−6.2	-------	871	116
Madison	Cotton, corn, work off farm, cattle	1920	45	336	23,340	18,748	2,507	3,121	−614	−1,781	−5.5	-------	663	136
Monroe	Cotton	1919	48	152	11,902	10,210	2,154	1,251	903	308	3.6	-------	477	237
Washington	do	1919	29	280	57,072	49,135	8,560	6,627	1,933	−921	1.8	-------	885	158
Missouri:														
Barry and Lawrence Monett.	Wheat, small fruits, cattle, horses, hogs, poultry.	1914	244	122	9,033	7,688	1,368	546	822	370	5.9	-------	292	115
Jackson	Hogs, wheat, cattle, poultry	1913	69	118	15,767	13,834	1,547	775	772	−16	-------	-------	-------	55
Johnson	Hogs, cattle, wheat	1912	669	138	11,531	9,469	1,841	842	999	422	-------	-------	-------	-------
Saline	Hogs, cattle, wheat, corn	1915	44	194	20,697	25,196	4,156	2,827	1,329	−156	-------	-------	-------	60
Several counties, Ozark region.	Cattle, hogs, wheat, dairy, poultry, horses.	1917	79	206	7,603	5,425	1,563	669	894	514	6.0	-------	440	252
Montana:														
Blaine	Wheat	1920	29	529	8,942	6,687	1,648	1,326	322	−125	-------	-------	-------	249
Do	do	1921	27	572	9,298	7,403	1,490	688	802	337	-------	-------	-------	81
Do	do	1922	27	613	9,150	7,210	1,892	922	970	512	-------	-------	-------	42
Choteau	do	1920	28	544	22,970	19,592	4,435	2,834	1,601	453	-------	-------	-------	227
Do	do	1921	30	557	24,721	21,655	5,086	1,868	3,218	1,982	-------	-------	-------	124
Do	do	1922	25	605	20,644	18,118	2,641	1,500	1,141	109	-------	-------	-------	72
Custer	Cattle, alfalfa	1915	20	-------	21,241	-------	3,737	2,468	1,269	207	-------	-------	-------	-------
Custer and Dawson	Wheat, cattle, hogs	1922	66	448	10,776	8,416	1,688	928	760	221	.9	353	664	66
Daniels and Sheridan	Wheat	1921	62	415	12,612	9,729	3,266	1,879	1,387	756	6.4	313	581	89
Do	do	1922	61	421	12,838	10,193	3,330	1,803	1,512	870	7.2	317	594	100
Dawson	Wheat, flax, cattle, oats	1915	55	-------	13,197	-------	3,017	1,077	1,940	1,280	-------	-------	-------	-------
Fergus	Wheat, cattle	1913	41	715	32,479	28,076	4,924	2,640	2,284	660	5.1	-------	641	231
Flathead	Hogs, wheat, cattle, dairy, oats, hay	1914	64	234	16,508	13,426	1,826	1,005	821	−4	1.9	-------	503	161
Do	Dairy	1921	22	222	18,305	15,087	2,524	1,731	793	−122	.5	-------	700	216
Gallatin	Oats, peas, hay, barley, wheat, cattle, hogs.	1913	186	260	27,173	23,252	3,767	1,582	2,185	826	6.2	-------	500	112
Do	Wheat, peas, hay, cattle, oats, hogs	1918	70	259	32,665	28,367	5,937	2,476	3,461	1,828	8.2	-------	769	292
Do	Wheat, hay, cattle, peas	1919	80	251	43,703	37,894	5,003	3,112	1,891	−294	1.9	-------	1,081	317
Do	Wheat, peas, hay, oats, cattle	1920	77	254	42,906	37,587	3,917	3,440	477	−1,668	−1.5	-------	1,116	262
Do	Wheat, cattle, hay, peas, hogs, oats	1921	57	249	34,999	30,578	2,997	2,165	832	−918	−.1	-------	866	253
Do	Wheat, cattle, hay, peas, hogs	1922	80	253	33,307	29,628	4,273	2,371	1,902	237	2.9	-------	947	191

Hill	Wheat	1920	30	464	7,448	5,686	767	1,087	−320	−692				180
Do	do	1921	28	435	7,270	5,683	811	678	133	−231				147
Do	do	1922	29	516	6,977	5,395	1,478	923	555	206				73
Missoula	Wheat, cattle, dairy, hogs, oats, work off farm.	1914	46	426	16,595	13,007	2,721	1,396	1,325	495	5.2		465	124
Phillips	Wheat	1920	30	432	7,972	5,808	1,596	1,235	361	−38				227
Do	do	1921	29	539	9,615	7,068	1,800	1,214	586	105				279
Powder River and Rosebud.	Cattle	1924	87	5,006	56,056	31,912	5,814	3,144	2,670	−133	3.6		650	267
Ravalli	Dairy	1921	98	175	14,838	12,107	2,050	1,171	879	137	.8		767	212
Do	do	1923	194	189	16,038	13,795	2,197	1,522	675	−127				257
Sanders	Cattle, wheat, horses, hogs, hay, oats, dairy.	1914	49	381	17,637	13,142	2,288	1,214	1,074	192	3.5		450	100
Teton	Wheat	1921	34	522	12,828	10,859	876	1,159	−283	−924				232
Do	do	1922	32	483	12,083	9,834	2,080	1,244	836	232				65
Yellowstone	Sugar beets, wheat, hay, hogs, cattle, oats.	1914	321	134	13,786	11,303	2,811	1,193	1,618	929	8.8		402	132
Do	Sugar beets	1924	166	160	18,585	16,034	5,336	2,870	2,466	1,537	8.9		811	464
Do	Dairy	1921	18	98	13,146	10,775	2,317	1,300	1,017	360	2.3		716	172
Nebraska:														
Box Butte	Crops, livestock	1914	55	967	21,055		1,840	757	1,083	30				
Do	do	1915	58	771	17,193		2,560	672	1,888	1,028				
Burt	Hogs, cattle	1919	38	225	78,249	68,168	9,761	4,732	5,029	1,117	5.0		1,081	275
Do	do	1920	80	231	89,645	80,926	7,224	4,340	2,884	−1,598	2.1		1,038	153
Do	do	1921	53	220	64,248	57,061	3,722	3,648	74	−3,138	−1.6		1,117	157
Do	do	1922	72	223	59,552	53,103	5,392	2,725	2,667	−311	3.5		574	117
Do	do	1923	74	210	53,674	46,926	5,754	3,359	2,395	−289	3.2		675	157
Do	Cattle, hogs	1924	71	7,749	86,463		8,976	5,287	3,689	−634				
Cherry	Cattle	1924	95	276	15,328	9,688	2,428	1,058	1,370	604				74
Custer	Crops, livestock	1914	49	160	27,765	24,186	2,643	980	1,663	275				
Dakota	Hogs, corn, cattle, wheat	1915	35	162	29,020		3,095	1,139	1,956	505				57
Do	do	1914	7	1,292	36,562	29,557	4,380	1,327	3,053	1,225				
Dawes	Cattle, dairy, horses, hogs	1915	36	1,080	24,487		3,430	911	2,519	1,295				122
Do	do	1914	58	232	26,052	23,526	3,137	979	2,158	855				
Gage	Wheat, corn, hogs, oats, cattle	1915	77	236	27,413		3,642	1,026	2,616	1,245				120
Do	do	1924	20	171	24,171		2,428	1,039	1,389	180				86
Do	do	1914	38	190	25,439	22,976	2,839	1,090	1,749	477				131
Johnson	Wheat, hogs, cattle, corn	1914	12	699	6,819	14,330	2,005	691	1,314	473				103
Kimball	Cattle, wheat, potates, horses, dairy, hogs.	1914	41	227	24,695	21,472	2,575	1,140	1,435	200				
Madison	Hogs, cattle, wheat, corn, sheep	1915	68	235	27,437	23,249	3,025	1,329	1,696	324				
Do	Hogs. cattle, wheat	1913												
Do	Crops, livestock	1912	195	208	26,646	21,727	2,583	866	1,717	385		[1] 477		
Merrick	do	1911												
Platte	do	1914												63
Richardson	do	1914	75	247	22,187	19,923	1,969	787	1,182	73				
Phelps	Wheat, cattle	1915	66	241	21,263		2,182	760	1,422	359				87
Do	do	1914	43	222	28,061	24,731	3,102	1,140	1,962	559				
Richardson	Hogs, wheat, cattle, corn	1921	79	171	21,013		4,004	2,484	1,520	469				
Scotts Bluff	Sugar beets, cattle	1914	53	232	34,035		4,366	1,244	3,122	1,420				
Seward	Crops, livestock	1915	63	216	33,983		3,996	1,102	2,894	1,195				
Do	do													

[1] Richardson county only.

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Nebraska—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Thomas	Cattle	1915	67	1,369	11,838	-------	1,260	569	691	99	-------	-------	-------	-------
Thurston	Corn, hogs, cattle, oats	1914	55	212	24,580	21,634	3,690	1,056	2,634	1,405	-------	-------	-------	65
Do	do	1915	50	220	24,716	-------	2,406	1,071	1,335	99	-------	-------	-------	-------
Valley	Crops, livestock	1923	26	223	23,422	-------	2,807	1,447	1,360	189	-------	-------	-------	-------
Do	do	1924	28	230	13,645	-------	2,403	1,151	1,252	570	-------	-------	-------	-------
New Hampshire:														
Belknap—														
Laconia and others	Dairy	1914	56	-------	5,742	-------	1,299	828	471	184	-------	-------	-------	-------
Do	do	1915	55	-------	6,096	-------	1,203	718	485	180	-------	-------	-------	-------
Do	Dairy, poultry	1919	36	-------	6,795	4,571	2,155	1,354	801	461	-------	-------	-------	-------
Cheshire—														
Keene and others	Dairy, cattle, work off farm, poultry	1914	65	194	7,556	5,443	1,840	1,209	631	253	2.3	-------	457	52
Do	Dairy	1915	51	-------	8,596	-------	-------	-------	716	286	-------	-------	-------	-------
Do	Dairy, poultry	1919	29	-------	6,704	4,142	3,168	1,984	1,184	849	-------	-------	-------	-------
Coos—														
Colebrook	Dairy, cattle, work off farm, potatoes	1914	75	236	8,201	5,333	2,105	1,222	883	473	5.1	-------	461	68
Do	Dairy	1915	59	-------	7,825	-------	1,956	705	1,251	860	-------	-------	-------	-------
Do	do	1919	34	-------	7,791	4,432	3,118	1,824	1,294	904	-------	-------	-------	-------
Grafton	Dairy, cattle, woodlot, work off farm	1914	84	200	7,105	4,591	1,922	1,184	738	383	4.0	-------	452	100
Do	Dairy	1915	62	-------	9,426	-------	2,484	1,164	1,320	849	-------	-------	-------	-------
Do	do	1918	35	-------	8,547	-------	3,886	2,390	1,496	1,069	-------	-------	-------	-------
Do	do	1919	44	-------	7,951	4,094	3,642	2,187	1,455	1,057	-------	-------	-------	-------
Do	do	1921	27	-------	9,414	4,915	4,029	2,774	1,255	784	-------	-------	-------	-------
Hillsboro	Dairy, poultry, apples, work off farm, woodlot, cattle.	1908	266	108	5,350	4,124	1,582	978	604	337	5.7	-------	300	50
Do	Dairy, poultry, apples, peaches, hay	1913	65	131	8,840	6,468	3,353	2,180	1,173	731	6.5	-------	597	109
Do	Dairy, poultry, apples, cattle	1918	19	-------	6,960	-------	3,924	2,616	1,308	960	-------	-------	-------	-------
Do	Dairy, poultry, apples	1918	136	129	7,180	5,104	2,576	1,807	769	410	.3	533	751	116
Do	Dairy, poultry	1919	25	-------	6,929	4,641	4,697	2,703	1,994	1,648	-------	-------	-------	-------
Merrimac	Dairy	1909	428	174	6,151	4,404	1,439	866	573	265	-------	-------	-------	70
Do	Dairy, cattle, poultry, work off farm	1913	73	193	6,953	4,800	2,294	1,559	735	387	4.4	-------	428	127
Do	Dairy	1915	60	-------	6,470	-------	1,793	1,198	595	271	-------	-------	-------	-------
Do	Dairy, cattle	1916	48	-------	6,504	-------	2,078	1,193	885	560	-------	-------	-------	-------
Do	Dairy, poultry	1919	33	-------	6,730	4,184	3,577	2,393	1,184	848	-------	-------	-------	-------
Rockingham	Dairy	1914	54	-------	8,387	-------	-------	-------	793	374	-------	-------	-------	-------
Do	do	1915	45	-------	8,630	-------	2,591	1,462	1,129	697	-------	-------	-------	-------
Do	do	1919	31	-------	6,975	4,761	3,881	2,337	1,544	1,195	-------	-------	-------	-------
Sullivan	Dairy, cattle, work off farm, poultry	1914	95	202	7,133	5,052	1,760	1,066	694	337	3.2	-------	465	98
Do	Dairy	1915	51	-------	7,954	-------	1,719	898	821	423	-------	-------	-------	-------
Do	do	1918	61	-------	6,175	-------	2,616	1,548	1,068	759	-------	-------	-------	-------

Do	Dairy, poultry	1919	54		6,435	3,668	3,021	1,751	1,270	948				
Do	Dairy	1921	33		6,588	3,876	2,442	1,572	870	541				
Several counties	Dairy	1923	40		7,456	4,998	2,531	1,720	811	438				
Do	Wholesale milk	1923	32							769				
New Jersey:														
Cumberland, Gloucester, and Salem.	Truck crops, dairy	1913	246	103	11,380	8,171	3,347	2,284	1,063	494				136
Gloucester	Sweet potatoes, tomatoes, asparagus, potatoes	1914	125	80	10,308	7,751	3,993	2,574	1,419	904	9.1		478	142
Do	Sweet potatoes, tomatoes, asparagus	1915	125	81	10,495	7,880	3,620	2,652	998	443	4.7		477	160
Do	Tomatoes, sweet potatoes, asparagus, potatoes.	1916	125	82	10,542	7,917	5,037	2,818	2,219	1,692	16.5		483	169
Mercer—Hopewell and Pennington.	Dairy	1915	44	112	13,065	9,887	2,648	1,572	1,076	423				
Monmouth	Dairy	1914	75	122	14,949	11,080	3,527	1,843	1,684	937				
Do	Potatoes	1914	343	109	19,160	15,559	4,316	2,129	2,187	1,229	9.5		372	
Do	Truck crops	1914	300	55	11,494	9,845	2,455	1,408	987	412	5.0		408	
Do	Crops, livestock	1914	209	117	14,260	10,838	3,040	1,764	1,276	563	6.2		386	
Sussex	Dairy	1914	469	168	11,904	8,264	3,002	1,858	1,144	549	6.0		427	
Montague and Sandystone.	do	1915	26	202	8,624	5,708	2,699	1,377	722	291				
Do	Poultry	1915	21	117	7,170	4,765	3,416	1,970	1,446	1,087				
Several counties	do	1916	150	12	7,245	5,572	2,818	1,726	1,092	730				
New York: [2]														
Albany	Milk, hay, cattle, rye, apples	1916	52	124	11,393	8,424	2,987	1,843	1,138	568	5.6		498	224
Allegany	Milk, cattle, potatoes	1914	80	149	8,521	5,929	1,632	866	766	340	3.0		507	133
Cattaraugus	Milk, cattle	1914	70	132	6,751	4,896	1,277	640	637	299	3.9		372	66
Do	do	1915	65	154	7,520	5,491	1,478	758	720	344	3.5		460	107
Cayuga	Milk, hay, cattle, wheat, potatoes	1914	62	140	13,872	10,500	2,787	1,422	1,365	671	6.6		450	101
Chautauqua	Milk, butter, eggs, cattle	1913	90	124	7,887	5,315	2,024	1,100	924	530	6.6		400	154
Do	do	1914	161	126	8,240	5,591	1,797	1,015	782	370	4.8		387	118
Do	do	1915	69	132	8,447	5,565	1,918	1,087	831	409	5.9		334	128
Do	do	1916	38	130	8,773	5,486	2,437	1,462	1,025	586	6.4		464	122
Do	Milk, cattle, work off farm	1923	76	123	6,190	4,170	1,525	1,226	297	−13	−6.0		636	226
Chenango	Milk, cattle, eggs	1915	38	149	10,574	6,747	2,715	1,768	947	418	5.3		390	92
Do	Condensary milk, cattle	1921	83	180	12,943	9,207	3,157	2,688	469	−178	−.6		549	226
Do	Grade A milk, cattle, eggs	1931	84	104	13,040	8,887	4,101	3,210	951	299	1.7		725	228
Do	Cheese factory milk, cattle	1923	98	181	4,598	2,838	1,518	1,116	402	172	−4.7		616	131
Cheming	Milk, cattle, eggs, potatoes, hay	1911	195	139	4,722	3,344	958	537	421	185	2.1		323	67
Do	do	1912	83	155	5,797	3,843	1,569	862	707	417	6.1		356	66
Do	do	1913	186	140	6,015	4,177	1,416	808	608	307	4.5		339	119
Do	do	1914	97	150	6,894	4,700	1,719	893	826	481	6.4		388	132
Do	do	1915	61	160	7,121	4,828	1,672	871	801	445	6.5		336	158
Do	do	1917	60	112	7,363	5,145	2,519	1,359	1,160	792	9.1		490	211
Do	Milk, tobacco, cattle, wheat, eggs	1911	42	117	8,482	6,664	1,876	900	976	552	6.2		447	89
Do	do	1912	66	111	9,840	7,825	2,383	1,104	1,279	787	9.8		316	52
Do	do	1913	85	122	10,031	7,732	2,130	1,123	1,007	505	6.6		341	89
Do	do	1914	37	130	13,404	9,658	3,749	1,815	1,934	1,264	11.5		386	76
Do	do	1915	31	153	13,412	9,806	3,218	1,578	1,640	969	9.5		364	89
Do	do	1917	46	124	13,104	9,864	4,706	2,308	2,398	1,743	14.1		557	160
Clinton	Milk, potatoes, apples, hay, cattle	1914	95	148	9,401	6,925	1,562	826	736	266	3.5		403	85

[2] In New York, farmer's labor is valued in most instances, at the cash rate paid year men who board themselves.

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
New York—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Cortland	Grade A milk, cabbage, potatoes, cattle	1921	51	168	19,204	13,681	7,018	4,993	2,025	1,065	6.2		834	428
Dutchess	Milk, cattle, eggs, hay, apples	1914	66	192	14,375	10,629	2,746	1,483	1,263	544	6.1		385	53
Do	do	1915	46	156	12,404	9,443	2,363	1,259	1,104	484	6.1		345	23
Franklin	Milk, cattle, potatoes, hay	1914	21	139	11,590	8,742	2,263	1,403	860	280	3.6		440	55
Herkimer	Milk, butter, cattle	1914	68	139	7,722	5,262	1,495	822	673	287	2.6		472	166
Do	Milk, butter, cattle, hay	1915	37	135	7,630	5,191	1,460	674	786	404	4.8		420	120
Jefferson	Milk, hay, cattle	1910	670	143	9,006	6,839	1,851	791	1,060	610	7.9		344	96
Do	Hay, milk, cattle, oat	1914	97	172	13,212	10,258	1,964	610	1,354	693	6.4		504	67
Do	Cheese factory milk, cattle, eggs	1921	67	203	13,909	10,691	2,002	1,681	321	−374	−1.4		520	423
Livingston	Milk, beans, cattle, wheat, potatoes, hay	1908	578	149	12,037	9,516	2,457	1,189	1,268	666	6.9		438	67
Do	do	1918	697	147	18,859	14,818	4,258	3,100	1,158	215	3.1	449	582	232
Madison	Grade B milk, cattle, alfalfa, peas	1921	125	141	15,371	11,030	4,278	3,281	997	228	1.8		720	389
Do	do	1922	108	145	15,588	11,343	3,697	2,914	783	4	.5		701	377
Do	Grade B milk, peas, cabbage, cattle	1921	121	167	16,586	11,059	5,082	3,932	1,150	321	2.2		783	270
Do	do	1922	88	151	16,080	10,818	4,550	3,714	836	32	.6		743	255
Monroe	do	1923	95	163	15,546	10,476	5,516	4,356	1,160	383	2.2		814	236
Do	Potatoes, wheat, milk, butter, cabbage	1914	106	108	15,359	12,768	2,261	1,293	968	200	4.0		360	156
Montgomery	do	1915	67	104	15,734	12,889	3,000	1,264	1,736	949	8.8		344	188
Do	Milk, cattle, hay	1914	77	134	11,104	7,926	2,234	1,064	1,170	615	6.9		409	205
Nassau [3]	do	1915	72	135	10,890	7,629	2,331	1,140	1,191	647	6.9		440	219
Do	Potatoes, sweet corn, cabbage, carrots	1914	84	76	19,295	15,360	6,949	5,141	1,808	843	7.1		445	361
Niagara	do	1915	27	70	18,777	15,360	6,878	4,846	2,032	1,093	8.4		458	502
Do	Apples, peaches, tomatoes, pears	1913	89	73	18,279	15,763	4,095	1,966	2,129	1,215	9.4		407	106
Do	do	1914	98	72	18,597	16,293	1,905	1,555	350	−580	−.4		427	184
Do	do	1915	81	74	18,331	15,883	2,376	1,636	740	−177	1.6		447	137
Do	do	1916	87	66	15,322	13,481	2,460	1,409	1,051	285	4.0		439	119
Do	do	1917	113	69	15,058	13,078	3,295	2,008	1,287	534	5.6		448	133
Do	do	1918	159	70	14,962	12,824	3,698	2,127	1,571	823	7.1		508	118
Do	do	1919	156	64	14,994	12,745	3,355	2,036	1,319	569	4.6	401	629	133
Do	do	1920	178	72	17,474	15,026	4,916	3,775	1,141	267	2.2		750	226
Do	do	1921	171	68	16,722	14,656	3,257	2,283	974	138	1.9		651	168
Do	do	1922	178	67	17,664	15,716	4,158	3,031	1,127	244	2.7		656	180
Do	do	1923	194	64	16,441	14,496	2,828	2,279	549	−273	−.8		680	152
Oneida	Milk, potatoes, apples, hops, hay	1924	202	66	17,104	15,194	3,492	2,236	1,256	401	3.1		718	166
Do	do	1914	62	105	11,072	8,274	2,625	1,477	1,148	594	6.1		478	202
Orange	Milk, eggs, cattle	1915	58	101	10,699	7,878	2,564	1,345	1,219	684	7.3		440	200
Oswego	do	1915	71	122	10,954	7,374	2,412	1,544	868	320	4.5		373	141
Do	do	1915	102	83	7,482	5,408	1,553	767	786	412	5.4		382	87
		1916	35	78	7,309	4,892	1,952	1,029	923	558	6.1		480	76

Otsego	Milk, cattle, eggs	1914	106	133	8,399	4,937	2,517	1,237	1,280	860	10.1		433	71
Do	do	1915	81	143	8,987	5,194	2,264	1,348	916	467	5.3		443	83
Saratoga	Milk, butter, cattle, apples	1915	14	138	10,158	7,696	2,028	1,062	966	458	4.6		494	116
Schoharie	Milk, butter, eggs, cattle	1915	59	149	5,930	3,452	1,950	1,183	767	471	5.1		464	151
Do	Milk, cattle, hay, hops, eggs	1915	75	115	9,482	6,748	2,172	1,210	962	488	4.9		498	133
Do	do	1916	91	141	9,241	6,140	2,906	1,605	1,301	839	9.5		427	155
St. Lawrence	Milk, cattle	1913	142	169	13,175	9,464	2,443	1,080	1,363	704	6.7		479	170
Tompkins	Milk, hay	1907	749	107	5,705	4,182	1,189	458	731	446	7.1		326	53
Do	Hay, beans, milk, wheat, potatoes, eggs	1914	58	110	10,594	8,338	2,193	859	1,334	804	8.3		459	48
Do	do	1915	70	109	10,420	8,120	1,960	869	1,091	570	6.3		438	48
Do	Milk, cattle, eggs, hay	1917	250	125	8,561	6,156	2,124	1,268	856	428	5.1	317	421	151
Ulster	Apples, milk, eggs, cattle, hay	1914	77	111	10,950	8,226	2,172	1,529	643	95	2.3		388	121
Do	do	1915	47	115	11,912	8,832	3,142	1,564	1,578	982	10.1		381	101
North Carolina:														
Catawba	Cotton, dairy, wheat, sweet potatoes, poultry.	1912	297	121	6,530	5,460	919	506	413	87	2.3	328	260	133
Do	Cotton, sweet potatoes, dairy, wheat, cattle, corn.	1918	304	112	8,860	7,397	1,726	741	985	542	6.4	573	417	181
North Dakota:														
Billings, McKenzie and others.	Cattle, wheat	1924	69	4,993	36,402	15,562	5,723	3,904	1,819	—1	3.4		580	366
Morton and others	Wheat, cattle, dairy, flax, hogs	1915	11	975	27,058	20,316	5,094	1,566	3,528	2,175				305
Do	Wheat, dairy, cattle	1922	159	817	24,895	20,138	3,968	2,276	1,692	447		896		284
Ohio:														
Auglaize	Hogs, cattle, wheat, dairy, horses, poultry.	1910	120	99	12,600	10,626	1,914	944	970	340	5.2		314	116
Do	Dairy, hogs, poultry, wheat	1922	12		10,470		2,192	1,097	1,095	571				
Do	do	1923	14		13,148	10,045	2,570	1,273	1,297	640				26
Belmont	Dairy, poultry, wheat, sheep	1921	13		15,241	11,461	3,255	2,045	1,210	448				77
Brown	Hogs, dairy, poultry, wheat	1923	18		9,769	7,936	2,019	936	1,083	595				125
Butler	Hogs, dairy, wheat, poultry, sheep	1923	21		17,734	14,282	3,425	1,719	1,706	819				
Clermont	do	1923	19		10,055	8,611	1,747	758	989	486				49
Clinton	Hogs, dairy, wheat, poultry	1923	14		11,780	9,606	2,940	1,207	1,733	1,144				95
Columbiana	Dairy, cattle, hay, hogs, work off farm, horses.	1911	156	85	8,960	6,996	1,661	950	711	263	4.1		345	104
Do	Diary, wheat, poultry, hogs	1917	61		11,395	8,115	2,868	939	1,929	1,359				107
Cuyahoga	Grapes, black raspberries, blackberries, strawberries.	1917	36	19	8,379	7,946	1,379	943	436	17	−3.2		700	121
Do	do	1918	36	20	8,527	8,024	1,894	1,008	886	460	2.6		665	174
Franklin	Potatoes, tomatoes, onions, string beans.	1916	48		20,358	17,760	3,526	1,399	2,127	1,109				104
Do	do	1917	34	14	8,649	7,743	1,996	1,514	482	50	−3.8		807	403
Do	Potatoes, tomatoes, string beans, onions.	1918	34	14	8,602	7,706	2,346	1,675	671	241	−2.0		842	475
Do	Dairy, hogs, poultry, wheat, fruit	1923	9		15,340		2,735	1,263	1,472	705				
Geauga	Dairy, potatoes, cattle, poultry	1914	161	118	9,091	7,746	1,601	784	817	362	4.9		367	52
Guernsey	Poultry, sheep, dairy, cattle	1923	21		8,868	6,507	2,275	1,218	1,057	614				
Henry	Corn, hogs, poultry, dairy, beets	1922	29		22,674	18,782			1,550	416				58
Do	Corn, poultry, hogs, dairy, beets	1923	24		22,911	18,893	3,518	1,402	2,116	970				74
Do	Poultry, hogs, corn, dairy, beets	1924	18		24,508	19,854	4,488	1,690	2,798	1,573				114

[3] In Nassau County, the real estate capital was valued at $15,360 per farm in working labor income This land was valued at $58,537 in 1914 and at $54,381 in 1915 because of its value for building sites and estates.

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Ohio—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Highland	Hops, wheat, cattle, poultry, dairy	1915	81	137	14,196	11,662	2,186	891	1,295	585	6.9		317	39
Do	Hogs, dairy, wheat, poultry	1923	15		13,870	11,600	2,307	1,124	1,183	439				65
Hocking	Dairy, hay, poultry, wheat, hogs	1921	23		12,145	9,337	2,006	1,524	482	−125				17
Huron	Wheat, hogs, dairy, sheep, poultry	1917	58		18,657	15,526	4,018	663	3,355	2,422				188
Do	do	1918	33		15,904	12,255	4,314	1,665	2,649	1,854				145
Do	do	1919	28		16,301	13,090	4,729	1,687	3,042	2,227				111
Do	Wheat, dairy, hogs, sheep, poultry	1920	26		19,662	15,052	3,395	2,527	868	−125				148
Do	do	1921	23		17,122	13,116	2,766	2,198	568	−288				131
Do	Dairy, wheat, hogs, sheep, poultry	1922	18		16,762	13,001	2,846	1,569	1,277	444				100
Do	do	1923	19		17,003	12,578	3,436	2,019	1,417	567				
Lake	Dairy, fruit, truck, poultry	1916	89		11,857	9,672	2,501	1,229	1,272	679				68
Lorain	Dairy, wheat, fruit, truck, poultry	1917	62		16,822	12,786	4,436	1,564	2,872	2,031				152
Mercer	Hogs, poultry, dairy, wheat	1923	15		14,732	11,759	2,529	1,265	1,264	527				40
Miami	Tobacco, dairy, corn, hogs, wheat, poultry, cattle.	1914	106	79	12,639	10,981	1,693	574	1,119	487	6.5		301	90
Montgomery	Hogs, dairy, wheat, tobacco, cattle, poultry.	1915	100	97	12,967	10,944	2,014	794	1,220	572	6.7		354	94
Morgan and Noble	Sheep, cattle, poultry, dairy	1922	51		11,913	9,277	1,735	738	997	401				17
Paulding	Sugar beets, corn, oats, wheat, hogs	1919	48	126	35,208	32,214	4,808	1,992	2,816	1,051	5.3		928	250
Portage	Dairy, cattle, hogs, wheat, poultry, potatoes, work off farm, sirup.	1914	67	99	8,367	6,995	1,158	531	627	209	3.8		313	58
Do	Dairy, wheat, potatoes, poultry, hogs	1915	54		8,364	6,920	1,401	632	769	351				81
Sandusky	Hogs, wheat, oats, dairy, corn, cattle, poultry.	1915	84	124	17,469	15,127	2,255	715	1,540	667	6.8		351	60
Scioto	Dairy, wheat, hogs, truck, potatoes	1918	31		10,391	7,974	2,844	1,299	1,545	1,025				148
Do	do	1919	38		16,515	10,144	3,260	1,327	1,923	1,397				91
Do	do	1920	40		12,661	9,002	2,572	1,685	887	254				62
Do	Dairy, hogs, wheat, truck, poultry	1921	38		13,432	10,161	2,257	1,919	338	−334				110
Do	Dairy, hogs, wheat, poultry, truck	1922	28		12,466	9,848	2,414	1,587	827	204		579		36
Do	do	1923	23		13,068	10,167	2,359	1,414	936	283				76
Shelby	Hogs, dairy, wheat, poultry, cattle	1919	11		23,930	19,315	4,654	1,829	2,805	1,606				243
Do	Hogs, dairy, wheat, poultry, oats	1920	11		23,980	19,315	4,149	2,039	2,110	830				245
Do	Hogs, dairy, wheat, poultry, cattle	1921	11		24,000	19,456	2,867	3,523	−656	−1,856				35
Do	do	1922	11		22,914	19,238	2,716	908	1,808	662				186
Do	do	1923	7		21,722	17,524	3,226	1,825	1,401	315				21
Summit	Dairy, wheat, potatoes, poultry, hogs	1918	60		11,566	9,369	2,503	844	1,659	1,081				65
Trumbull	Dairy, cattle, poultry, work off farm	1914	99	112	8,346	6,838	1,201	532	669	252	4.0		334	45
Do	do	1915	58		8,703	7,193	1,345	649	696	261				78
Warren	Hogs, dairy, poultry, wheat	1923	17		14,207	11,809	3,120	1,362	1,758	1,048				75

Washington—													
Barlow	Cattle, poultry, sheep, dairy, wheat, apples, hogs.	1914	75	140	6,530	4,749	1,109	469	640	313	5.1	367	86
Marietta and Lowell	Tomatoes, cabbage	1920	90	64	13,573	8,942	3,754	1,708	2,046	1,367			96
Do	do	1921	79	66	14,141	11,691	2,501	1,621	880	173			60
Do	do	1922	79	64	13,603	11,573	2,261	1,498	763	78			48
Do	do	1923	70	64	13,082	11,076	3,322	1,580	1,742	1,088			80
Do	do	1924	72	64	12,846	10,868	3,454	1,698	1,756	1,114			71
Palmer	Sheep, poultry, cattle, hay, wheat, apples, hogs.	1912	47	154	5,927	4,602	801	396	405	109	2.2	274	71
Do	Cattle, poultry, sheep, hogs, hay, work off farm.	1913	34	156	6,121	4,613	779	386	393	87	2.0	270	79
Do	Cattle, poultry, hogs, sheep, dairy, wheat, work off farm.	1914	52	135	5,756	4,282	812	377	435	147	2.9	267	72
Do	Cattle, poultry, sheep, hogs, wheat, dairy, work off farm.	1915	57	142	5,649	4,181	806	396	410	128	2.3	280	79
Do	Cattle, poultry, hogs, sheep, dairy, wheat, work off farm.	1916	55	144	6,007	4,448	1,026	413	613	313	5.5	265	74
Do	Cattle, sheep, poultry, hogs, dairy, wheat, work off farm.	1917	25	164	7,163	5,247	1,571	547	1,024	666	9.7	332	105
Do	Cattle, poultry, sheep, hogs, dairy, work off farm.	1918	47	162	8,187	5,611	1,431	772	659	250	3.8	348	152
Do	Cattle, poultry, wheat, sheep, hogs	1919	51	160	7,833	5,528	2,046	870	1,176	784	10.1	525	388	176
Do	Poultry, cattle, hogs, dairy, work off farm, wheat.	1920	59	149	7,888	5,502	1,275	911	364	−30	−.3	379	385	163
Do	Poultry, cattle, work off farm, dairy, sheep, hogs, apples.	1921	60	149	7,030	5,508	1,006	841	165	−187	−2.8	399	360	148
Do	Poultry, cattle, work off farm, sheep, dairy, hogs.	1922	64	145	7,135	5,340	1,324	832	492	135	1.8	377	366	145
Wayne	Wheat, dairy, poultry, oats, potatoes	1923	16		15,918	11,909	3,492	1,708	1,784	988				
Do	do	1924	13		16,250	12,111	3,786	1,580	2,206	1,394				
Several southwestern counties, Clermont silt loam soils.[4]	Hogs, poultry, cattle	1923	83	126	11,872	9,846	2,406	1,078	1,328	734				
Oklahoma:													
Alfalfa	Wheat, cattle, horses, poultry, hogs, kafir.	1916	56	220	16,044	13,234	2,446	940	1,506	704	5.3	662	67
Do	Wheat	1918	9	251	30,695	26,444	7,297	2,441	4,856	3,321	13.0	867	217
Canadian	Wheat, hogs, corn, alfalfa, cattle	1916	179	221	15,872	12,961	2,506	958	1,548	754	6.9	450	164
Custer	Wheat, hogs, cattle, poultry	1915	89	238	9,589	7,689	1,813	637	1,176	697	8.4	371	65
Kay	Wheat, cattle, oats, hogs, kafir, poultry	1914	53	187	15,677	13,818	1,815	836	979	195	3.8	385	71
Payne	Cattle, cotton, hogs, dairy, horses, poultry, work off farm.	1915	234	163	7,067	5,593	1,049	483	566	213	2.9	358	81
Washita	Wheat, cotton, cattle	1915	178	214	10,656	8,723	2,507	793	1,714	1,181	12.2	416	113
Oregon:													
Coos	Dairy, cattle, hogs	1915	22	198	22,406	19,140	3,132	1,197	1,935	815	6.6	450	56
Douglas	Prunes	1923	49	256	33,537	30,962	3,243	3,853	−610	−2,287	−5.2	1,125	54
Do	do	1924	39	255	34,171	31,751	4,637	2,964	1,673	−36	2.8	707	70
Hood River	Apples	1914	52	31	21,447	19,995	2,351	1,908	443	−629	−.1	456	54
Klamath	Cattle, dairy, hogs, barley, alfalfa, oats, sheep, wheat.	1915	35	176	17,942	13,516	3,361	1,741	1,620	723	6.3	497	146

[4] More successful farms.

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Oregon—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Lane	Dairy, hay, hops, cattle, hogs, oats, wheat, work off farm.	1914	98	149	15,726	13,494	1,573	878	695	−91	1.1		521	84
Do	Dairy, wheat, hay, hogs, work off farm, cattle, oats, hops.	1915	45	138	15,962	13,998	1,966	939	1,027	229	2.9		557	75
Marion and Polk	Oats, hops, wheat, dairy, potatoes, poultry, clover seed.	1912	367	150	18,012	16,180	2,207	960	1,247	346	5.0		344	102
Malheur	Hogs, alfalfa, work off farm, dairy, cattle, clover, seed, wheat.	1915	44	97	16,344	13,968	2,904	1,195	1,709	892	6.5		651	69
Do	Hay, alfalfa	1919	62	67	15,605	13,958	3,501	1,826	1,675	895				
Do	do	1920	78	75	16,881	15,380	2,054	1,974	80	−764				
Do	do	1921	54	109	16,485	14,479	1,837	1,857	−20	−844				
Do	do	1922	66	82	13,946	11,939	2,347	1,982	365	−332				
Do	do	1923	33	63	8,998		1,985	1,588	397	−53				
Polk	Prunes	1923	22	114	32,519	30,850	3,709	4,242	−533	−2,159	−5.0		1,098	171
Do	do	1924	25	130	31,820	30,176	5,022	3,224	1,798	207	3.7		612	130
Sherman	Wheat	1920	144	996	61,200	52,559	13,082	7,761	5,321	2,261	6.7	644	1,195	164
Do	do	1921	152	1,042	66,635	57,393	11,509	6,964	4,545	1,213	5.2	548	1,092	129
Do	Wheat, work off farm	1922	152	1,074	59,550	52,673	6,909	5,960	949	−2,029	.2	513	836	158
Tillamook	Dairy, cattle	1915	104	83	19,484	16,939	2,277	980	1,297	323	3.9		535	106
Washington	Prunes	1923	31	86	20,519	18,296	2,958	2,765	193	−833	−3.8		980	104
Do	do	1924	35	99	22,459	20,600	4,069	2,612	1,457	334	3.6		654	107
Yamhill	Wheat, dairy, hogs, clover seed, oats, cattle, hay.	1915	93	159	19,920	17,663	2,306	901	1,405	409	4.9		434	82
Pennsylvania:														
Bradford	Dairy, cattle	1914	202	135	5,493	3,652	1,287	656	631	356				
Chester	Dairy	1911	502	94	10,860	8,344	2,418	1,030	1,388	845	9.7		336	97
Do	Mushrooms, dairy, flowers, hay	1911	27	79	12,893	10,501	5,166	2,857	2,309	1,664	14.7		408	88
Do	Dairy	1922	389	101	16,251	12,745	3,804	2,821	983	170	2.6	550	564	223
Do	Mushrooms	1922	27	58	15,849	13,832	6,711	5,172	1,539	747	6.6	657	501	182
Mercer—Grove City	Dairy, cattle, poultry, hogs	1916	349	101	7,644	5,785	1,240	573	667	285	4.4		334	83
Rhode Island:														
Several counties	Dairy, work off farm, poultry	1920	51	118	13,583	8,382	5,079	4,095	984	305	1.1	501	840	145
Do	Dairy, poultry, work off farm, potatoes	1921	84	129	14,684		4,635	4,026	609	−125		666		113
Do	Market garden crops	1922	25		20,859				2,085	1,042				
South Carolina:														
Anderson	Cotton	1914	112	136	8,940	7,748	1,178	957	221	−226	−.5		264	138
Do	do	1918	89	95	10,471	9,352	2,823	1,209	1,614	1,090	9.6		607	245
Do	do	1919	73	90	12,639	10,671	3,448	1,813	1,635	1,003	8.3		583	416
Do	do	1922	333	138	14,254	11,991	2,448	1,984	464	−249	1.3	565	277	122
Do	do	1923	144						957	−69				

Barnwell	do	1918	91	138	8,212	6,503	3,920	2,621	1,899	1,488	15.6		616	216
Do	Cotton, corn	1919	75	146	9,496	7,016	3,615	2,571	1,044	569	4.4		627	392
Clarendon	Cotton, tobacco	1920	47	121	14,802	12,114	2,196	2,438	−242	−982	−5.7		601	270
Darlington	do	1920	44	252	43,820	39,507	5,361	6,760	−1,399	−3,590	−5.2		891	232
Greenville	Cotton	1924	43	119	17,350	14,348	5,369	2,914	2,455	1,587	12.6	465	264	205
Oconee	do	1924	63	80	9,865	8,632	1,635	1,178	457	−36	2.5	456	207	139
Orangeburg	do	1915	253	103	11,323	9,125	2,303	1,313	990	424	6.2	470	283	84
Several counties	Cotton, truck	1921	300	212	17,288	16,094	1,526	1,197	329	−535	−.1	323	350	
South Dakota:														
Beadle—Logan	Wheat, hogs, cattle, barley	1915	45		27,177				2,676	1,317				
Butte—Bellefourche	Sheep, cattle, horses, poultry	1923	11	300	26,347		2,272	1,414	858	−459				59
Brown and Spink	Wheat, hogs, dairy, cattle	1921	65	462	27,931	21,942	2,767	3,194	−427	−1,824				82
Do	Wheat, hogs, cattle, dairy, poultry	1922	48	466	26,928	21,161	2,911	1,955	956	−390				
Clarke—Logan	Wheat, barley, hogs, cattle	1915	49		29,356		6,261	1,485	4,716	3,248				
Day	Wheat, hogs, cattle, barley	1915	51		26,217		5,230	1,828	3,402	2,091				
Do	Crops, livestock	1923	9	352	24,282		2,713	1,504	1,209	−5				
Faulk	Cattle, hogs, small grains	1923	8	921	38,789		3,354	2,271	1,083	−856				
Jones	Cattle, hogs, crops, dairy	1921	61	1,068	22,014	16,416	2,106	1,457	649	−452	1.3	445	364	179
Do	do	1922	66	843	17,642	12,493	2,952	1,350	1,602	720	6.9	392	388	139
Do	do	1923	58	862	18,601	13,621	3,073	2,331	742	−188				164
Do	do	1924	54	908	18,970	15,220	3,594	2,404	1,190	242		303		227
Kingsbury	Wheat, hogs, cattle	1915	37		33,446		4,589	1,242	3,347	1,675				
Sanborn—Letcher	Grain, hogs, cattle, poultry	1923	7	283	41,399		3,480	1,251	2,199	129				
Minnehaha	Cattle, grain, hogs	1923	7	338	50,765		5,345	3,165	2,180	−358				
Perkins, Stanley, and others.	Cattle, alfalfa seed	1924	99	2,876	35,140	19,475	3,950	2,407	1,543	−214	2.8		553	237
Several north central counties.	Cattle, hogs, small grains	1923	26	749	23,557		2,534	1,404	1,130	−48				
Several northeastern counties.	Cattle, hogs, small grains, dairy	1923	16	391	26,950		2,785	1,442	1,343	−5				
Several southeastern counties.	Hogs, cattle, corn, dairy	1923	21	323	41,877		4,237	1,990	2,247	153				
Several west central counties.	Cattle	1922	64	1,604	23,464	15,117	3,266	1,771	1,495	322	3.7	474	618	159
Spink	Wheat, hogs, cattle, barley	1915	52		39,275		7,565	1,857	5,708	3,744				
Texas:														
Cameron and Hidalgo	Hogs, corn, cabbage, lettuce, dairy, onions.	1914	59	76	13,432	11,256	3,132	1,805	1,327	655	4.6		705	184
Ellis	Cotton	1914	115	144	21,481	19,640	2,176	1,268	908	−166	2.6		357	141
Do	do	1918	75	168	39,860	36,801	7,079	2,200	4,879	2,886	10.8		564	131
Do	Cotton, wheat	1919	70	168	48,621	44,559	3,726	2,933	793	−1,638	.0		792	181
Rusk	Cotton	1918	75	145	6,856	5,176	2,515	951	1,564	1,221	15.2		521	201
Do	Cotton, cattle, hogs, corn	1919	75	122	6,966	4,991	1,211	1,049	162	−186	−5.6		549	240
Utah:														
Beaver—														
Beaver	Cattle, sheep, dairy, work off farm, alfalfa.	1914	50	185	14,158	9,381	2,459	1,364	1,095	387	4.1		515	121
Do	do	1915	40	190	13,269	8,818	2,056	847	1,209	546	4.6		594	74
Do	Sheep, cattle, dairy, hay, grain	1916	44		12,915	8,774	2,948	1,203	1,745	1,099				98
Cache—														
Hyde Park	Beets, dairy, wheat, cattle, work off farm.	1914	51	103	13,592	11,133	2,447	895	1,552	872	7.4		552	186

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Utah—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Cache—Continued.														
Hyde Park	Beets, dairy, wheat, work off farm, cattle.	1915	49	107	13,994	11,351	2,151	898	1,253	553	5.0		549	107
Do	Beets, dairy, grain, cattle, horses	1916	32		12,057	9,701	2,291	765	1,526	923				87
Carbon—Wellington	Alfalfa, work off farm, cattle, potatoes, horses.	1914	26	129	8,391	6,397	1,640	803	837	417	4.0		498	13
Emery—														
Ferron	Cattle, hogs, work off farm, dairy, bees, apples.	1914	40	111	7,121	4,396	1,396	785	611	255	2.7		416	137
Do	Cattle, clover seed, work off farm, poultry, hogs.	1915	48	101	6,970	4,384	1,269	588	681	333	4.0		400	154
Do	Cattle, fruit, grain, hogs, poultry	1916	34		6,769	4,029	1,544	590	954	616				140
Millard—														
Hinckley	Alfalfa seed, alfalfa, cattle, work off farm, dairy, horses.	1914	59	153	9,581	6,513	1,793	695	1,098	619	6.4		487	120
Do	Alfalfa seed, cattle, work off farm, hay, wheat, dairy.	1915	60	155	9,608	7,516	1,319	451	868	388	3.9		491	74
Do	Alfalfa, cattle, grain, dairy, hogs	1916	39		7,983	6,109	1,582	575	1,007	608				63
Salt Lake—														
Sandy	Work off farm, alfalfa, beets, wheat, cattle, sheep.	1915	47	201	14,257	12,019	2,302	980	1,322	609	4.1		735	182
Draper	Cattle, dairy, hogs, beets	1916	45		7,542	6,132	1,726	839	887	510				71
Salt Lake and Weber	Beets, dairy, wheat, alfalfa, cattle, work off farm.	1914	372	75	11,899	10,323	1,660	743	917	322	3.7		478	139
Sevier—														
Monroe	Sheep, wool, cattle, beets, dairy	1914	66	66	12,135	8,640	3,054	1,917	1,137	530	4.7		572	170
Do	Sheep, cattle, beets, dairy, wheat	1915	37	53	10,970	7,407	2,559	1,079	1,480	932	9.2		476	156
Do	Sheep, cattle, beets, grain, hay, dairy	1916	57		10,151	6,719	3,640	1,780	1,860	1,352				131
Utah—														
Provo	Beets, fruit, cattle, alfalfa, work off farm.	1913	69	47	9,000		1,480	613	867	417				169
Do	Beets, fruit, cattle	1914	75	64	11,688		2,417	1,105	1,312	728				154
Pleasant Grove	Beets, cattle, dairy, grain, potatoes, fruit, hogs.	1916	57		7,792	6,254	1,649	608	1,041	651				81
Vermont:														
Addison	Dairy, cattle	1916	33	221	9,701	6,188	2,199	1,096	1,103	618	6.7		455	52
Bennington	Dairy, cattle, potatoes	1916	34	250	10,941	7,294	2,806	1,401	1,405	858	8.2		510	77
Caledonia—Barnet	Dairy, cattle, hogs	1914	70	186	8,061	5,101	2,279	1,349	930	527	5.6		480	54
Chittendon	Dairy	1917	41		16,160		5,133	2,486	2,647	1,839				
Do	do	1919	29		9,181				1,357	898				

Franklin—													
Enosburg	Dairy, cattle, hogs	1914	80	204	12,271	8,688	2,582	1,396	1,186	572	5.4	517	90
Do	do	1915	74	204	12,480	8,725	2,597	1,289	1,308	684	6.4	515	84
Do	Dairy	1922	114	185	11,624	8,388	2,679	1,786	893	312	2.1	349	650	197
Lamoile	do	1919	22		16,475				2,155	1,331				
Orange—													
Randolph Center	Dairy, cattle	1914	61	147	7,620	5,223	1,824	1,123	701	320	3.9	407	67
Do	Dairy, cattle, hogs, poultry	1915	31	178	8,945	5,810	2,027	1,295	732	285	3.2	447	54
Do	Diary, cattle, hogs, poultry, work off farm.	1916	34	171	8,233	4,940	2,316	1,243	1,073	661	7.7	439	115
Orange and Windsor	Dairy, potatoes, cattle, poultry	1921	211	157	8,580	5,982	2,058	1,534	524	95	−.6	464	578	125
Do	Dairy	1922	189	150	8,768		2,275	1,551	724	286	1.4	531	604	151
Orleans—													
Barton	Dairy, cattle, hogs	1914	71	147	7,852	5,225	1,555	871	684	291	3.5	409	35
Do	Dairy, cattle	1915	29	176	9,307	5,953	1,936	918	1,018	550	6.2	440	93
Do	Dairy, cattle, hogs, potatoes	1916	30	183	8,935	5,655	2,327	1,119	1,208	761	8.6	438	77
Rutland—													
Danby	Dairy, cattle	1914	71	214	7,856	4,995	1,934	1,093	841	448	5.7	393	129
Do	do	1915	30	246	10,156	6,478	2,309	1,312	997	489	5.5	435	108
Do	do	1916	34	243	10,023	6,307	2,778	1,339	1,439	938	9.9	450	106
Windham	Dairy, cattle, potatoes, poultry, work off farm.	1914	37	226	7,150	4,404	1,637	1,005	632	274	2.1	479	100
Windsor—													
Hartford	Dairy, cattle, work off farm, woodlot, poultry, hay.	1914	64	261	7,918	4,688	1,552	913	639	288	2.4	467	47
Do	Dairy, cattle, poultry, hogs	1915	22	212	8,721	5,800	2,068	1,325	743	307	2.8	495	43
Do	Dairy, cattle, hogs	1916	36	236	8,102		2,509	1,289	1,220	815	9.0	491	104
Several counties	Dairy, cattle, poultry, sirup, work off farms.	1921	86		11,286	6,879	2,693	1,837	856	292				84
Do	Dairy	1922	67		11,458		3,031	2,028	1,003	430				
Virginia:													
Albermarle	Apples, cattle, corn, wheat, dairy, horses.	1914	276	288	13,647	11,967	1,092	858	234	−448	−2.2	541	60
Appomattox	Tobacco, dairy, poultry, wheat, hogs, truck crops.	1922	150	184	7,197	6,081	1,309	857	452	92	0	697	455	225
Charlotte	Dark tobacco, wheat	1922	36	165	8,766	7,440	1,964	1,107	857	419	3.7	617	534	141
Do	Bright tobacco	1922	32	135	7,645	6,478	1,633	990	643	261	1.8	601	503	276
Do	Dark tobacco, wheat	1923	46	145	8,239	7,079	1,539	900	639	227	2.2	594	458	198
Do	Bright tobacco	1923	33	124	7,818	6,690	1,311	998	313	−78	−1.4	566	419	232
Frederick	Apples, wheat	1916	125	162	25,734	22,910	5,905	2,656	3,249	1,962	9.7		751	65
Do	Apples, wheat, hogs, corn	1917	125	151	25,827	22,889	4,656	2,257	2,399	1,108	6.9		618	79
Do	Apples, wheat	1918	125	161	26,500	23,136	7,382	3,849	3,533	2,208	10.6	556	715	72
Do	do	1919	125	159	32,680	29,311	6,389	3,537	2,852	1,218	6.2	571	815	107
Do	do	1920	125	154	36,400	32,894	7,260	5,833	1,427	−393	1.7	513	806	99
Do	do	1921	48	138	43,252	39,689	2,017	3,035	−1,018	−3,181	−4.4		871	33
Do	Apples	1913	108	341	30,240	24,467	4,026	1,750	2,276	764	6.9		194	64
Loudoun	Cattle, wheat, horses, corn	1922	138	143	13,651	12,159	2,771	1,793	978	295		830		287
Pittsylvania	Tobacco, dairy													
Washington:														
King	Dairy, cattle, work off farm, hogs	1914	110	71	14,210	12,208	1,862	930	932	222				102
Do	Dairy, cattle, hogs	1915	120	75	15,250	13,036	2,014	980	1,034	272				82
King and Pierce	Poultry, dairy, fruit, cattle, work off farm.	1915	158	33	7,435	6,422	1,165	775	390	18				42
Do	Poultry, dairy, fruit, work off farm	1921	150	29	9,771	8,435	2,139	1,725	414	−75	−2.0	316	614	166

TABLE 652.—*Farm business surveys: Summaries of 71,515 farm records from 435 localities in 45 States, 1907–1924*—Continued

State, county, locality	Principal sources of receipts	Year covered by survey	Farms included	Size of farms	Capital		Receipts	Expenses	Farm income	Labor income	Return to capital	Family living from the farm	Farmer's labor	Other unpaid family labor
					Total	Real estate								
Washington—Continued.			*Number*	*Acres*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Dollars*
Skagit	Dairy, cattle, oats, potatoes	1915	202	46	14,988	12,193	2,218	1,037	1,181	432	4.5		504	71
Spokane—														
Opportunity	Small fruits, apples, dairy	1914	30	12	10,680	10,000	801	662	139	−395				51
Waverly	Wheat, oats, hogs, cattle	1914	124	320	22,032		3,285	1,352	1,933	831				
Wahkiakum	Dairy, cattle, hogs, poultry	1914	87	122	12,273	8,881	1,861	794	1,067	453				124
do		1015	72	122	13,269	10,679	1,748	830	918	255	5.5		190	11
Walla Walla	Wheat, dairy, barley, cattle	1914	92	216	27,569	24,375	3,813	1,451	2,362	984	6.4		594	92
Do	Dairy, cattle, alfalfa, wheat, hogs, apples, horses.	1915	39	102	16,766	14,424	2,242	845	1,397	559				68
Yakima—														
Sunnyside	Potatoes, alfalfa, hogs, apples, dairy, cattle.	1915	94	46	11,534		2,068	1,189	879	302				
Do	Potatoes, alfalfa, wheat, dairy	1921	175	61	16,183	13,671	3,094	2,519	575	−234	−1.0	388	743	183
Do	Alfalfa, potatoes, dairy, wheat, cattle	1922	139	46	13,336	11,564	2,293	1,899	394	−273	−1.9	425	645	148
West Virginia:														
Brooke	Dairy, poultry, cattle, work off farm, sheep.	1913	201	150	10,507	8,757	1,427	777	650	125				153
Do	Dairy, cattle, sheep	1914	22	201	14,080	12,181	2,829	1,350	1,479	775				162
Do	Dairy, cattle, work off farm, sheep	1915	22	204	15,783	12,649	3,578	1,318	2,260	1,471				182
Do	Dairy, cattle, sheep, poultry, work off farm.	1916	22	207	16,180	12,649	3,835	1,494	2,341	1,532				216
Do	Dairy, sheep, cattle, hogs, poultry	1917	22	205	19,920	15,127	4,404	1,588	2,816	1,820				207
Do	do	1923	37	134	12,028	9,365	2,280	1,477	803	202				202
Greenbrier and Monroe	Livestock	1914	239	255	17,500	14,165	1,639	763	876	1				106
Do	do	1915	239	255	17,676	14,124	1,750	790	960	76				113
Do	do	1923	87	211	19,108	15,567	1,825	1,108	717	−238				168
Preston	Cattle, dairy, poultry, work off farm, horses, hay.	1913	74	162	8,845	6,810	1,413	797	616	174	4.5		219	161
Do	Cattle, dairy, poultry, work off farm, horses.	1914	20	162	10,940	8,300	1,857	809	1,048	501				141
Do	Cattle, dairy, poultry, potatoes, horses	1915	20	161	11,070	8,289	1,798	868	930	376				152
Do	Cattle, dairy, poultry, horses	1916	20	162	11,284	8,322	2,265	999	1,266	702				196
Do	Cattle, poultry, dairy, work off farm, buckwheat.	1917	20	162	11,546	8,374	2,817	1,136	1,681	1,104				144
Upshur	Cattle, sheep, poultry, dairy, work off farm.	1913	147	145	7,360	6,021	665	400	265	−103	.8		204	80
Wisconsin:														
Barron	Dairy, cattle, potatoes, oats, hogs	1915	51	144	11,353	9,167	1,796	738	1,058	490	6.4		326	150
Dane	Dairy, hogs, cattle	1913	60	149	17,307	14,762	1,961	882	1,079	214	4.2		351	192
Do	do	1914	60	150	17,596	14,829	1,841	905	936	56	3.3		356	184

Do	do	1915	60	146	17,451	14,641	1,858	917	941	68	3.4		342	175
Do	do	1916	60	147	17,803	14,847	2,560	1,043	1,517	627	6.3		388	232
Do	do	1917	60	147	18,305	14,928	3,278	1,288	1,990	1,075	8.0		525	276
Do	do	1918	30	145	19,480	14,971	3,873	1,707	2,166	1,192				404
Eau Claire	Dairy, cattle, hogs, oats, hay, rye, horses, work off farm.	1915	48	163	12,230	10 327	1,551	807	744	132	3.5		322	215
Do	Dairy, cattle, hogs, oats, work off farm, rye, barley.	1916	34	165	13,038	10,493	1,768	740	1,028	376	5.3		343	150
Green	Dairy, cattle, hogs	1915	84	203	31,036	25,683	3,357	1,374	1,983	431	4.9		469	100
Kenosha	Sugar beets, cabbage, dairy, onions, potatoes, wheat.	1919	50	103	32,071	28,664	4,831	2,073	2,758	1,154	5.1		1,137	263
St. Croix	Dairy, cattle, hogs, potatoes	1915	50	177	18,926	15,898	2,758	1,262	1,496	550	5.9		384	131
Walworth	Dairy, cattle, hogs	1915	50	170	22,687	18,871	3,030	1,314	1,716	582	6.0		352	143
Do	do	1916	40	170	22,490	18,289	3,477	1,253	2,224	1,100	8.3		353	129
Do	Dairy, hogs, cattle	1920	262	133	26,928	22,487	3,282	2,435	847	−499	−.4	448	949	241
Winnebago	Dairy, cattle, hogs, oats, poultry	1914	78	101	11,610	9,362	1,693	793	900	319	4.5		383	102
Do	Dairy, cattle, hogs, poultry	1915	60	99	11,768	9,341	2,075	780	1,295	767	8.1		342	145
Wood	Dairy, cattle, potatoes, hogs, rye, work off farm.	1914	50	211	7,567	6,425	953	523	430	52	1.8		293	181
Do	Dairy, cattle, rye, potatoes, work off farm, hogs.	1915	52	213	7,287	6,176	838	631	207	−157	−1.6		322	173
Wyoming: Campbell and Crook.	Cattle	1924	60	7,115	53,777	26,356	7,472	3,900	3,572	883	5.6		576	250

TABLE 653.—*Wheat: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	28.05	30.29	23.10	24.20	25.76	29.43	31.36	50.49	32.90	52.14	41.36	50.60	29.75	42.50	30.68	44.25	47.67
Vermont	30.00	30.18	27.52	24.50	24.50	29.00	32.10	41.25	47.20	50.82	36.32	38.00	17.50	30.45	29.40	31.50	31.50
New York	23.31	22.75	18.52	15.84	18.60	24.30	25.25	35.28	44.10	39.13	45.15	38.15	20.74	22.89	22.22	26.94	29.60
New Jersey	19.51	18.13	16.70	18.13	16.90	19.62	21.20	32.80	40.47	36.55	39.60	32.80	21.47	22.00	22.00	29.04	30.03
Pennsylvania	18.53	16.38	12.42	17.10	15.47	18.82	19.24	30.78	35.88	36.38	37.80	28.22	18.02	20.35	19.00	23.76	29.40
Ohio	17.81	14.58	14.56	7.84	16.20	19.42	21.11	22.82	44.88	40.28	42.19	20.96	13.39	16.38	18.02	26.11	23.73
Indiana	16.83	13.57	13.08	7.44	16.28	17.92	17.54	20.28	37.56	43.68	31.29	20.04	12.72	16.24	16.17	24.14	22.48
Illinois	18.10	13.20	14.24	7.30	16.08	18.68	16.00	18.15	37.59	45.97	35.91	24.47	16.10	18.51	16.92	21.84	24.10
Michigan	21.06	16.02	15.84	9.60	13.62	20.29	21.51	27.72	36.72	29.68	40.74	25.70	16.33	16.10	16.32	33.07	26.53
Wisconsin	18.72	17.76	14.31	15.77	15.83	19.10	21.56	28.16	45.05	49.61	29.02	23.25	12.71	17.61	16.27	30.74	27.37
Minnesota	16.13	15.04	9.29	11.32	12.31	10.81	15.30	12.31	35.35	42.64	23.50	12.74	9.41	13.84	12.06	28.68	18.12
Iowa	15.81	17.35	14.43	15.44	15.66	17.86	17.40	25.43	39.60	37.80	29.60	24.50	15.75	22.28	16.46	25.68	22.89
Missouri	15.44	12.01	13.82	11.25	14.36	16.66	12.05	14.02	29.84	35.26	28.22	20.00	10.79	13.12	12.61	17.70	19.82
North Dakota	12.60	4.50	7.12	12.42	7.66	11.31	15.83	8.36	16.00	27.61	16.63	11.70	7.22	12.69	6.36	19.78	15.33
South Dakota	12.69	11.39	3.64	9.80	6.39	8.55	14.71	10.20	27.44	37.81	19.68	10.58	7.92	12.33	7.78	18.75	15.08
Nebraska	16.73	12.96	11.66	12.14	12.71	17.67	15.37	31.04	26.91	22.06	27.88	22.01	12.53	13.73	8.22	23.32	17.91
Kansas	13.82	11.84	9.74	11.47	10.27	19.48	11.12	19.68	24.16	28.06	29.67	20.02	11.35	12.35	9.19	20.86	12.87
Delaware	14.56	15.30	15.03	16.80	12.76	22.34	16.35	24.30	34.32	28.86	25.56	29.07	11.27	17.50	18.00	25.63	26.83
Maryland	15.95	16.01	14.10	14.25	11.84	22.79	16.90	27.36	35.19	33.94	29.02	28.05	14.42	18.48	19.20	22.91	31.71
Virginia	12.88	12.42	11.52	11.72	13.06	15.66	14.90	20.96	28.08	26.28	26.43	22.50	11.37	15.25	14.63	19.83	22.86
West Virginia	14.69	12.75	11.73	14.64	13.00	16.20	16.20	23.20	30.38	31.38	29.70	23.75	14.62	14.03	15.08	19.11	21.33
North Carolina	12.06	12.54	10.81	9.88	12.40	14.04	13.08	18.48	23.40	16.10	18.41	24.57	10.80	12.24	14.21	19.20	18.81
South Carolina	14.60	13.86	14.02	10.95	15.99	16.68	14.90	20.03	30.45	28.60	25.80	28.05	22.88	12.56	16.94	18.70	20.35
Georgia	14.50	13.65	13.68	11.35	14.64	16.21	14.19	21.20	24.65	27.13	27.62	24.00	18.38	12.00	13.53	16.05	19.12
Kentucky	13.10	11.90	11.68	9.90	13.06	17.00	11.55	14.94	25.44	27.82	24.26	19.48	11.50	13.57	13.39	14.73	22.40
Tennessee	11.96	11.47	11.04	10.50	11.76	16.28	11.34	16.06	20.42	21.40	20.65	18.52	12.00	11.68	11.73	15.44	20.75
Alabama	13.65	13.56	13.80	11.98	13.46	16.38	15.00	17.58	27.00	22.05	22.05	22.08	16.06	17.44	13.00	16.17	19.28
Mississippi	13.31	16.24	12.00	11.64	13.30	16.25	21.00	26.25	45.00	41.25	35.00	21.30	18.20	17.40	16.50	18.60	28.80
Arkansas	12.54	13.07	9.45	9.40	11.70	12.87	12.62	13.04	32.16	24.84	19.19	18.05	9.30	13.78	11.38	15.30	19.50
Oklahoma	12.93	14.18	7.36	9.60	8.20	17.48	10.32	16.20	22.31	25.33	28.70	21.60	10.75	9.31	10.23	19.84	12.05
Texas	10.74	14.70	9.40	13.95	16.45	12.87	16.58	19.03	25.20	21.50	33.00	22.36	10.00	8.80	10.82	23.86	12.40
Montana	26.80	18.92	22.10	15.42	15.71	18.38	20.67	31.07	19.97	24.44	6.34	13.18	10.46	12.99	11.97	20.31	14.98
Idaho	24.19	16.27	20.26	18.88	17.39	22.79	22.40	34.75	36.95	40.90	37.31	28.00	17.28	19.44	22.88	25.44	35.15
Wyoming	28.41	23.75	24.44	22.96	18.00	20.38	20.67	31.32	42.40	48.01	30.53	27.00	13.59	11.48	12.72	16.86	21.83
Colorado	27.44	18.29	15.88	17.67	16.38	20.71	19.36	29.70	43.62	23.98	27.67	24.30	10.26	11.93	10.79	16.94	17.18

New Mexico	28.66	20.00	22.90	18.81	18.24	21.78	10.98	27.90	27.30	35.07	38.00	25.62	14.28	10.08	12.96	17.73	9.22
Arizona	34.75	26.76	28.12	33.77	35.20	35.00	32.20	43.50	52.50	62.40	56.25	62.88	26.25	20.90	36.40	29.62	36.75
Utah	23.31	18.56	15.61	19.28	17.67	21.50	22.10	32.22	34.00	37.98	32.34	29.84	17.10	17.37	21.93	21.43	33.06
Nevada	29.85	28.88	26.88	29.20	22.71	28.12	28.12	40.46	50.04	52.53	45.37	40.14	30.55	31.44	29.21	34.36	45.53
Washington	21.58	13.18	16.12	15.98	16.94	23.50	21.07	33.89	30.49	25.68	35.95	22.82	19.61	13.42	21.25	18.54	23.16
Oregon	18.79	18.56	15.75	18.00	15.75	21.22	18.65	33.35	26.39	29.55	40.70	27.17	19.89	18.68	21.21	21.30	28.25
California	15.54	16.92	15.84	15.81	13.30	17.68	15.20	24.32	39.60	32.40	31.62	25.20	16.05	24.72	23.33	23.10	28.12
United States	15.57	12.28	10.96	12.12	12.16	16.41	15.58	19.50	28.35	31.80	27.48	19.58	11.85	14.02	12.34	21.40	18.16

Division of Crop and Livestock Estimates.

TABLE 654.—*Rye: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Massachusetts	17.01	15.98	15.20	18.50	18.13	19.19	20.40	23.50	38.00	45.40	40.25	35.10	26.25	26.60	24.30	29.00	29.40
Connecticut	16.83	17.20	17.20	16.10	17.76	18.62	21.93	24.50	43.05	45.10	40.00	31.32	28.50	30.00	22.50	25.20	24.70
New York	13.60	13.54	14.86	12.54	12.90	15.75	17.39	23.04	34.96	28.38	24.00	27.65	15.34	15.52	14.83	19.21	16.50
New Jersey	12.88	13.86	13.61	13.82	14.40	15.17	18.40	22.23	32 38	32.00	25.60	29.75	17.85	16.15	16.73	19.78	16.74
Pennsylvania	12.24	12.41	12.08	13.48	12.95	14.94	15.12	18.53	28.90	28.05	25.12	22.40	15.20	14.79	15.47	18.08	17.85
Ohio	13.07	11.88	13.18	11.62	11.38	13.77	14.52	17.40	28.98	25.50	23.20	19.44	10.92	11.79	12.09	17.76	13.20
Indiana	12.21	10.74	10.96	9.86	9.42	13.86	13.12	16.66	24.00	25.08	19.60	18.20	9.49	9.48	10.22	14.31	9.69
Illinois	13.17	12.35	13.61	11.20	10.72	13.60	15.36	18.91	28.88	28.50	21.45	20.28	13.60	12.00	11.25	15.52	12.42
Michigan	10.69	10.40	12.41	8.64	8.87	14.56	13.18	18.59	23.10	21.45	17.02	19.11	9.10	9.73	8.68	15.37	9.75
Wisconsin	11.08	11.36	14.28	11.16	9.98	15.02	16.10	21.38	31.26	26.40	21.01	20.80	9.66	10.51	9.62	18.53	11.25
Minnesota	11.40	10.88	14.59	11.50	9.12	16.73	15.80	19.05	30.90	30.00	19.50	20.74	10.85	12.92	7.16	23.76	10.30
Iowa	11.21	11.84	13.86	11.78	10.92	14.63	14.80	19.55	27.90	27.93	20.99	19.89	11.75	13.79	11.62	18.36	13.12
Missouri	12.30	11.25	11.84	11.84	11.25	12.18	11.61	13.53	24.26	22.82	18.00	15.00	9.63	11.16	11.00	14.18	14.40
North Dakota	10.49	5.36	12.62	8.46	6.48	14.36	11.85	16.62	15.58	15.22	9.68	11.90	6.38	9.66	3.74	16.22	6.50
South Dakota	10.03	10.37	7.60	10.14	6.60	13.26	14.82	21.24	24.80	25.38	16.25	14.72	9.28	10.44	5.64	14.28	6.36
Nebraska	10.06	9.60	9.75	8.96	8.70	11.84	12.78	18.56	24.18	17.42	18.74	14.52	7.62	7.28	6.72	14.06	8.73
Kansas	10.65	10.22	8.91	10.81	10.50	16.00	12.16	15.95	23.38	24.31	15.51	13.00	7.68	7.77	6.38	13.92	8.72
Delaware	10.50	10.70	14.25	11.34	11.06	16.10	15.34	18.45	28.48	24.80	20.80	20.40	11.00	14.80	13.82	16.88	18.00
Maryland	11.00	12.08	12.47	12.40	10.94	14.62	14.52	17.05	26.88	25.50	22.82	24.02	12.88	16.72	15.33	18.30	21.66
Virginia	10.33	10.80	10.24	10.62	9.96	11.70	13.48	13.38	26.25	21.00	19.55	18.60	10.45	10.35	12.84	14.72	15.24
West Virginia	12.15	11 61	9.90	10.92	11.74	13.05	13.02	19.04	22.82	24.66	21.45	17.60	11.40	11.40	10.30	14.45	15.60
North Carolina	9.68	10.10	10.00	9.76	10.09	10.50	12.08	12.61	20.00	17.82	18.69	18.05	8.75	9.60	14.04	13.41	18.06
South Carolina	13.82	14.60	14.50	13.78	15.75	17.25	15.10	18.13	28.50	33.04	29.50	33.00	25.00	18.00	18.16	20.90	22.05
Georgia	13.50	14.56	13.11	12.88	12.82	13.95	12.88	15.20	22.41	18.48	24.21	21.00	15.75	12.82	17.10	16.84	16.74
Kentucky	11.18	11.05	11.28	11.44	10.79	13.02	11.28	14.45	21.88	21.90	21.00	18.00	11.20	12.65	12.05	13.97	16.25

TABLE 654.—*Rye: Value per acre based on December 1 price, 1909–1925*—Continued

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Tennessee	10.27	10.12	11.78	11.27	11.88	12.74	10.82	13.50	19.11	19.20	16.00	17.10	10.80	10.71	11.60	15.18	14.30
Alabama	15.37	14.40	12.50	15.41	15.40	14.30	13.50	22.75	25.46	28.71	24.70	27.25	19.20	7.65	19.20	17.16	12.64
Arkansas	11.02	11.76	9.00	11.02	10.92	11.02	10.50	11.50	20.25	22.05	19.00	22.00	11.70	12.00	10.80	14.41	14.30
Oklahoma	12.56	11.10	9.88	10.44	8.17	15.20	10.40	12.50	17.00	20.57	21.00	15.00	7.92	8.00	10.80	14.14	13.20
Texas	13.78	11.84	10.70	18.26	15.15	14.65	17.51	12.00	19.60	12.69	28.39	24.00	12.00	11.25	11.76	17.76	4.80
Montana	21.75	13.60	16.56	14.10	11.55	14.70	14.62	19.68	20.96	17.28	5.55	8.64	5.94	7.56	5.61	12.74	9.25
Idaho	15.05	13.20	15.08	13.20	12.76	13.40	13.60	16.15	20.92	24.75	24.50	14.00	12.60	10.05	12.92	12.20	16.00
Wyoming	23.00	14.98	18.00	12.35	12.16	13.77	18.00	16.74	21.70	27.36	16.20	20.70	12.18	7.28	8.58	8.80	7.68
Colorado	16.06	9.38	8.40	10.72	10.20	11.38	12.25	14.70	23.36	9.80	11.44	12.39	6.90	5.94	6.72	7.65	6.70
Utah	15.40	12.58	10.85	10.20	10.20	10.50	10.08	12.00	12.80	23.40	14.00	12.45	6.51	6.00	10.26	9.63	11.00
Washington	19.74	18.24	17.60	13.00	12.60	16.74	13.65	16.10	22.22	20.00	22.20	15.20	9.10	9.50	11.30	10.51	13.75
Oregon	17.00	15.10	17.55	11.20	13.12	16.00	16.20	19.55	21.59	22.55	15.96	15.00	9.66	10.20	13.95	13.60	15.40
United States	11.63	11.42	12.96	11.16	10.25	14.57	14.41	18.57	24.19	21.60	15.95	17.39	9.50	10.62	7.92	16.98	9.30

Division of Crop and Livestock Estimates.

TABLE 655.—*Corn: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	30.40	32.66	39.60	30.00	33.06	40.48	34.85	51.17	84.36	75.15	107.25	57.60	38.50	41.00	42.56	58.48	50.40
New Hampshire	26.68	31.74	36.90	34.50	29.97	37.72	34.20	52.90	86.80	67.50	79.05	65.25	39.75	32.25	46.62	64.32	50.00
Vermont	27.01	28.38	32.80	28.80	29.97	38.07	38.64	47.30	95.85	64.60	81.38	59.22	41.80	38.22	42.90	55.46	48.00
Massachusetts	30.78	31.85	36.52	34.65	34.42	39.95	37.60	50.40	96.75	88.40	89.96	50.00	36.96	37.60	49.45	58.05	55.00
Rhode Island	32.20	33.20	42.75	36.52	36.14	41.16	43.00	42.78	99.12	79.20	83.70	72.00	50.60	48.00	43.70	56.00	54.00
Connecticut	30.75	36.18	40.26	38.50	32.72	40.94	42.50	51.60	107.50	85.50	90.00	56.00	46.80	43.20	43.87	51.60	55.00
New York	26.64	24.13	29.64	27.02	23.08	34.03	31.20	33.00	61.38	63.00	71.38	46.40	30.82	29.46	32.40	39.78	34.92
New Jersey	23.22	21.60	26.13	25.84	29.62	29.26	28.50	40.00	71.40	61.50	61.20	37.40	24.91	29.40	38.00	39.44	37.96
Pennsylvania	22.40	24.19	30.26	26.78	28.08	31.02	26.95	37.83	59.67	62.00	60.09	45.00	26.40	31.68	36.40	43.07	40.80
Ohio	22.12	16.79	22.39	19.26	23.62	23.85	23.24	28.35	51.68	46.80	52.03	29.51	16.81	25.74	30.34	27.04	27.36
Indiana	20.00	15.72	19.44	16.93	21.60	19.14	19.38	28.56	45.00	39.27	46.25	23.90	13.32	20.72	23.87	24.06	23.92
Illinois	18.67	14.88	18.15	16.40	17.01	17.69	19.44	24.78	41.80	42.60	46.80	20.41	12.92	21.30	24.38	31.35	24.36
Michigan	21.59	17.17	21.45	19.38	22.44	24.12	21.76	26.12	39.13	39.00	51.06	31.93	18.72	23.65	26.91	30.21	30.00
Wisconsin	19.80	16.90	21.78	18.21	24.30	26.32	15.64	33.12	35.86	52.26	56.25	33.26	21.25	28.04	29.60	27.30	33.48
Minnesota	17.05	14.72	17.86	12.76	21.20	18.20	14.26	26.80	33.00	44.40	48.00	19.12	12.71	18.48	21.96	22.95	20.16

Iowa	15.44	13.07	16.43	15.05	20.40	20.90	15.30	29.20	39.96	43.92	49.92	21.62	12.60	25.20	25.11	26.04	24.08
Missouri	15.58	14.52	15.60	14.72	12.95	14.93	16.82	17.55	39.90	28.60	37.26	20.48	12.00	19.38	22.20	23.04	20.36
North Dakota	17.05	8.12	15.00	11.48	14.98	16.24	9.38	22.26	13.59	24.70	46.20	17.28	9.52	14.58	18.09	15.20	12.92
South Dakota	15.85	10.00	11.66	11.32	14.28	13.00	14.21	21.94	33.60	37.40	33.92	12.60	8.32	14.25	17.94	17.04	10.50
Nebraska	12.40	9.29	11.55	8.88	9.75	12.98	14.10	20.28	32.40	22.66	31.96	13.86	7.56	14.50	17.49	20.02	15.86
Kansas	10.75	8.55	9.14	9.20	2.50	11.66	15.81	9.00	16.25	10.58	21.28	11.66	6.88	11.77	13.89	18.88	10.43
Delaware	17.98	16.54	20.74	17.34	18.58	22.32	19.53	30.26	47.60	42.16	43.50	28.12	16.65	20.58	26.81	30.24	24.05
Maryland	20.41	19.43	23.00	20.08	21.45	25.16	21.35	34.71	54.60	47.25	57.40	31.18	19.11	27.20	32.23	34.41	31.50
Virginia	17.17	16.58	17.52	17.04	19.76	16.60	20.24	26.04	41.31	44.80	47.32	30.00	17.25	22.12	27.26	26.46	22.22
West Virginia	23.24	17.68	19.79	21.97	24.80	25.73	23.31	30.80	51.00	55.80	55.76	39.44	25.50	28.56	33.66	32.24	36.50
North Carolina	14.28	14.14	15.09	15.11	17.16	17.46	16.17	20.35	34.00	37.17	35.15	25.42	15.05	17.80	22.95	22.32	20.35
South Carolina	15.03	15.17	16.56	15.22	18.92	17.02	14.36	17.52	36.48	33.15	31.52	22.04	11.84	12.62	17.32	14.76	13.53
Georgia	11.95	11.31	13.28	11.73	14.10	11.90	11.70	15.50	25.60	24.75	23.20	15.75	7.95	10.32	13.05	12.88	10.70
Florida	10.46	11.05	11.68	10.27	12.30	12.80	10.95	13.50	21.00	22.08	21.00	13.50	7.42	12.18	12.50	15.12	15.00
Kentucky	17.98	15.37	16.38	16.72	15.58	16.00	16.80	24.36	38.12	37.96	37.20	25.01	14.08	19.32	24.22	25.50	21.46
Tennessee	15.40	14.50	16.35	16.16	15.78	16.32	15.66	24.44	34.80	34.80	33.60	24.36	13.42	18.17	23.03	23.22	17.80
Alabama	11.48	12.78	14.04	13.59	15.40	13.60	11.73	12.75	20.00	21.61	23.06	15.39	8.99	12.60	15.12	15.25	13.50
Mississippi	11.74	12.92	13.68	12.99	15.40	13.50	12.35	13.72	28.29	25.67	24.00	16.32	10.08	14.88	15.52	15.12	16.92
Arkansas	12.96	13.92	14.98	13.67	14.82	14.00	14.72	17.35	33.60	23.40	29.52	22.70	12.54	16.58	15.66	17.12	13.58
Louisiana	15.87	12.98	12.95	12.24	16.94	14.48	13.12	19.74	26.28	25.76	26.25	16.32	12.68	14.11	16.17	13.22	16.92
Oklahoma	9.35	8.16	4.55	7.67	7.92	8.00	13.57	12.56	12.50	12.30	30.48	15.12	8.00	12.60	10.00	16.91	6.75
Texas	11.40	12.98	7.60	13.44	19.68	14.43	13.63	19.76	18.37	17.60	35.40	21.84	13.61	16.60	18.50	17.60	9.35
Montana	30.10	21.85	21.20	17.85	24.26	21.28	19.32	23.25	21.88	28.35	6.60	9.68	13.40	12.88	16.90	17.82	15.68
Idaho	22.95	22.72	25.50	22.96	21.76	22.32	22.75	35.00	48.05	73.20	52.80	36.00	17.50	30.02	32.34	34.69	30.75
Wyoming	21.84	6.60	11.40	14.72	23.20	17.50	16.75	19.80	35.00	35.00	26.40	13.44	11.00	14.40	18.90	11.28	16.10
Colorado	16.94	11.94	10.92	10.40	10.95	13.80	13.20	13.95	25.00	23.62	21.30	14.35	4.50	10.56	16.25	8.80	10.50
New Mexico	28.17	20.70	20.75	16.80	13.88	22.40	18.98	23.73	37.60	45.00	32.62	23.87	19.80	11.15	15.58	19.80	18.00
Arizona	32.10	35.75	32.01	33.00	30.80	38.40	34.50	49.00	51.30	58.80	58.00	37.40	29.00	34.50	36.00	27.50	26.00
Utah	27.32	25.45	28.35	22.50	23.80	26.25	27.20	37.95	42.50	50.68	28.80	32.85	18.70	20.74	23.66	29.00	23.30
Nevada		30.00	27.45	29.40	40.12	39.60	32.55	42.50	45.00	67.20	37.66	51.20	34.92	22.16	29.12	27.10	30.00
Washington	23.91	21.00	22.52	21.02	22.40	19.71	20.79	37.00	59.94	64.60	66.60	45.00	34.40	43.05	35.15	33.60	33.25
Oregon	24.56	20.40	22.80	23.62	19.95	24.60	28.70	31.82	45.00	48.05	41.08	40.30	25.20	30.03	31.50	36.90	31.03
California	31.67	30.00	32.40	31.45	29.04	31.32	36.08	39.68	59.20	67.55	57.28	39.60	26.95	36.00	37.80	46.64	41.42
United States	15.32	13.31	14.79	14.20	15.99	16.65	16.22	21.66	33.58	32.70	38.91	21.14	12.50	18.58	21.25	22.46	19.25

Division of Crop and Livestock Estimates.

TABLE 656.—*Oats: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	21.46	20.35	20.79	17.65	22.00	23.37	18.00	24.12	24.65	36.00	31.28	35.53	19.25	17.86	20.72	24.70	24.75
New Hampshire	20.16	21.83	20.62	18.72	19.60	22.04	20.52	25.53	31.92	33.06	28.05	29.25	21.00	22.80	24.00	28.47	24.96
Vermont	16.10	20.75	20.65	20.64	20.28	23.38	22.79	20.80	30.60	36.90	26.55	26.25	19.47	19.04	22.05	26.22	23.60
Massachusetts	17.98	17.75	20.30	15.98	18.90	20.72	18.36	21.12	29.97	36.40	29.70	27.20	18.29	21.42	22.05	23.80	24.70
Rhode Island	13.25	16.80	16.82	12.87	13.00	15.95	16.50	18.36	23.25	37.80	28.50	22.40	16.80	18.60	19.20	22.50	21.45
Connecticut	14.58	16.19	19.66	15.04	15.40	15.95	17.88	20.70	26.07	34.20	25.96	22.50	18.00	18.20	17.98	20.30	20.13
New York	13.82	14.49	15.04	12.94	15.74	16.06	18.22	16.12	26.25	34.44	21.16	25.80	11.28	15.30	17.71	22.32	18.72
New Jersey	12.75	16.32	14.25	12.14	13.63	15.66	15.60	18.30	23.80	31.60	24.00	24.00	10.80	17.05	13.20	19.20	16.20
Pennsylvania	13.00	14.43	14.15	13.57	14.26	15.30	16.72	17.67	25.55	31.20	24.80	25.74	12.82	16.32	15.08	22.32	17.85
Ohio	13.32	13.02	14.44	14.52	12.08	13.72	14.76	14.84	28.16	30.80	23.76	22.10	7.59	12.15	15.52	21.32	16.18
Indiana	11.90	10.97	12.34	12.03	8.13	12.26	13.60	15.30	26.46	28.14	22.08	18.86	6.96	8.40	10.92	17.76	10.36
Illinois	13.91	11.40	12.10	12.99	9.04	12.89	15.75	19.64	33.80	29.48	21.00	16.98	7.68	11.12	13.65	18.33	11.20
Michigan	12.50	11.90	13.16	11.52	11.70	15.08	14.70	15.90	23.04	27.60	17.75	19.01	6.55	13.94	13.76	18.62	12.80
Wisconsin	13.65	10.13	13.41	11.94	13.50	11.61	16.74	18.87	29.04	31.22	23.38	21.95	8.02	16.07	15.61	19.20	18.43
Minnesota	11.55	9.18	9.12	10.84	12.10	11.20	13.76	12.46	23.31	25.83	17.92	13.50	5.52	11.36	12.58	18.49	13.02
Iowa	9.45	10.21	10.46	11.93	11.73	13.53	12.80	17.76	29.61	26.88	22.14	14.04	5.98	12.98	13.39	18.48	12.96
Missouri	11.61	10.75	6.66	11.55	9.54	9.46	9.88	13.25	24.40	20.30	19.17	14.94	6.00	7.04	11.25	12.75	11.44
North Dakota	10.56	2.59	9.64	9.11	7.71	10.36	10.80	9.46	9.30	14.34	10.38	8.40	3.99	8.58	6.44	11.88	7.29
South Dakota	10.20	6.90	13.18	8.45	9.01	10.45	11.76	14.03	20.74	23.01	18.27	11.22	4.40	9.92	10.54	14.80	9.52
Nebraska	8.75	7.84	5.98	7.32	10.07	12.80	9.92	16.68	23.18	14.43	21.32	12.80	5.69	7.92	11.22	12.04	9.86
Kansas	12.13	11.32	6.75	11.20	8.78	14.07	9.80	12.92	19.84	16.06	20.51	11.97	5.54	7.58	11.22	11.75	10.12
Delaware	12.24	14.53	14.10	13.72	15.56	13.50	17.08	18.60	24.96	30.45	20.70	23.10	12.88	13.11	15.60	19.80	16.25
Maryland	12.45	13.80	13.23	13.50	13.44	14.04	16.66	18.00	23.25	28.38	22.96	22.75	12.15	15.30	16.09	21.76	16.96
Virginia	10.26	10.78	10.80	11.54	11.18	8.99	13.75	14.80	20.58	23.00	22.00	17.74	11.48	11.80	13.86	16.92	15.05
West Virginia	11.88	12.60	12.32	13.16	12.24	11.00	14.79	14.72	21.33	24.57	19.11	21.33	11.44	13.34	15.12	17.52	16.74
North Carolina	10.89	10.92	10.40	11.53	11.90	11.38	14.26	12.95	14.88	18.36	17.70	21.12	12.60	14.07	16.28	15.12	14.44
South Carolina	15.12	13.65	14.69	14.19	16.68	14.20	12.73	14.40	15.00	25.96	25.30	24.72	17.52	18.24	19.68	18.92	17.10
Georgia	13.49	11.65	15.05	13.52	14.96	14.00	12.87	15.40	18.72	23.80	23.00	22.68	13.44	13.50	15.30	14.72	14.79
Florida	12.75	10.53	10.12	12.04	12.60	12.60	14.00	10.65	13.72	20.70	18.00	10.20	8.45	8.84	9.60	12.15	12.60
Kentucky	11.37	11.25	9.20	11.84	10.30	11.13	12.48	12.60	19.76	21.60	20.48	17.16	9.12	10.25	11.76	15.54	12.39
Tennessee	10.60	10.58	9.75	10.20	11.13	12.19	12.25	13.02	20.75	23.25	17.20	15.44	9.84	9.54	12.60	14.49	14.08
Alabama	11.55	11.10	12.67	12.40	14.14	15.13	11.97	13.12	18.36	20.33	18.90	15.84	14.30	15.00	13.60	13.05	13.26
Mississippi	10.88	10.56	11.96	10.44	12.60	14.95	12.90	13.32	17.86	21.40	16.80	14.79	12.80	12.54	14.44	13.60	14.82
Arkansas	13.45	12.65	10.60	9.95	14.04	12.72	14.04	14.28	21.00	22.44	19.36	19.50	9.90	14.25	14.26	11.52	9.28
Louisiana	12.40	10.54	13.65	10.61	12.54	14.49	13.75	12.92	20.96	24.75	22.00	18.86	16.10	15.39	14.96	16.60	16.80

Oklahoma	13.34	13.50	4.32	8.53	8.10	11.28	9.45	7.12	17.25	20.16	22.40	14.52	5.40	9.00	10.40	13.25	11.73
Texas	11.59	16.45	13.55	15.48	16.58	12.00	14.91	17.38	21.32	15.52	26.88	14.52	7.02	12.65	18.24	20.66	7.75
Montana	21.55	17.48	19.92	16.80	13.92	13.65	16.64	17.86	16.20	24.00	5.46	11.22	8.16	11.84	12.54	13.86	11.92
Idaho	22.25	16.17	17.60	17.12	14.88	16.72	15.98	23.23	29.26	37.60	29.40	25.84	13.76	17.48	20.24	20.88	21.07
Wyoming	17.50	16.00	17.25	15.47	15.20	16.80	18.06	21.00	28.80	32.80	13.44	23.56	11.40	12.40	15.98	17.40	16.10
Colorado	20.14	17.99	16.80	16.26	15.40	18.00	15.99	19.80	28.38	24.00	23.58	18.90	10.23	11.25	14.72	14.50	13.50
New Mexico	26.40	16.99	22.12	15.62	18.00	17.10	18.03	19.43	25.20	24.92	26.03	21.92	13.30	9.05	14.00	12.00	12.80
Arizona	29.23	36.09	25.20	31.29	21.50	29.40	23.68	30.00	38.40	48.00	35.00	25.92	22.75	21.08	24.00	22.68	22.50
Utah	23.97	20.64	21.01	22.74	18.40	21.50	21.15	26.54	37.40	43.65	27.34	27.04	13.47	18.33	21.92	23.17	29.14
Nevada	23.60	28.16	27.90	20.80	27.95	28.60	24.75	32.25	38.40	44.84	25.30	44.64	28.28	27.90	28.67	24.48	29.25
Washington	23.52	20.54	23.26	19.28	19.00	19.74	18.50	26.52	31.18	26.46	37.20	33.55	21.00	22.74	28.50	22.72	22.88
Oregon	19.66	16.22	15.27	15.66	16.07	15.75	16.28	23.52	18.75	24.00	28.80	23.72	12.16	14.25	17.55	17.08	16.83
California	20.72	18.50	20.06	21.45	18.96	18.55	16.50	23.40	29.75	30.08	27.84	24.00	13.77	22.40	19.50	18.10	20.98
United States	12.34	10.88	10.98	11.93	11.45	12.99	13.65	15.80	24.37	24.59	20.66	16.20	7.16	11.74	13.20	17.01	12.66

Division of Crop and Livestock Estimates.

TABLE 657.—*Barley: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	21.94	23.56	25.20	20.17	22.40	24.30	19.88	27.04	27.30	37.25	47.60	35.88	22.36	28.00	30.00	28.08	28.00
New Hampshire	20.00	20.02	20.64	23.52	22.40	26.24	23.70	25.20	43.75	48.00	46.62	37.96	25.30	27.44	22.52	27.30	23.80
Vermont	23.10	21.08	25.01	28.00	25.60	25.88	26.25	27.50	40.60	47.43	37.50	33.60	20.00	28.13	27.55	31.93	26.56
New York	17.11	19.81	24.25	17.68	18.42	19.88	24.00	23.53	36.40	39.69	29.92	28.71	13.02	19.24	20.10	27.85	22.33
Pennsylvania	14.61	16.70	16.25	18.70	18.46	19.60	22.12	18.75	39.20	33.60	31.36	21.60	13.33	16.58	16.13	23.85	21.93
Ohio	15.80	17.10	22.85	17.05	13.92	14.75	16.74	22.24	38.94	29.30	28.75	22.71	13.26	12.68	17.01	23.80	21.70
Indiana	14.80	15.12	19.88	17.70	12.50	16.75	18.20	20.25	31.72	38.48	29.50	23.49	9.12	9.86	14.95	18.48	16.33
Illinois	14.56	16.91	25.76	16.70	14.82	18.00	19.38	32.96	45.38	32.40	32.67	24.93	12.10	17.11	16.82	24.00	20.79
Michigan	15.07	15.08	20.64	16.90	14.88	16.90	18.29	22.30	29.04	30.00	20.06	22.62	9.98	16.70	15.36	23.44	17.64
Wisconsin	15.68	16.58	25.24	16.17	15.00	16.93	19.88	31.50	39.68	32.84	32.06	26.63	11.48	18.30	17.38	24.96	24.29
Minnesota	11.09	12.60	18.24	11.56	11.52	12.19	14.94	16.53	29.97	24.80	23.20	15.50	6.80	12.46	11.00	22.08	15.60
Iowa	10.12	16.52	20.37	16.12	13.75	14.30	15.19	26.84	40.95	26.78	28.56	17.32	9.87	14.01	14.82	21.70	17.67
Missouri	17.00	16.20	15.00	16.37	13.20	15.60	15.75	18.60	23.50	28.75	39.00	27.44	14.30	16.56	21.06	20.50	29.45
North Dakota	9.03	3.02	16.58	10.46	8.00	8.78	14.08	12.40	12.50	15.70	12.42	10.08	4.50	9.94	6.65	15.50	9.68
South Dakota	8.78	10.37	4.75	10.92	8.05	11.50	14.72	18.84	29.70	23.01	25.30	13.00	4.93	9.66	9.00	17.28	12.22
Nebraska	9.46	8.32	6.60	9.24	7.84	11.04	13.02	21.00	25.97	14.02	25.70	14.50	6.92	8.46	12.32	15.75	13.12
Kansas	9.54	8.10	3.90	9.40	4.46	11.52	13.02	12.32	9.20	9.50	27.00	11.43	5.80	7.78	10.88	10.72	6.55
Maryland	20.48	18.91	13.80	18.36	18.56	21.73	23.80	23.36	32.50	37.20	40.59	30.25	20.10	24.00	26.40	30.69	28.71
Virginia	20.24	19.63	16.10	18.75	18.20	20.80	21.75	23.38	41.70	43.20	32.50	27.00	16.56	22.00	21.60	28.35	25.22
Kentucky	18.24	15.60	22.67	19.50	20.75	21.94	23.10	23.40	32.20	39.20	39.25	32.20	14.64	23.80	22.68	24.24	24.70

TABLE 657.—*Barley: Value per acre based on December 1 price, 1909–1925*—Continued

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Tennessee	18.96	18.40	25.20	20.80	17.50	22.14	18.00	23.70	21.60	34.96	36.00	25.30	21.00	18.00	23.00	22.00	25.30
Oklahoma	14.95	16.20	6.10	10.00	7.20	13.25	13.25	12.50	26.64	21.08	36.60	17.28	9.90	9.35	15.40	16.10	10.50
Texas	19.40	27.00	16.74	22.85	19.44	17.50	19.04	13.60	27.40	22.10	39.20	17.25	10.80	12.35	16.32	19.00	6.48
Montana	23.94	17.36	23.46	19.34	14.88	16.16	16.32	21.28	15.45	22.00	7.84	11.70	12.30	12.50	12.24	17.25	15.12
Idaho	23.60	16.50	29.40	22.18	20.16	19.09	21.06	31.98	30.45	36.40	36.40	26.25	15.04	22.10	24.94	25.42	24.64
Wyoming	22.94	20.10	25.50	21.08	18.60	21.12	19.80	28.71	46.80	48.10	26.25	39.60	18.85	16.80	19.50	20.88	20.13
Colorado	23.76	19.20	20.01	19.50	18.20	21.88	17.28	26.24	34.32	29.34	22.80	18.38	8.14	11.21	15.66	14.40	12.18
New Mexico	40.00	26.00	23.10	24.85	17.28	25.50	23.10	28.00	38.92	30.80	26.18	17.70	14.64	14.25	15.20	9.00	14.45
Arizona	35.20	32.40	31.76	34.80	28.47	21.60	20.72	37.80	52.50	44.20	49.00	47.60	25.60	28.05	33.25	26.40	35.00
Utah	26.40	21.60	28.38	26.55	21.18	22.50	22.10	27.36	44.40	49.00	32.29	31.20	15.36	19.25	28.42	24.80	36.55
Nevada	28.50	28.00	32.40	35.67	36.90	30.55	33.60	38.95	41.65	52.36	39.75	49.50	24.88	29.40	21.08	43.78	39.36
Washington	25.28	16.56	25.16	22.79	21.06	20.28	23.24	34.69	33.35	17.48	40.50	35.30	19.14	17.76	27.42	19.21	23.12
Oregon	20.79	19.53	22.10	19.80	19.25	18.30	22.32	30.80	33.35	34.00	34.65	32.20	16.00	19.98	23.45	22.00	24.09
California	19.61	17.05	23.80	21.00	17.68	17.70	17.98	26.60	34.80	29.90	38.07	23.00	14.00	19.22	21.14	24.71	23.25
United States	13.37	12.97	18.25	15.00	12.77	14.00	16.53	20.71	26.95	24.12	26.50	17.77	8.76	13.06	13.66	19.20	15.49

Division of Crop and Livestock Estimates.

TABLE 658.—*Flaxseed: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Wisconsin	19.58	22.00	22.20	15.88	17.22	16.88	24.30	28.50	.....	36.30	45.15	23.32	15.75	23.40	25.41	29.25	31.19
Minnesota	15.00	17.25	14.56	12.24	11.07	11.90	18.48	20.40	28.02	35.16	35.60	17.38	14.34	21.80	21.30	26.56	23.00
Iowa	12.74	26.84	14.80	14.26	11.56	11.40	13.50	21.50	30.25	35.20	39.90	18.00	13.31	19.24	19.74	26.32	23.10
North Dakota	14.60	8.46	13.98	11.96	8.71	10.62	17.62	25.96	11.70	26.91	20.29	9.43	9.30	19.90	16.32	19.30	14.69
South Dakota	14.19	11.45	9.42	9.72	8.64	9.22	18.37	22.97	20.93	30.88	29.75	16.50	9.04	19.10	17.68	19.85	15.30
Nebraska	10.37	18.00	9.25	12.16	6.60	8.33	16.17	18.40	13.75	31.35	20.00	13.95	12.00	15.20	23.10	15.75	20.70
Kansas	7.70	17.22	5.70	7.80	6.96	7.50	8.26	13.57	20.30	16.50	23.94	12.42	9.04	11.16	16.34	13.98	13.60
Montana	19.20	16.80	13.86	13.44	10.35	9.60	17.85	23.56	8.85	10.14	5.72	4.55	7.60	14.18	15.83	19.23	9.90
United States	14.45	11.95	12.79	11.29	9.34	10.53	17.69	24.11	13.70	23.81	20.94	10.81	10.51	19.71	17.91	20.78	16.55

Division of Crop and Livestock Estimates.

TABLE 659.—*Buckwheat: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	19.60	22.10	21.00	20.58	17.92	17.40	18.20	22.80	32.25	30.00	42.00	41.31	27.00	29.70	21.85	22.80	26.00
New Hampshire	16.72	19.22	22.11	22.32	20.46	17.50	24.30	20.00	29.28	34.60	28.08	24.40	18.48	31.25	22.00	25.30	21.60
Vermont	16.72	16.80	20.66	21.60	20.00	22.96	22.14	18.38	30.00	33.60	37.40	28.35	19.80	22.08	18.00	23.10	19.80
Massachusetts	14.48	18.70	18.69	17.85	13.60	15.54	15.20	22.40	24.90	31.36	32.00	26.60	22.50	28.98	23.00	23.75	20.90
Connecticut	19.50	16.18	18.05	18.04	16.15	17.58	19.20	22.80	34.60	39.90	36.00	27.20	24.32	25.20	17.60	20.71	23.50
New York	16.56	14.95	15.55	15.23	11.58	17.48	15.20	14.64	28.80	26.25	31.90	28.00	17.84	21.00	18.24	21.21	16.34
New Jersey	16.13	14.84	15.00	15.84	16.72	17.43	17.43	20.52	28.44	30.60	27.00	27.00	21.00	25.30	19.95	22.23	21.00
Pennsylvania	13.26	12.09	15.11	15.49	13.50	15.58	16.38	15.54	29.34	28.80	30.24	21.60	17.25	16.80	19.56	19.57	20.93
Ohio	16.54	13.50	16.38	13.65	13.68	18.24	17.71	19.47	26.32	24.96	35.96	21.94	26.25	16.00	18.80	16.48	16.94
Indiana	13.32	12.39	13.54	13.87	13.88	13.65	11.20	20.16	23.25	24.00	24.75	24.00	19.00	15.00	16.15	14.42	11.22
Illinois	14.56	18.00	17.20	17.60	13.60	16.82	15.30	22.10	32.30	32.04	32.40	24.48	19.14	11.90	15.15	16.80	14.00
Michigan	9.44	9.49	12.78	11.05	10.50	13.14	10.44	12.65	13.23	17.00	18.91	15.80	12.48	11.20	11.93	13.44	12.33
Wisconsin	9.59	10.50	13.12	11.22	11.38	13.30	10.79	16.24	21.23	26.24	24.30	19.20	11.18	12.53	12.46	13.39	12.64
Minnesota	10.79	11.52	13.68	13.65	10.56	11.90	13.12	16.80	18.90	28.90	24.70	16.96	11.20	11.20	11.70	12.24	10.50
Iowa	12.75	12.37	15.75	14.25	11.34	14.09	10.40	18.75	24.00	27.00	23.66	22.78	12.00	17.50	14.10	15.45	15.75
Missouri	18.90	14.36	10.50	14.25	9.35	14.42	13.50	18.62	21.60	23.40	27.60	24.80	21.00	16.25	15.34	13.65	12.60
South Dakota													11.20	5.60	12.04	15.84	8.40
Nebraska	14.40	18.00	15.20	16.20	15.80	15.54	19.00	18.70	24.00	23.10	28.80	16.00	12.80	13.60	15.30	15.00	14.00
Delaware	11.88	13.32	12.35	10.56	11.73	14.44	13.88	22.42	29.60	29.32	28.80	21.60	10.50	15.28	16.38	17.14	14.72
Maryland	12.28	12.21	13.40	12.42	12.38	14.98	14.40	20.90	34.65	33.00	35.65	26.60	16.15	17.72	22.10	19.25	24.00
Virginia	13.68	13.86	11.20	16.12	18.48	16.30	16.00	18.24	31.65	34.23	29.45	30.24	17.22	15.99	18.34	18.34	17.60
West Virginia	17.25	17.71	20.40	18.00	16.38	17.84	17.60	18.48	34.00	33.74	35.70	27.30	18.04	17.85	19.20	19.04	18.00
North Carolina	15.84	15.20	15.20	14.88	15.05	15.77	14.35	14.88	26.60	30.00	23.80	22.00	14.45	19.40	23.76	21.42	15.40
Kentucky											13.00	15.00	20.00	14.40	18.00	16.66	12.50
Tennessee	11.85	12.90	12.64	14.04	11.25	17.39	13.68	18.00	25.50	25.20	23.25	21.45	17.10	11.60	20.71	23.75	17.25
United States	14.38	13.53	15.26	15.12	12.98	16.28	15.40	15.88	27.74	27.40	30.05	24.06	16.97	16.87	17.63	18.53	16.83

Division of Crop and Livestock Estimates.

TABLE 660.—*Rice: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
South Carolina	23.30	15.75	8.78	23.25	27.00	23.92	21.87	12.60	48.75	44.85	72.00	72.50	24.25	29.90	30.00	19.60	20.00
Georgia	20.79	16.50	20.64	27.00	26.56	24.92	25.78	17.40	58.50	45.50	66.00	58.50	23.92	28.20	29.96	23.80	24.65
Florida	20.00	15.12	18.75	22.50	15.00	17.50	18.75	18.75	50.70	33.60	68.38	42.00	21.34	32.50	31.05	------	------
Mississippi	24.00	21.00	27.72	31.50	19.60	25.50	22.00	22.40	57.00	34.50	55.29	62.00	23.60	20.90	20.70	13.60	19.80
Arkansas	36.00	28.00	31.98	35.25	32.40	35.82	45.98	48.48	77.90	68.22	110.40	64.19	49.22	42.24	44.24	58.93	69.30
Louisiana	26.70	23.05	24.88	31.16	24.36	29.85	30.78	41.40	58.90	56.16	95.39	39.60	30.96	32.04	35.84	47.06	50.95
Texas	26.52	22.44	27.44	33.37	27.52	31.10	27.14	38.70	60.00	63.04	89.60	42.50	36.46	28.08	46.00	55.88	53.64
California	------	21.45	30.00	45.50	48.00	53.30	60.03	46.02	119.40	124.45	160.20	61.71	62.10	60.50	59.92	80.51	78.20
United States	26.87	22.99	26.26	32.40	26.71	31.48	32.64	41.78	67.16	66.19	105.28	46.43	38.87	36.55	41.51	54.07	57.79

Division of Crop and Livestock Estimates.

TABLE 661.—*Potatoes: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	105.75	92.40	138.60	108.90	116.60	85.80	125.30	289.68	162.50	240.00	322.00	221.25	253.30	84.15	180.60	135.45	510.00
New Hampshire	83.20	78.00	108.75	85.40	101.26	95.40	90.25	199.20	178.69	203.00	178.50	196.85	216.00	105.60	218.50	142.80	340.75
Vermont	68.20	58.50	82.35	77.00	91.44	78.96	87.48	155.68	140.00	179.40	157.00	162.50	156.00	111.60	200.00	136.00	268.75
Massachusetts	98.76	87.50	89.28	97.50	89.25	116.05	112.80	159.25	201.25	226.10	171.00	187.50	174.80	85.50	243.00	144.00	343.00
Rhode Island	100.00	93.84	116.60	87.01	117.00	115.50	101.20	136.90	236.25	224.99	180.00	176.00	184.00	81.00	214.50	133.00	343.00
Connecticut	99.60	87.50	89.25	83.46	80.04	91.00	91.20	166.25	180.40	156.75	146.25	172.50	154.50	140.00	235.20	130.00	337.50
New York	60.00	48.96	66.60	61.48	59.20	63.80	50.84	110.60	123.50	119.56	158.05	147.50	111.24	66.00	116.85	79.80	184.90
New Jersey	73.80	68.25	76.65	71.28	77.90	65.88	97.50	189.10	160.74	156.40	162.24	195.00	134.90	124.56	104.50	100.50	242.30
Pennsylvania	50.70	45.76	52.08	62.13	70.40	60.90	54.00	103.60	121.20	120.80	154.00	142.60	114.38	81.00	110.25	94.40	238.62
Ohio	52.08	41.82	54.60	59.36	54.40	50.35	57.40	81.90	143.60	103.50	117.12	135.00	89.90	80.10	98.00	78.32	212.00
Indiana	49.40	42.60	50.46	57.00	44.52	44.80	53.20	77.88	127.88	108.00	85.80	127.68	73.95	63.84	90.30	79.20	179.28
Illinois	55.51	44.25	45.00	60.60	40.94	36.60	64.90	105.82	136.80	106.56	101.92	94.25	74.20	56.70	80.96	82.50	141.00
Michigan	36.75	32.55	66.74	43.05	50.88	36.30	33.00	76.80	99.75	74.76	121.50	96.60	76.00	36.01	50.16	45.50	166.86
Wisconsin	38.76	36.10	71.92	40.80	58.86	37.20	39.15	69.09	102.60	88.00	131.60	92.88	64.60	40.92	45.12	46.80	190.40
Minnesota	40.25	39.04	66.70	37.80	57.20	36.48	41.34	78.00	101.92	78.75	133.11	79.20	67.50	31.50	39.78	35.64	149.38

Iowa	48.95	43.20	54.02	50.14	39.36	50.74	56.70	73.50	124.45	95.76	88.32	134.20	60.20	70.35	64.68	74.80	148.05
Missouri	56.95	58.48	27.51	57.90	35.34	32.85	58.80	108.00	119.19	93.33	138.00	123.82	78.30	55.20	88.00	80.36	128.25
North Dakota	49.50	37.31	66.00	35.84	47.60	45.78	36.90	106.95	55.99	72.27	100.80	77.42	67.20	27.90	29.05	35.88	105.00
South Dakota	50.40	37.40	50.40	37.80	49.14	42.30	40.25	90.42	99.90	84.63	95.00	102.32	65.27	34.32	38.72	39.36	117.00
Nebraska	46.80	50.40	47.84	40.80	37.44	43.20	44.10	109.50	90.95	101.48	104.50	118.80	96.00	39.48	56.00	53.94	135.00
Kansas	62.41	51.30	23.32	59.86	36.40	47.74	61.42	117.15	86.64	76.32	144.40	127.50	86.40	58.88	85.14	86.45	157.45
Delaware	69.12	61.80	57.60	76.00	65.25	56.00	71.25	112.50	123.50	121.80	103.75	106.00	55.00	67.20	81.60	72.00	128.00
Maryland	52.80	51.30	40.95	64.96	58.29	46.80	60.14	126.35	119.00	96.00	122.20	96.90	71.50	60.60	80.00	76.95	141.62
Virginia	64.40	56.84	43.20	56.55	75.20	50.05	76.25	178.10	123.75	112.80	178.98	114.00	118.80	69.55	80.91	107.42	175.50
West Virginia	66.64	61.64	46.80	69.44	74.70	43.74	76.05	139.04	151.80	139.20	157.50	162.00	138.55	86.13	126.00	93.10	167.91
North Carolina	59.94	64.97	51.84	64.60	65.60	47.84	65.70	133.00	128.70	128.25	130.40	129.22	125.84	94.94	103.20	117.60	140.40
South Carolina	97.75	94.50	85.40	100.80	104.00	87.50	92.00	131.25	201.60	196.86	170.00	180.00	127.50	97.28	164.80	160.95	182.70
Georgia	81.00	86.10	79.20	67.86	85.05	63.00	64.35	105.00	163.80	129.50	151.90	153.92	123.75	95.20	112.00	108.00	102.90
Florida	114.00	90.00	130.50	102.30	88.92	90.40	92.00	148.00	186.55	200.00	159.00	219.00	174.80	192.50	174.80	145.20	293.80
Kentucky	58.88	57.04	41.73	67.67	49.98	37.80	69.30	119.28	134.40	123.75	147.00	148.50	107.25	80.00	102.00	102.00	120.00
Tennessee	53.25	52.00	44.28	61.60	62.08	39.13	55.44	122.18	118.44	115.50	115.24	132.80	85.80	88.00	100.80	89.60	109.20
Alabama	78.40	75.20	92.04	72.90	88.20	79.79	72.00	152.10	131.04	144.80	172.00	134.00	127.50	120.00	120.00	139.50	125.40
Mississippi	82.65	79.90	95.45	80.10	80.00	76.00	75.09	104.00	131.04	132.00	157.25	174.00	136.00	135.00	113.96	132.84	134.00
Arkansas	64.40	71.40	63.25	64.40	72.00	58.20	68.40	123.50	125.60	92.00	140.65	136.50	99.00	88.40	80.24	94.72	126.00
Louisiana	68.25	49.50	69.00	60.59	67.20	67.90	48.45	108.55	117.76	118.50	140.80	131.95	120.60	97.50	94.50	102.00	126.00
Oklahoma	66.50	60.00	22.32	55.80	63.00	63.00	71.40	103.35	124.20	66.30	153.75	133.20	107.30	83.64	84.48	91.90	162.00
Texas	53.00	56.10	71.82	66.15	58.24	63.44	68.25	95.00	126.00	110.00	153.30	114.40	106.40	99.20	88.00	113.90	127.20
Montana	91.80	102.00	111.00	66.00	93.80	89.60	77.50	150.00	96.90	108.00	96.00	115.50	92.00	50.40	71.50	76.56	172.80
Idaho	96.00	92.30	117.00	53.65	85.00	74.40	70.00	100.50	123.24	149.85	234.05	122.40	142.45	57.35	90.00	91.80	284.20
Wyoming	100.80	82.00	58.80	84.00	91.00	75.60	90.00	166.40	161.20	127.50	152.00	150.00	127.44	55.00	93.00	82.65	192.00
Colorado	91.20	55.00	34.65	38.95	74.75	60.00	74.25	186.30	145.60	158.40	195.50	104.00	96.36	48.10	65.19	90.00	255.75
New Mexico	86.00	48.88	80.00	65.00	95.20	95.00	95.00	173.50	191.40	160.00	110.20	157.50	168.00	72.50	80.00	54.08	150.00
Arizona	117.00	115.92	133.00	156.25	101.25	132.00	95.00	207.00	157.50	174.25	136.50	171.00	161.00	76.50	84.00	81.00	131.10
Utah	77.40	83.78	119.00	90.65	104.40	84.00	78.75	234.00	147.42	174.60	186.32	151.20	136.85	78.80	117.60	100.64	239.40
Nevada	153.00	120.00	148.80	106.80	108.80	91.00	120.40	247.00	248.40	210.33	202.50	210.60	177.60	104.40	182.70	159.00	427.50
Washington	79.90	95.63	108.80	60.12	73.80	70.40	71.55	161.70	115.00	133.32	181.25	147.25	133.65	65.25	108.50	127.50	239.25
Oregon	90.00	73.50	87.10	48.05	78.30	58.20	69.00	135.00	86.40	110.00	141.00	104.00	98.10	54.60	66.50	91.20	156.00
California	100.10	110.50	121.50	84.50	83.30	96.60	97.50	197.40	217.50	171.60	222.30	210.00	182.00	93.60	168.00	144.00	310.00
United States	58.24	52.30	64.60	57.28	62.13	53.75	59.45	117.62	123.81	114.44	145.36	126.27	101.08	61.15	85.13	79.46	194.45

Division of Crop and Livestock Estimates.

TABLE 662.—*Cotton: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Missouri	38.57	38.76	33.02	30.55	34.45	18.33	27.50	44.79	54.67	56.70	87.08	39.14	50.92	80.90	58.01	44.99	32.03
Virginia	26.65	30.98	31.28	31.15	32.72	20.46	26.49	62.65	52.20	74.93	93.86	38.10	39.47	55.44	109.36	43.69	49.48
North Carolina	30.72	33.68	29.15	34.18	31.68	21.03	30.56	43.76	56.50	74.06	98.14	42.25	45.37	64.22	93.57	46.51	50.78
South Carolina	31.12	32.60	25.91	27.20	31.36	18.50	25.46	32.85	61.91	72.19	89.79	39.70	23.48	31.29	62.71	37.08	29.95
Georgia	27.40	25.75	22.38	20.65	27.88	17.26	22.55	34.33	52.22	54.64	56.91	22.09	15.66	25.00	27.51	36.84	30.45
Florida	21.99	24.08	16.24	18.49	26.54	22.43	18.34	33.64	52.24	37.87	32.47	15.40	15.09	24.38	12.09	30.54	35.47
Tennessee	22.82	30.59	23.64	21.90	27.86	13.41	22.21	42.04	37.22	48.80	68.51	25.16	38.10	48.63	30.85	41.27	33.55
Alabama	20.95	23.82	18.80	21.77	25.26	14.64	16.96	16.13	36.67	42.06	44.47	17.39	20.77	35.66	30.30	36.58	35.59
Mississippi	23.53	27.41	16.58	22.28	26.92	13.87	20.06	26.76	46.28	54.31	63.26	23.22	25.68	39.55	30.95	43.67	54.06
Arkansas	22.52	26.42	17.69	24.47	24.87	13.52	21.81	42.74	50.11	45.88	59.07	27.10	26.93	42.64	32.77	40.32	32.50
Louisiana	18.67	18.14	15.92	23.28	20.87	11.94	19.29	33.86	58.65	48.02	34.12	18.72	17.91	36.13	39.67	34.14	43.93
Oklahoma	20.05	27.85	13.40	21.65	15.92	14.41	19.07	30.54	45.66	24.53	73.78	25.52	16.80	24.75	30.35	43.42	25.42
Texas	17.76	21.22	16.73	24.75	18.01	13.09	17.04	31.70	37.62	33.85	51.77	24.10	16.47	31.88	46.65	32.27	21.83
New Mexico													48.44	54.86	75.63	70.66	54.36
Arizona									73.43	140.47	142.63	67.25	67.99	69.43	103.76	78.91	64.36
California		44.23	30.59	57.05	65.00	37.11	41.00	83.88	59.53	81.00	115.24	75.19	52.71	41.22	104.82	71.53	80.58
United States	22.55	25.32	19.08	23.83	23.26	14.91	20.10	32.08	46.28	46.20	60.62	26.02	21.11	35.03	42.34	37.26	30.90

Division of Crop and Livestock Estimates.
Value per acre obtained by dividing the value of the total gross pounds of lint by the harvested acreage of cotton. This does not include the value of the cottonseed.

TABLE 663.—*Hay, tame: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollasr*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	13.96	16.00	15.84	15.89	13.90	15.06	17.14	17.98	14.98	15.98	22.25	23.37	16.20	16.38	17.28	14.43	14.52
New Hampshire	17.36	18.96	18.06	18.75	17.20	19.55	17.40	21.02	16.20	21.62	28.80	28.25	26.88	23.98	23.18	20.54	22.57
Vermont	18.38	16.74	18.20	21.60	18.56	17.52	20.92	21.12	18.63	21.19	30.35	30.82	22.66	24.32	23.10	24.15	20.72
Massachusetts	21.74	24.45	24.84	26.88	25.53	28.38	33.00	29.64	29.85	31.20	36.72	39.20	34.02	30.36	35.62	30.72	30.59
Rhode Island	20.46	23.13	24.10	25.09	24.80	23.63	27.90	27.00	30.45	33.15	44.48	43.49	34.83	34.18	33.23	31.68	31.49
Connecticut	22.20	25.65	25.85	25.88	22.91	24.38	27.00	28.68	29.25	31.20	40.17	36.60	33.28	35.10	31.68	31.25	31.12
New York	14.91	18.08	18.26	18.62	17.44	17.52	20.41	19.28	22.05	25.50	28.70	29.50	18.18	19.74	22.03	21.02	20.15
New Jersey	20.62	27.30	23.10	28.80	24.70	26.32	27.55	28.16	29.00	42.00	43.65	45.10	23.94	29.14	28.24	34.58	31.40
Pennsylvania	17.52	20.70	20.00	22.31	19.67	18.56	21.84	22.68	24.68	33.42	33.12	33.37	20.40	22.45	22.58	25.76	23.63
Ohio	15.59	17.38	18.52	17.68	16.64	15.14	18.29	16.64	26.98	31.08	29.21	26.32	14.60	16.20	20.04	20.35	16.57

Indiana	14.70	15.47	15.79	15.62	14.10	14.10	16.50	15.70	27.12	28.71	26.78	25.23	14.17	15.34	19.34	18.38	15.66
Illinois	14.36	15.96	13.94	16.38	13.82	12.24	16.63	16.38	25.00	28.35	28.89	25.75	15.93	18.12	19.24	20.12	17.01
Michigan	14.82	17.68	19.72	16.89	13.76	15.36	17.08	17.10	25.80	24.20	28.08	25.20	13.00	14.64	18.27	18.88	16.50
Wisconsin	14.69	15.10	18.72	19.36	17.98	16.28	17.32	19.72	29.41	30.24	36.13	34.68	20.79	20.91	21.28	24.87	22.26
Minnesota	10.50	9.10	11.90	9.79	9.90	11.53	12.22	12.95	18.76	19.74	26.82	19.38	13.42	16.91	14.12	19.55	19.25
Iowa	11.64	10.08	10.00	13.30	14.21	13.94	15.66	14.40	20.66	23.66	28.54	24.68	13.76	14.70	19.00	20.29	18.09
Missouri	11.20	11.96	7.98	12.74	8.70	9.52	12.92	12.09	20.12	18.45	26.32	20.72	11.76	12.65	14.64	16.68	14.08
North Dakota	6.85	4.18	7.70	7.70	6.61	7.54	8.55	10.20	10.12	16.06	15.93	12.28	10.47	11.78	10.13	11.93	11.66
South Dakota	7.65	5.68	4.68	8.91	7.80	9.69	10.60	10.26	15.90	16.00	24.63	15.81	10.24	13.58	14.27	14.68	14.52
Nebraska	9.00	8.90	8.24	11.34	11.66	11.66	15.08	14.91	24.32	24.08	31.78	21.78	15.19	21.84	24.58	21.41	26.26
Kansas	8.70	8.97	8.42	11.40	11.25	11.17	12.88	11.78	36.19	33.56	32.71	21.22	14.24	20.00	23.32	24.19	24.44
Delaware	21.00	21.16	19.80	19.95	20.41	18.70	20.40	23.06	25.83	35.00	35.36	31.60	21.35	28.69	24.57	25.67	27.40
Maryland	17.28	20.79	16.13	21.74	19.15	17.60	19.44	20.72	24.88	36.18	33.84	38.00	19.33	29.97	24.78	28.37	25.84
Virginia	17.29	17.26	13.12	18.24	19.68	12.38	21.20	20.25	24.71	31.05	29.39	30.55	17.35	20.16	20.00	24.21	15.96
West Virginia	16.62	18.00	13.20	20.70	18.62	15.82	22.50	22.33	26.80	30.55	31.74	31.94	21.18	22.51	23.88	26.75	24.20
North Carolina	19.87	21.90	17.85	21.71	21.62	19.55	30.52	22.75	22.26	25.20	24.68	24.84	23.56	21.84	24.40	20.16	14.74
South Carolina	19.06	20.00	18.36	20.70	21.69	19.55	20.28	21.71	22.25	28.71	27.59	23.50	16.60	17.32	14.40	10.34	5.00
Georgia	21.33	22.96	22.95	22.95	25.06	21.87	17.36	18.63	20.60	29.14	22.26	20.68	14.06	14.28	12.47	9.69	6.93
Florida	20.70	22.61	24.05	22.62	24.57	23.22	19.20	20.00	20.02	21.09	17.94	15.39	20.28	13.14	18.00	15.60	15.87
Kentucky	16.18	16.90	16.44	16.85	14.36	15.20	17.50	17.64	26.39	30.81	33.27	29.04	17.05	20.01	23.12	25.56	21.32
Tennessee	19.20	18.76	16.70	20.54	19.60	20.40	20.43	20.70	23.16	32.40	31.05	26.04	17.98	21.81	21.28	20.80	20.24
Alabama	20.25	18.88	17.92	18.25	19.31	18.08	17.98	14.30	12.96	16.44	20.74	17.36	14.20	16.15	14.80	13.68	13.80
Mississippi	16.90	17.32	16.50	18.50	17.96	17.40	15.40	15.40	22.18	22.20	27.88	22.36	16.53	17.69	19.38	16.45	17.70
Arkansas	13.50	14.85	14.95	14.76	16.20	13.54	16.48	15.62	22.64	25.35	26.04	21.28	15.75	17.00	20.16	18.04	14.10
Louisiana	16.05	20.12	15.60	20.96	18.75	22.80	18.02	18.70	22.88	27.56	32.43	21.92	18.06	17.69	21.60	12.99	17.10
Oklahoma	6.57	8.82	6.40	9.25	8.84	8.93	12.88	15.30	24.64	23.40	27.48	18.16	13.28	20.88	24.45	21.15	20.48
Texas	11.30	13.80	11.90	14.56	13.69	17.15	13.43	12.60	20.00	24.90	28.44	19.70	13.86	17.94	26.24	19.66	15.23
Montana	17.90	17.50	20.00	15.77	17.28	21.75	15.00	18.70	26.04	31.36	22.77	20.28	15.57	17.01	16.73	17.30	16.50
Idaho	25.94	27.00	23.56	17.64	20.88	19.34	20.79	30.25	48.00	52.80	49.50	33.75	18.96	25.20	22.25	26.47	27.88
Wyoming	21.36	30.00	21.63	16.34	12.73	17.25	17.16	21.60	28.90	29.40	32.89	23.76	13.50	16.15	18.53	17.64	17.27
Colorado	25.00	21.60	18.60	19.05	20.50	17.76	16.72	22.55	40.67	34.41	38.11	28.80	14.90	21.39	23.16	23.21	25.80
New Mexico	28.86	24.15	33.80	19.80	25.17	23.25	19.36	28.00	39.90	44.00	41.68	39.44	29.08	35.10	33.44	35.11	33.90
Arizona	42.24	27.30	46.32	40.80	44.00	28.16	30.72	55.10	86.80	76.80	73.20	93.09	40.17	59.22	53.40	60.15	58.99
Utah	26.10	27.00	22.50	22.24	21.20	21.18	20.00	33.00	43.50	40.18	43.36	33.54	15.69	22.55	23.94	24.24	29.70
Nevada	24.68	36.72	32.30	26.10	30.25	26.98	22.50	23.04	46.11	51.74	45.08	37.60	24.30	33.28	29.37	24.85	27.45
Washington	29.40	32.97	28.80	22.22	25.07	24.20	24.84	33.12	44.00	45.72	46.46	36.82	23.31	32.08	28.20	28.83	35.40
Oregon	23.98	25.41	20.16	18.26	18.90	18.40	20.90	25.07	34.12	36.00	35.14	31.03	20.58	27.20	24.64	19.42	24.01
California	19.55	17.57	19.08	20.96	20.25	15.99	20.16	22.05	38.40	25.00	38.70	45.60	25.63	37.05	35.70	50.56	42.56
United States	15.41	16.51	16.27	17.30	16.28	15.85	17.88	18.36	25.79	27.68	30.67	27.29	16.98	19.65	21.07	21.96	20.36

Division of Crop and Livestock Estimates.

TABLE 664.—*Sweet potatoes: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
New Jersey	97.17	85.40	130.00	100.80	107.64	95.00	108.50	120.00	192.00	218.50	275.00	221.65	187.00	126.00	176.90	217.00	280.80
Pennsylvania	78.32	73.75	127.05	90.00	99.00	90.30	78.75	135.00	154.00	222.00	252.00	213.90	223.20	155.40	182.00	175.50	241.50
Ohio	92.40	84.28	113.00	102.66	95.40	105.60	93.10	148.50	166.25	168.00	215.00	180.25	190.46	162.00	168.00	182.56	241.50
Indiana	84.84	86.32	109.44	103.24	80.34	90.00	93.60	150.00	174.90	210.60	225.75	192.00	198.00	150.00	147.50	163.30	205.20
Illinois	92.40	97.90	97.90	93.10	74.20	79.80	90.20	112.50	145.50	143.50	166.25	130.95	99.00	99.75	121.00	150.12	167.20
Iowa	101.20	102.90	115.50	97.20	120.00	127.00	102.60	174.72	189.00	195.30	167.50	256.88	182.00	109.20	105.00	152.00	250.70
Missouri	79.20	84.66	95.55	83.60	58.80	80.64	82.00	105.00	157.92	169.26	194.48	170.50	100.00	99.75	116.64	125.00	156.75
Kansas	102.72	104.03	97.50	101.97	55.00	116.60	110.00	138.00	147.20	177.60	201.65	216.00	143.75	109.20	133.75	152.55	197.20
Delaware	75.00	63.25	98.00	81.60	81.00	84.00	83.70	101.25	134.40	150.00	151.80	128.00	110.00	78.00	128.80	163.80	209.00
Maryland	78.20	63.80	86.25	78.75	84.60	87.50	91.00	110.88	118.00	195.00	186.20	144.90	140.00	76.50	149.50	177.80	219.30
Virginia	70.00	63.00	66.60	67.50	75.60	69.92	71.50	117.00	114.40	174.00	217.00	120.65	118.75	117.45	126.00	132.00	140.40
West Virginia	85.00	88.88	110.00	103.50	91.00	90.16	101.20	176.40	196.00	216.24	241.50	178.50	207.00	187.60	192.40	155.10	184.00
North Carolina	56.43	57.75	54.18	55.80	61.00	58.50	58.80	80.25	99.75	145.20	147.66	118.56	97.97	90.40	102.90	95.68	105.60
South Carolina	59.85	58.24	60.48	71.40	69.00	59.50	63.25	73.10	98.80	134.90	133.20	122.85	85.50	65.32	83.42	70.72	80.85
Georgia	57.66	53.95	59.13	59.40	59.16	58.65	51.85	64.80	97.65	115.00	101.20	90.21	53.55	50.63	63.84	70.00	58.75
Florida	74.55	81.00	89.64	81.76	82.50	96.00	76.16	86.00	109.25	137.50	140.00	114.00	81.60	79.90	113.68	109.20	119.00
Kentucky	64.24	63.75	84.48	76.50	70.50	80.85	73.50	90.00	118.75	166.25	168.00	157.50	119.60	111.10	123.60	102.40	137.70
Tennessee	59.16	58.65	63.75	64.80	64.00	69.00	61.95	87.00	99.75	133.28	131.04	125.46	95.00	74.10	110.00	133.00	126.00
Alabama	54.40	55.25	65.96	71.00	63.65	60.45	51.30	54.76	82.80	110.40	106.22	97.00	65.70	71.25	86.32	91.25	87.50
Mississippi	56.58	56.40	52.70	60.14	60.76	56.70	60.50	54.94	63.05	98.80	117.60	115.50	59.20	72.45	89.18	88.23	96.00
Arkansas	52.20	71.54	75.44	79.20	72.00	73.15	79.30	81.90	105.60	124.20	115.00	110.25	86.10	71.20	87.40	102.87	106.25
Louisiana	53.10	60.45	54.00	54.60	59.50	55.68	46.00	59.40	82.16	96.00	103.50	93.93	61.10	56.12	85.50	79.00	92.00
Oklahoma	79.80	77.00	93.75	100.28	66.56	90.78	83.95	99.90	144.00	143.00	198.00	151.80	103.88	89.68	101.70	130.50	126.90
Texas	49.50	60.48	73.84	78.00	76.00	87.87	68.60	80.10	109.20	101.50	165.00	136.50	69.70	70.55	91.20	90.06	103.66
New Mexico	216.00	118.00	216.00	148.05	162.50	161.59	192.00	225.00	241.90	312.50	270.00	259.60	312.00	224.00	268.00	306.00	231.00
Arizona	228.20	168.00	320.00	210.00	229.50	300.00	225.00	296.00	340.50	321.30	375.00	287.50	237.50	262.50	357.00	297.50	273.00
California	144.00	152.00	154.00	146.64	170.00	140.07	108.00	160.00	250.50	255.00	232.70	203.20	150.00	73.70	189.75	246.34	209.10
United States	64.04	62.74	68.10	69.06	68.61	68.48	64.27	77.70	101.11	126.45	138.70	118.78	81.51	75.47	95.76	102.03	109.97

Division of Crop and Livestock Estimates.

TABLE 665.—*Tobacco: Value per acre based on December 1 price, 1909–1925*

State	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Massachusetts	224.00	259.50	330.00	406.30	325.50	309.75	159.50	415.00	537.60	600.00	713.02	629.30	493.20	403.79	617.58	359.12	220.80
Connecticut	272.25	285.45	333.12	409.70	325.50	327.45	229.50	440.10	537.60	660.00	724.60	518.00	596.14	421.14	645.42	442.51	270.75
New York	94.00	106.25	138.32	163.80	124.44	156.00	114.00	159.90	275.00	225.00	290.25	345.60	241.25	410.70	225.00	262.02	242.00
Pennsylvania	88.65	139.50	134.90	123.25	90.00	123.25	124.20	193.12	294.00	198.80	224.40	302.00	210.24	211.20	237.11	196.25	210.00
Ohio	97.12	68.85	70.30	83.72	85.50	79.20	81.00	123.50	240.00	191.10	289.82	124.80	138.00	171.00	131.04	136.77	147.00
Indiana	104.50	83.60	70.98	72.00	82.50	81.00	61.32	120.90	190.00	192.51	281.60	126.00	131.25	153.00	125.86	148.24	156.78
Wisconsin	108.56	78.75	125.00	141.90	141.60	129.80	54.00	158.75	175.00	292.60	281.94	323.23	160.12	228.00	120.23	122.20	226.88
Missouri	115.05	126.00	96.00	120.00	82.55	156.00	108.00	142.50	199.28	225.00	360.00	330.00	185.00	261.00	308.00	275.00	220.05
Maryland	58.93	53.13	55.12	52.80	68.82	64.00	62.90	123.20	158.00	249.00	202.50	253.75	135.85	134.75	222.55	189.38	156.37
Virginia	65.88	70.20	76.80	72.00	107.03	58.50	70.50	99.28	185.50	207.90	251.22	175.20	112.75	180.00	145.04	139.10	110.88
West Virginia	115.50	65.92	60.00	83.60	81.60	90.20	87.00	135.00	208.00	263.52	350.00	200.00	180.00	181.50	189.20	165.85	141.05
North Carolina	57.00	63.60	82.36	99.20	123.95	74.75	69.44	110.00	198.45	247.46	330.18	175.58	145.86	151.50	161.76	144.48	151.80
South Carolina	58.40	54.18	102.06	76.30	104.88	70.81	40.60	72.80	164.01	223.92	164.62	97.50	69.30	147.20	138.70	82.45	125.80
Georgia	238.00	136.00	252.00	249.00	310.00	250.00	202.40	318.00	570.00	368.00	113.95	222.00	141.00	140.40	204.91	206.68	107.55
Florida	241.40	156.40	263.20	252.00	310.00	300.00	209.30	363.00	627.00	441.60	517.75	504.00	360.00	517.00	546.16	282.00	241.80
Kentucky	88.51	70.47	67.76	67.86	76.00	76.44	63.18	114.30	180.00	252.48	305.60	127.50	131.13	165.00	141.93	142.96	129.60
Tennessee	56.94	63.84	68.85	46.86	60.48	61.50	47.25	80.80	137.70	171.20	203.31	146.00	150.00	159.50	107.25	147.87	123.25
Louisiana	203.50	137.50	139.50	90.00	112.50	140.00	126.00	126.00	122.50	273.00	282.10	200.00	247.50	247.50	232.50	220.00	277.20
United States	82.14	74.77	84.12	84.88	100.72	82.85	70.28	120.08	197.92	244.23	292.60	171.26	149.07	170.65	164.55	150.55	141.62

Division of Crop and Livestock Estimates.

TABLE 666.—*Wheat: Cost of production, by States, 1924*

State	Number of reports	Average acreage in wheat per farm	Average yield per acre	Gross cost per acre										Credit per acre (straw)	Net cost	
				Prepare and plant	Harvest and thresh	Market	Miscellaneous labor [1]	Commercial fertilizer	Manure	Seed	Land rent	Miscellaneous costs [2]	Total		Per acre	Per bushel
		Acres	*Bushels*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
New York	126	12	22	6.73	5.81	1.58	0.20	3.14	2.89	3.09	6.29	3.22	32.95	5.02	27.93	1.27
New Jersey	18	8	22	5.66	7.48	1.38	.06	4.43	4.92	2.92	6.81	3.03	36.69	5.17	31.52	1.43
Pennsylvania	274	15	20	6.29	5.93	1.94	.11	3.11	4.11	2.78	6.00	3.85	34.12	5.89	28.23	1.41
Maryland	67	36	19	6.01	5.64	1.65	.07	4.46	1.84	2.56	6.18	3.04	31.45	4.52	26.93	1.42
Virginia	155	20	15	4.78	4.63	1.48	.18	3.25	1.89	2.19	5.71	2.58	26.69	2.46	24.23	1.62
West Virginia	72	12	16	5.66	4.79	1.71	.13	2.59	1.98	2.56	6.37	2.33	28.12	2.84	25.28	1.58
North Carolina	104	8	13	4.79	4.43	1.68	.11	2.77	1.47	1.98	5.82	2.34	25.39	1.74	23.65	1.82
South Carolina	29	13	12	3.48	4.19	1.79	-------	2.51	.78	1.89	5.27	2.34	22.25	1.34	20.91	1.74
Georgia	45	12	11	2.66	3.95	1.34	.17	2.72	1.31	2.02	4.20	1.95	20.32	1.56	18.76	1.71
Ohio	318	20	21	4.76	5.16	1.26	.16	2.65	1.60	2.59	6.25	2.87	27.30	2.56	24.74	1.18
Indiana	325	26	19	3.97	4.49	1.03	.10	2.10	1.44	2.24	6.25	2.27	23.89	1.86	22.03	1.16
Illinois	281	38	18	3.66	4.08	1.11	.23	.55	1.07	1.89	6.67	2.02	21.28	.98	20.30	1.13
Michigan	174	13	26	5.75	5.74	1.70	.11	2.24	2.62	2.45	5.68	2.57	28.86	2.64	26.22	1.01
Wisconsin	85	7	23	4.19	4.93	1.94	.16	.21	2.95	2.68	5.83	2.66	25.55	2.48	23.07	1.00
Minnesota	175	35	22	3.61	4.40	1.29	.22	.07	1.28	2.12	4.98	2.22	20.19	.77	19.42	.88
Iowa	116	20	22	2.93	4.45	1.12	.18	.03	1.14	2.07	7.83	2.18	21.93	.96	20.97	.95
Missouri	198	30	15	3.93	3.90	1.18	.19	1.16	1.09	1.66	5.05	2.21	20.37	.94	19.43	1.30
North Dakota	269	147	16	3.35	3.81	1.06	.13	-------	.20	1.49	2.62	1.99	14.65	.28	14.37	.90
South Dakota	249	63	15	2.63	3.51	1.20	.16	.02	.33	1.59	3.22	2.14	14.80	.35	14.45	.96
Nebraska	167	62	21	3.15	4.50	1.10	.16	.02	.82	1.59	5.57	2.39	19.30	.34	18.96	.90
Kansas	350	128	17	3.23	4.81	.91	.08	.06	.38	1.35	4.39	1.89	17.10	.31	16.79	.99
Kentucky	90	22	12	3.47	4.26	1.20	.25	1.79	.94	1.95	5.45	2.74	22.05	2.28	19.77	1.65
Tennessee	95	18	13	4.10	3.59	1.17	.25	1.62	1.34	1.87	6.42	1.99	22.35	2.07	20.28	1.56
Texas	70	122	19	3.31	4.84	1.33	.33	.04	.03	1.21	3.83	2.29	17.21	.51	16.70	.88
Oklahoma	128	87	17	3.09	4.90	1.08	.09	.03	.28	1.25	3.37	1.87	15.96	.38	15.58	.92
Arkansas	18	15	13	3.37	3.32	.99	.11	.51	.07	1.57	3.88	1.61	15.43	1.32	14.11	1.09
Montana	147	140	16	4.43	3.92	1.68	.50	-------	.31	1.11	3.62	1.77	17.34	.61	16.73	1.05
Wyoming	45	42	17	4.29	4.11	2.13	.76	-------	.57	1.44	3.20	2.34	18.84	1.11	17.73	1.04
Colorado	98	82	21	3.86	4.83	1.31	1.51	-------	.96	1.52	5.72	2.51	22.22	.91	21.31	1.01
New Mexico	16	107	16	3.19	5.10	2.58	1.35	-------	1.16	1.39	3.39	3.63	21.79	1.26	20.53	1.28

Utah	47	43	28	6.10	7.69	2.23	2.81	-------	3.21	2.20	16.57	2.97	43.78	1.30	42.48	1.52
Idaho	88	111	23	4.57	5.27	1.51	1.86	.01	.53	1.67	11.00	2.96	29.38	.92	28.46	1.24
Washington	68	252	19	4.79	4.70	1.35	.56	.09	1.42	1.58	10.63	2.45	27.57	1.40	26.17	1.38
Oregon	55	151	21	5.07	4.91	1.21	.34	.09	1.03	1.91	10.75	2.43	27.74	1.20	26.54	1.26
California	30	57	20	4.91	4.86	1.83	.67	.33	.75	2.14	9.12	2.77	27.38	.64	26.74	1.34
Total [3]	4,616	56	18	4.19	4.66	1.31	.27	1.21	1.35	1.97	6.19	2.42	23.57	1.69	21.88	1.22

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Includes miscellaneous labor, irrigating and water, seed treatment, and material.
[2] Sacks and twine, crop insurance, use of implements, use of storage buildings, and overhead.
[3] The total includes 24 records from the following States in which there were not enough reports to show State averages: Maine, Vermont, Delaware, Alabama, and Arizona.

TABLE 667.—*Wheat: Cost of production, by yield groups, 1924*

Yield group (bushels per acre)	Number of reports	Average acreage in wheat per farm	Average yield per acre	Gross cost per acre									Credit per acre (straw)	Net cost	
				Prepare and plant	Harvest and thresh	Market	Miscellaneous labor [1]	Fertilizer and manure	Seed	Land rent	Miscellaneous costs [2]	Total		Per acre	Per bushel
Winter-wheat belt:[3]		*Acres*	*Bushels*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
3 and under	10	68	2	2.44	1.71	0.31	0.05	0.52	1.13	2.00	1.02	9.18	0.29	8.89	4.44
4 to 6	29	70	5	3.00	2.77	.54	.03	.82	1.24	3.98	1.76	14.14	.54	13.60	2.72
7 to 9	47	45	8	3.27	3.46	.78	.14	1.30	1.32	3.63	1.79	15.69	.57	15.12	1.89
10 to 12	147	61	11	3.37	3.97	1.00	.17	1.18	1.46	3.67	1.76	16.58	.65	15.93	1.45
13 to 15	135	91	15	3.31	4.01	1.00	.14	.94	1.48	3.77	1.94	16.59	.48	16.11	1.07
16 to 18	116	101	17	3.19	4.57	1.03	.10	.88	1.49	4.85	2.11	18.22	.52	17.70	1.04
19 to 21	160	121	20	3.47	4.88	1.12	.12	.94	1.52	5.18	2.39	19.62	.39	19.23	.96
22 to 24	69	98	23	3.60	5.52	1.14	.08	.60	1.43	5.18	2.16	19.71	.47	19.24	.84
25 to 27	65	85	25	3.44	5.69	1.08	.19	.51	1.40	6.00	2.40	20.71	.30	20.41	.82
28 to 30	37	54	29	3.43	5.95	1.15	.07	.79	1.59	6.42	1.93	21.33	.33	21.00	.72
31 and over	28	65	35	3.54	6.53	1.31	.02	1.22	1.38	6.62	2.43	23.05	.17	22.88	.65
Spring-wheat belt:[4]															
9 and under	27	83	8	3.17	3.02	.75	.12	.07	1.37	2.14	1.85	12.49	.12	12.37	1.55
10 to 12	95	106	11	3.03	3.16	1.07	.10	.20	1.63	2.54	1.98	13.71	.34	13.37	1.22
13 to 15	130	133	15	3.21	3.68	1.05	.18	.30	1.55	3.03	1.98	14.98	.26	14.72	.98
16 to 18	115	134	17	3.18	3.83	1.24	.14	.27	1.55	3.00	2.18	15.39	.28	15.11	.89
19 to 21	114	88	20	3.42	4.09	1.18	.11	.41	1.64	3.77	2.12	16.74	.34	16.40	.82
22 to 24	44	92	23	3.61	4.77	1.31	.43	1.01	1.59	3.77	2.72	19.21	.46	18.75	.82
25 to 27	14	60	25	3.30	4.31	1.10	.16	.61	2.05	4.17	1.48	17.18	.26	16.92	.68
28 and over	19	52	31	3.34	4.91	1.39	.03	.92	1.82	6.13	2.59	21.13	.80	20.33	.66

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Includes miscellaneous labor, irrigating and water, seed treatment and material.
[2] Includes sacks and twine, crop insurance, use of implements, use of storage buildings, and overhead.
[3] "Winter-wheat belt," as used here, includes Kansas, Nebraska, Missouri, and Oklahoma.
[4] "Spring-wheat belt," as used here, includes western Minnesota, North Dakota, eastern South Dakota, and eastern Montana.

TABLE 668.—*Wheat: Comparative production costs and yields by States, 1923 and 1924*

State	Averages for farms reporting						Average yields per acre[1]		
	Net cost per bushel		Net cost per acre		Yield per acre				
	1923	1924	1923	1924	1923	1924	1923	1924	7-year average
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Bushels*	*Bushels*	*Bushels*	*Bushels*	*Bushels*
New York	1.21	1.27	30.26	27.93	25	22	20	18	22
New Jersey	1.22	1.43	29.22	31.52	24	22	20	18	18
Pennsylvania	1.24	1.41	27.26	28.23	22	20	19	16	18
Maryland	1.28	1.42	25.53	26.93	20	19	19	16	17
Virginia	1.50	1.62	22.46	24.23	15	15	13	13	13
West Virginia	1.57	1.58	23.60	25.28	15	16	13	13	14
North Carolina	1.79	1.82	23.32	23.65	13	13	11	12	10
South Carolina	1.67	1.74	21.68	20.91	13	12	11	12	11
Georgia	1.92	1.71	19.22	18.76	10	11	9	10	10
Ohio	1.13	1.18	23.74	24.74	21	21	18	17	18
Indiana	1.10	1.16	21.96	22.03	20	19	16	17	16
Illinois	.96	1.13	19.16	20.30	20	18	18	15	17
Michigan	1.18	1.01	23.66	26.22	20	26	17	22	18
Wisconsin	1.23	1.00	20.86	23.07	17	23	17	22	19
Minnesota	1.19	.88	17.85	19.42	15	22	13	22	13
Iowa	1.03	.95	19.65	20.97	19	22	18	20	18
Missouri	1.24	1.30	18.66	19.43	15	15	13	13	14
North Dakota	1.41	.90	12.66	14.37	9	16	7	16	10
South Dakota	1.13	.96	13.57	14.45	12	15	10	15	12
Nebraska	1.27	.90	16.55	18.96	13	21	10	19	16
Kansas	1.21	.99	15.69	16.79	13	17	10	16	14
Kentucky	1.37	1.65	20.57	19.77	15	12	12	10	12
Tennessee	1.48	1.56	19.26	20.28	13	13	10	10	10
Texas	1.28	.88	15.35	16.70	12	19	10	18	13
Oklahoma	1.13	.92	13.53	15.58	12	17	11	16	14
Arkansas	1.61	1.09	19.31	14.11	12	13	11	12	12
Montana	1.09	1.05	17.48	16.73	16	16	15	16	15
Wyoming	.98	1.04	17.59	17.73	18	17	16	15	22
Colorado	1.07	1.01	22.57	21.31	21	21	13	14	19
New Mexico	.97	1.28	16.45	20.53	17	16	12	16	19
Utah	1.19	1.52	38.10	42.48	32	28	24	17	21
Idaho	1.04	1.24	29.12	28.46	28	23	29	19	23
Washington	.97	1.38	27.06	26.17	28	19	25	12	19
Oregon	1.12	1.26	26.94	26.54	24	21	24	14	19
California	1.09	1.34	24.06	26.74	22	20	22	15	16

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] State average yields obtained by the Division of Crop and Livestock estimates and published in the Yearbooks of the United States Department of Agriculture, carried to nearest whole number. Seven-year average yields for 1914 to 1920.

TABLE 669.—*Corn: Cost of production, by States, 1924*

State	Number of reports	Average acreage in corn per farm	Average yield per acre	Gross cost per acre											Credit per acre (stover and fodder)	Net cost	
				Prepare and plant	Cultivate	Harvest	Market	Miscellaneous labor [1]	Commercial fertilizer	Manure	Seed	Land rent	Miscellaneous costs [2]	Total		Per acre	Per bushel
		Acres	*Bushels*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Vermont	20	4	41	9.13	5.48	8.39	3.25	0.03	4.92	17.40	0.89	7.78	4.22	61.49	10.60	50.89	1.24
Connecticut	16	5	47	12.71	9.00	14.53	3.50	-------	12.55	17.50	.81	11.20	8.63	90.43	11.56	78.87	1.68
New York	171	7	40	7.86	4.59	7.21	3.15	.15	3.23	8.44	.78	7.02	3.69	46.12	7.94	38.18	.95
New Jersey	32	11	41	6.74	4.95	9.49	2.79	.09	5.18	9.57	.46	8.23	3.53	51.03	7.02	44.01	1.07
Pennsylvania	295	12	39	6.72	3.71	7.08	3.16	.07	2.36	7.72	.57	6.17	3.56	41.12	5.73	35.39	.91
Delaware	9	25	34	6.66	3.78	7.11	2.40	-------	2.36	7.11	.30	5.94	2.66	38.32	6.13	32.19	.95
Maryland	77	25	41	6.06	3.18	6.98	3.04	.21	1.97	7.27	.53	6.79	2.59	38.62	5.64	32.98	.80
Virginia	196	24	33	5.51	3.85	4.77	2.72	.07	1.95	2.94	.46	7.06	2.42	31.75	4.22	27.53	.83
West Virginia	133	10	34	7.09	5.41	5.12	3.29	.02	1.90	3.20	.49	6.65	2.17	35.34	4.43	30.91	.91
North Carolina	205	21	25	5.19	4.53	3.08	2.53	.07	3.95	2.65	.43	7.63	2.41	32.47	2.95	29.52	1.18
South Carolina	80	44	21	4.00	3.65	2.03	2.14	.09	4.84	.68	.41	6.51	2.81	27.16	2.58	24.58	1.17
Georgia	157	39	18	3.18	3.16	1.66	1.52	.16	2.72	.83	.39	4.54	2.03	20.19	1.74	18.45	1.02
Florida	24	32	24	4.56	4.22	2.59	1.75	.34	4.10	1.67	.44	4.35	2.65	26.67	1.67	25.00	1.04
Ohio	361	23	36	5.59	3.52	6.73	2.25	.07	1.34	4.60	.46	6.64	2.68	33.88	3.55	30.33	.84
Indiana	406	35	33	4.43	3.10	3.70	1.97	.08	.99	2.64	.42	6.61	2.09	26.03	1.68	24.35	.74
Illinois	476	60	38	3.78	2.69	2.99	1.78	.06	.27	1.94	.47	7.23	1.86	23.07	1.19	21.88	.58
Michigan	213	14	30	5.72	3.46	5.62	2.46	.06	.67	5.10	.57	5.61	2.49	31.76	4.64	27.12	.90
Wisconsin	234	19	26	4.76	3.33	4.85	2.84	.06	.43	6.89	.82	6.21	2.61	32.80	5.76	27.04	1.04
Minnesota	267	38	29	4.05	3.08	3.63	1.96	.07	.10	3.84	.61	5.27	2.25	24.86	2.37	22.49	.78
Iowa	478	65	33	3.98	2.94	3.07	1.90	.05	.04	2.33	.53	8.71	2.23	25.78	.91	24.87	.75
Missouri	340	37	30	3.79	3.02	2.56	2.24	.07	.24	1.94	.37	5.73	1.87	21.83	1.32	20.51	.68
North Dakota	158	40	16	3.56	2.15	2.35	1.43	.05	-------	.89	.53	2.24	1.79	14.99	3.29	11.70	.73
South Dakota	356	80	23	3.38	2.24	2.82	1.87	.08	.03	1.12	.40	3.51	1.93	17.38	1.02	16.36	.71
Nebraska	262	84	25	2.88	2.10	2.59	1.48	.10	.02	1.21	.31	5.13	1.77	17.59	.53	17.06	.68
Kansas	381	57	26	2.45	2.12	2.16	1.31	.06	.02	.74	.25	4.27	1.32	14.70	.71	13.99	.54
Kentucky	215	30	32	4.55	3.77	3.12	2.53	.05	1.05	1.64	.41	7.96	2.36	27.44	1.94	25.50	.80
Tennessee	208	28	31	4.76	3.84	2.44	2.93	.06	.90	1.75	.36	7.51	2.19	26.74	1.65	25.09	.81
Alabama	228	31	19	3.82	4.24	1.91	2.25	.13	2.26	.88	.40	4.79	2.42	23.10	1.53	21.57	1.14
Mississippi	152	41	19	4.18	4.56	1.99	1.97	.04	2.12	.91	.40	4.87	2.48	23.61	1.32	22.29	1.17
Louisiana	48	40	18	4.81	5.17	2.08	1.85	.06	2.12	1.42	.56	4.86	1.80	24.73	.41	24.32	1.35

Texas	260	32	21	3.36	3.16	1.76	2.22	.21	.52	.51	.39	4.91	1.82	18.86	.84	18.02	.86
Oklahoma	184	30	21	2.87	2.66	1.98	1.78	.07	.03	.36	.31	3.87	1.35	15.28	.49	14.79	.70
Arkansas	161	23	22	3.86	4.16	1.68	2.00	.03	.46	.98	.35	5.74	2.07	21.33	.90	20.43	.93
Montana	66	29	15	4.45	2.00	2.72	2.31	.22	-------	.28	.48	2.20	1.48	16.14	2.69	13.45	.90
Wyoming	36	43	17	4.53	2.04	2.49	1.41	.32	-------	.86	.40	2.43	1.53	16.01	1.63	14.38	.85
Colorado	82	56	18	3.22	2.01	2.20	1.20	1.00	.07	.94	.34	4.19	1.78	16.95	1.45	15.50	.86
New Mexico	36	19	16	2.64	1.65	1.80	1.95	.66	.14	1.12	.39	2.83	1.29	14.47	2.04	12.43	.78
Idaho	23	10	30	4.93	3.05	3.87	2.21	2.84	-------	2.57	.53	9.58	2.52	32.10	1.55	30.55	1.02
Oregon	16	5	38	6.88	4.42	4.76	2.25	.47	.76	5.44	.53	8.06	2.17	35.74	1.91	33.83	.89
Total [3]	7,153	38	29	4.45	3.29	3.64	2.11	.12	1.09	2.85	.46	5.97	2.22	26.20	2.43	23.77	.82

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Includes miscellaneous labor, irrigating and water.
[2] Sacks and twine, crop insurance, use of implements, use of storage buildings, and overhead.
[3] The total includes 91 records from the following States in which there were not enough reports to show State averages: Maine, New Hampshire, Massachusetts, Rhode Island, Utah, Washington, and California.

TABLE 670.—*Corn: Cost of production, by yield groups, 1924*

Yield group (bushels per acre)	Number of reports	Average acreage in corn per farm	Average yield per acre	Gross cost per acre										Credit per acre (stover and fodder)	Net cost	
				Prepare and plant	Cultivate	Harvest	Market	Miscellaneous labor [1]	Fertilizer and manure	Seed	Land rent	Miscellaneous costs [2]	Total		Per acre	Per bushel
All States:		*Acres*	*Bushels*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
7 and under	363	35	2	4.25	2.89	2.30	0.29	0.11	2.99	0.55	4.01	2.11	19.50	3.95	15.55	7.78
8 to 17	1,055	41	13	3.62	3.00	2.37	1.48	.11	2.38	.39	4.01	1.84	19.20	1.58	17.62	1.36
18 to 27	2,044	39	22	4.09	3.22	2.92	1.92	.09	3.13	.43	5.10	2.05	22.95	1.85	21.10	.96
28 to 37	1,686	41	32	4.41	3.25	3.66	2.16	.10	3.38	.45	6.30	2.23	25.96	2.20	23.76	.74
38 to 47	1,180	38	41	4.87	3.42	4.52	2.19	.13	4.93	.51	7.35	2.44	30.36	2.79	27.57	.67
48 to 57	576	34	51	5.79	3.71	5.90	2.89	.21	7.26	.55	8.47	2.85	37.63	3.99	33.64	.66
58 to 67	147	36	61	5.69	3.97	6.43	3.00	.21	8.18	.55	9.35	2.91	40.29	3.76	36.53	.60
68 to 77	69	17	72	6.66	4.10	6.62	3.45	.20	11.31	.61	9.42	3.14	45.51	5.37	40.14	.56
78 and over	33	13	90	9.13	5.08	10.59	3.21	.61	16.05	.69	10.30	3.47	59.13	8.84	50.29	.56
Corn Belt:[3]																
7 and under	26	50	2	3.52	2.28	3.00	.89	.15	2.32	.49	5.32	1.86	19.83	2.25	17.58	8.79
8 to 17	125	41	13	3.78	2.58	2.85	1.43	.09	2.55	.40	4.94	1.99	20.61	1.45	19.16	1.47
18 to 27	472	52	23	3.80	2.75	2.87	1.68	.05	2.17	.41	6.12	1.89	21.74	1.08	20.66	.90
28 to 37	652	55	32	3.95	2.92	3.18	1.89	.09	2.27	.43	6.91	2.13	23.77	1.32	22.45	.70
38 to 47	540	58	41	3.93	2.86	3.44	1.83	.05	2.58	.46	7.72	2.06	24.93	1.30	23.63	.58
48 to 57	212	57	51	4.18	2.73	3.87	2.27	.06	2.60	.47	8.54	2.04	26.76	1.24	25.52	.50
58 to 67	60	53	61	4.02	2.81	4.58	2.22	.09	3.59	.53	9.61	2.02	29.47	1.52	27.95	.46
68 and over	13	39	73	4.44	2.78	4.22	2.35	-------	3.84	.53	9.31	2.70	30.17	2.08	28.09	.38

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Includes miscellaneous labor, irrigating and water, seed treatment and material.

[2] Includes sacks and twine, crop insurance, use of implements, use of storage buildings, and overhead.

[3] "Corn Belt" as used here includes Indiana, Illinois, Iowa, western Ohio, southeast corner of South Dakota, eastern Nebraska, northeast corner of Kansas, and the northern three-fourths of Missouri.

TABLE 671.—*Corn: Comparative production costs and yields, by States, 1923 and 1924*

State	Averages for farms reporting						Average yields per acre[1]		
	Net cost per bushel		Net cost per acre		Yield per acre				
	1923	1924	1923	1924	1923	1924	1923	1924	7-year average
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Bushels*	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Vermont	0.90	1.24	46.87	50.89	52	41	39	47	45
Massachusetts	1.30	-------	65.10	-------	50	-------	43	45	46
Connecticut	1.33	1.68	78.33	78.87	59	47	41	43	47
New York	.91	.95	35.43	38.18	39	40	32	33	37
New Jersey	.79	1.07	41.31	44.01	52	41	40	34	40
Pennsylvania	.78	.91	38.03	35.39	49	39	40	36	42
Delaware	.73	.95	31.51	32.19	43	34	33	27	33
Maryland	.68	.80	31.80	32.98	47	41	39	31	38
Virginia	.69	.83	27.01	27.53	39	33	29	21	27
West Virginia	.79	.91	33.28	30.91	42	34	34	28	32
North Carolina	.95	1.18	29.52	29.52	31	25	22	18	20
South Carolina	1.01	1.17	23.22	24.58	23	21	16	12	17
Georgia	1.05	1.02	18.88	18.45	18	18	12	12	15
Florida	1.12	1.04	21.37	25.00	19	24	12	14	15
Ohio	.64	.84	31.45	30.33	49	36	41	26	39
Indiana	.55	.74	24.57	24.35	45	33	38	25	36
Illinois	.52	.58	21.38	21.88	41	38	38	32	34
Michigan	.74	.90	28.99	27.12	39	30	34	26	32
Wisconsin	.71	1.04	29.03	27.04	41	26	37	26	36
Minnesota	.57	.78	22.18	22.49	39	29	36	28	34
Iowa	.52	.75	24.09	24.87	46	33	41	28	38
Missouri	.61	.68	20.21	20.51	33	30	30	26	26
North Dakota	.42	.73	13.40	11.70	32	16	34	20	22
South Dakota	.50	.71	17.54	16.36	35	23	34	22	29
Nebraska	.49	.68	17.10	17.06	35	25	33	24	26
Kansas	.53	.54	13.71	13.99	26	26	22	22	17
Kentucky	.80	.80	28.01	25.50	35	32	28	25	28
Tennessee	.77	.81	24.77	25.09	32	31	24	22	26
Alabama	.99	1.14	19.83	21.57	20	19	14	13	15
Mississippi	1.17	1.17	23.38	22.29	20	19	14	12	17
Louisiana	1.15	1.35	21.86	24.32	19	18	15	12	19
Texas	.81	.86	17.76	18.02	22	21	18	17	20
Oklahoma	.86	.70	13.71	14.79	16	21	12	20	18
Arkansas	1.06	.93	22.30	20.43	21	22	20	16	20
Montana	.65	.90	15.49	13.45	24	15	26	18	19
Wyoming	.49	.85	14.15	14.38	29	17	27	14	22
Colorado	.57	.86	15.83	15.50	28	18	25	10	19
New Mexico	.85	.78	18.61	12.43	22	16	16	20	23
Idaho	.66	1.02	28.91	30.55	44	30	42	35	34
Washington	.70	-------	23.09	-------	33	-------	37	30	34
Oregon	.83	.89	33.32	33.83	40	38	35	30	31

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] State average yields obtained by the Division of Crop and Livestock estimates and published in the Yearbooks of the United States Department of Agriculture, carried to nearest whole number. Seven-year average yields for 1914 to 1920.

TABLE 672.—*Oats: Cost of production, by States, 1924*

State	Number of reports	Average acreage in oats per farm	Average yield per acre	Gross cost per acre										Credit per acre (straw)	Net cost	
				Prepare and plant	Harvest and thresh	Market	Miscellaneous labor [1]	Commercial fertilizer	Manure	Seed	Land rent	Miscellaneous costs [2]	Total		Per acre	Per bushel
		Acres	*Bushels*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	31	7	42	7.41	9.23	2.67	0.11	2.25	9.45	3.27	6.45	4.39	45.23	5.50	39.73	0.95
Vermont	26	6	44	8.37	10.76	2.40	.23	3.02	6.40	3.08	5.56	3.44	43.26	6.35	36.91	.84
New York	261	12	41	6.67	6.70	1.91	.17	2.43	1.82	2.18	5.60	3.14	30.62	4.93	25.69	.63
New Jersey	17	10	35	5.02	6.62	1.52	.12	2.17	1.12	1.85	6.71	3.11	28.24	5.32	22.92	.65
Pennsylvania	291	12	41	5.94	5.72	1.92	.14	2.10	1.04	1.88	5.40	3.39	27.53	4.83	22.70	.55
Maryland	38	8	36	5.69	5.62	1.86	.10	3.16	1.06	1.54	5.68	2.59	27.30	5.02	22.28	.62
Virginia	81	9	28	4.63	3.92	1.38	.13	2.15	.89	1.52	4.79	2.02	21.43	2.83	18.60	.66
West Virginia	80	7	31	5.59	5.05	2.25	.21	1.90	.78	1.66	5.72	2.40	25.56	3.04	22.52	.73
North Carolina	83	7	24	3.87	4.12	1.71	.04	2.23	.80	1.81	6.15	2.07	22.80	1.83	20.97	.87
South Carolina	58	19	28	3.17	4.68	1.44	.12	2.86	.40	2.03	6.01	2.15	22.86	1.65	21.21	.76
Georgia	78	16	22	2.49	3.95	1.26	.09	1.82	.82	1.90	3.85	1.99	18.17	1.54	16.63	.76
Ohio	267	15	48	4.30	5.25	1.38	.14	1.23	.43	1.44	5.85	2.80	22.82	2.60	20.22	.42
Indiana	276	22	41	2.71	4.49	.99	.09	.64	.69	1.28	6.05	2.16	19.10	2.03	17.07	.42
Illinois	394	34	42	2.29	3.91	1.16	.17	.13	.43	1.41	6.81	1.95	18.26	1.43	16.83	.40
Michigan	222	15	46	4.97	5.39	1.83	.11	.92	1.24	1.25	5.48	2.51	23.70	2.88	20.82	.45
Wisconsin	321	19	42	4.25	5.09	1.96	.14	.14	1.67	1.62	6.08	2.76	23.71	3.22	20.49	.49
Minnesota	301	39	46	3.51	4.66	1.46	.14	.07	.92	1.40	5.05	2.39	19.60	1.34	18.26	.40
Iowa	454	40	44	2.10	4.20	1.32	.19	.01	.48	1.55	7.85	2.36	20.06	1.29	18.77	.43
Missouri	215	20	28	2.65	3.83	1.26	.09	.30	.62	1.41	4.47	2.01	16.64	1.16	15.48	.55
North Dakota	257	48	36	3.30	4.10	1.24	.12	-------	.16	.91	2.42	1.99	14.24	.57	13.67	.38
South Dakota	329	50	38	2.43	3.88	1.48	.16	-------	.31	1.06	3.52	2.13	14.97	.60	14.37	.38
Nebraska	207	31	32	2.40	3.93	1.28	.10	.01	.48	1.20	5.26	2.21	16.87	.75	16.12	.50
Kansas	266	18	29	2.72	4.74	1.06	.05	.03	.31	1.47	4.23	1.76	16.37	.72	15.65	.54
Kentucky	64	12	25	3.18	4.87	1.61	.51	1.05	.75	1.21	4.55	2.00	19.73	2.16	17.57	.70
Tennessee	63	10	27	3.89	3.76	1.59	.13	.91	.97	1.39	5.88	1.99	20.51	1.90	18.61	.69
Alabama	62	10	23	2.96	4.16	1.58	.20	1.07	.55	1.63	4.55	1.65	18.35	1.93	16.42	.71
Mississippi	28	24	22	2.68	3.97	1.35	.32	1.44	.62	1.85	3.92	2.21	18.36	1.37	16.99	.77
Texas	113	42	33	2.93	4.94	1.46	.20	.07	.07	1.31	4.22	2.22	17.42	1.01	16.41	.50
Oklahoma	123	28	30	2.79	4.42	1.12	.10	-------	.25	1.54	3.43	1.67	15.32	.77	14.55	.48
Arkansas	50	13	26	2.84	3.63	1.70	.04	.38	.35	1.44	4.23	1.68	16.29	1.72	14.57	.56

Montana	108	29	31	4.18	4.16	2.01	.48	-------	.23	.89	2.84	1.86	16.65	.90	15.75	.51
Wyoming	50	31	30	4.35	4.06	2.22	1.01	-------	.58	1.21	3.67	2.31	19.41	1.65	17.76	.59
Colorado	62	19	33	4.11	5.05	1.67	1.69	-------	1.14	1.57	5.74	2.60	23.57	1.53	22.04	.67
Utah	35	10	45	6.03	7.88	2.38	3.02	-------	2.94	2.33	10.17	3.23	37.98	2.20	35.78	.80
Idaho	55	24	37	4.75	5.35	1.60	1.90	-------	.44	1.60	7.73	2.93	26.30	1.32	24.98	.68
Washington	40	27	39	4.93	5.54	1.47	.54	.10	2.53	1.63	9.14	2.71	28.59	2.22	26.37	.68
Oregon	37	17	40	5.15	5.15	1.36	.48	.14	1.41	1.68	7.16	2.56	25.09	1.54	23.55	.59
Total [3]	5,509	26	38	3.66	4.77	1.46	.23	.65	.85	1.49	5.47	2.36	20.94	2.01	18.93	.50

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Includes miscellaneous labor, irrigating and water, seed treatment and material.
[2] Sacks and twine, crop insurance, use of implements, use of storage buildings, and overhead.
[3] The total includes 66 records from the following States in which there were not enough reports to show State averages; New Hampshire, Massachusetts, Connecticut, Florida, Louisiana, New Mexico, Arizona, and California.

TABLE 673.—*Oats: Cost of production, by yield groups, 1924*

Yield group (bushels per acre)	Number of reports	Average acreage in oats per farm	Average yield per acre	Gross cost per acre									Credit per acre (straw)	Net cost	
				Prepare and plant	Harvest [1]	Market	Miscellaneous labor [2]	Fertilizer and manure	Seed	Land rent	Miscellaneous costs [3]	Total		Per acre	Per bushel
All States:		*Acres*	*Bushels*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
17 and under	343	20	11	3.21	3.30	1.07	0.16	0.93	1.35	3.49	1.77	15.28	0.87	14.41	1.31
18 to 22	481	21	20	3.22	3.87	1.20	.17	1.31	1.37	3.90	1.88	16.92	1.48	15.44	.77
23 to 27	451	22	25	3.41	3.98	1.24	.20	1.36	1.46	4.52	1.86	18.03	1.69	16.34	.65
28 to 32	903	25	30	3.68	4.39	1.33	.22	1.46	1.44	4.87	2.32	19.71	1.92	17.79	.59
33 to 37	552	25	35	3.62	4.59	1.40	.13	1.40	1.49	4.92	2.36	19.91	1.94	17.97	.51
38 to 42	1,033	28	40	3.88	4.96	1.52	.25	1.71	1.56	5.59	2.54	22.01	2.39	19.62	.49
43 to 47	376	30	45	3.73	4.89	1.59	.22	1.29	1.52	6.23	2.48	21.95	2.21	19.74	.44
48 to 52	684	29	50	3.71	5.35	1.61	.26	1.59	1.55	6.78	2.66	23.51	2.13	21.38	.43
53 to 57	167	28	55	3.59	5.43	1.56	.17	1.34	1.55	6.93	2.86	23.43	2.63	20.80	.38
58 to 62	288	29	60	3.92	5.91	1.60	.29	2.12	1.54	7.07	2.32	24.77	2.31	22.46	.37
63 and over	231	24	73	4.26	6.63	1.79	.35	1.92	1.63	7.12	2.94	26.64	2.80	23.84	.33

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Threshing is included under harvesting.
[2] Includes miscellaneous labor, irrigating and water, seed treatment and material.
[3] Sacks and twine, crop insurance, use of implements, use of storage buildings, and overhead

TABLE 674.—*Oats: Comparative production costs and yields, by States, 1923 and 1924*

State	Averages for farms reporting						Average yields per acre[1]		
	Net cost per bushel		Net cost per acre		Yield per acre				
	1923	1924	1923	1924	1923	1924	1923	1924	7-year average
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Bushels*	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Maine	0.82	0.95	39.20	39.73	48	42	37	37	37
Vermont	.81	.84	36.67	36.91	45	44	35	38	37
New York	.63	.63	25.23	25.69	40	41	32	36	34
New Jersey	.65	.65	20.04	22.92	31	35	24	32	32
Pennsylvania	.65	.55	22.20	22.70	34	41	29	36	35
Maryland	.58	.62	20.38	22.28	35	36	30	34	31
Virginia	.70	.66	19.62	18.60	28	28	22	24	22
West Virginia	.83	.73	22.31	22.52	27	31	24	26	25
North Carolina	.79	.87	21.28	20.97	27	24	22	18	18
South Carolina	.68	.76	19.79	21.21	29	28	24	21	20
Georgia	.72	.76	16.53	16.63	23	22	18	17	19
Ohio	.51	.42	19.95	20.22	39	48	34	41	38
Indiana	.49	.42	16.04	17.07	33	41	28	38	36
Illinois	.41	.40	15.88	16.83	39	42	35	40	40
Michigan	.50	.45	19.68	20.82	39	46	32	42	35
Wisconsin	.51	.49	19.99	20.49	39	42	36	40	40
Minnesota	.42	.40	17.14	18.26	41	46	37	43	34
Iowa	.43	.43	17.23	18.77	40	44	36	43	39
Missouri	.55	.55	14.84	15.48	27	28	25	28	28
North Dakota	.44	.38	11.55	13.67	26	36	23	34	24
South Dakota	.41	.38	15.01	14.37	37	38	34	37	34
Nebraska	.41	.50	14.90	16.12	36	32	33	31	32
Kansas	.47	.54	14.57	15.65	31	29	26	26	28
Kentucky	.81	.70	17.90	17.57	22	25	21	23	23
Tennessee	.75	.69	17.21	18.61	23	27	21	22	22
Alabama	.72	.71	15.05	16.42	21	23	17	15	19
Mississippi	.80	.77	16.75	16.99	21	22	19	18	19
Texas	.48	.50	15.84	16.41	33	33	32	34	28
Oklahoma	.57	.48	13.12	14.55	23	30	20	27	26
Arkansas	.67	.56	16.87	14.57	25	26	23	20	25
Montana	.51	.51	16.44	15.75	32	31	33	30	29
Wyoming	.48	.59	17.74	17.76	37	30	34	31	34
Colorado	.57	.67	22.68	22.04	40	33	32	25	34
New Mexico	.63	-------	18.82	-------	30	-------	20	24	31
Utah	.74	.80	37.11	35.78	50	45	38	40	42
Idaho	.56	.68	28.07	24.98	50	37	46	36	40
Washington	.51	.68	29.49	26.37	58	39	57	40	43
Oregon	.54	.59	25.97	23.55	48	40	39	31	35
California	.57	-------	19.84	-------	35	-------	32	24	32

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] State average yields obtained by the Division of Crop and Livestock estimates and published in the Yearbooks of the United States Department of Agriculture, carried to nearest whole number. Seven-year average yields for 1914–1920.

TABLE 675.—*Wheat, corn, and oats: Comparative production costs in 1922, 1923, and 1924*

Crops and geographical divisions [1]	Number of reports			Net cost per acre			Net cost per bushel			Yield per acre		
	1922	1923	1924	1922	1923	1924	1922	1923	1924	1922	1923	1924
WHEAT				*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Bush.*	*Bush.*	*Bush.*
North Atlantic	168	642	427	28.42	28.43	28.46	1.35	1.24	1.42	21	23	20
South Atlantic	355	961	478	22.45	22.42	23.92	1.60	1.60	1.60	14	14	15
East North Central	551	2,028	1,183	21.08	22.12	23.05	1.17	1.11	1.15	18	20	20
West North Central	748	2,479	1,524	15.42	16.17	17.38	1.03	1.24	.97	15	13	18
South Central	310	745	408	17.23	17.16	17.74	1.44	1.32	1.18	12	13	15
Western	285	997	596	22.90	23.95	24.05	1.09	1.09	1.20	21	22	20
United States	2,417	7,852	4,616	19.68	21.02	21.88	1.23	1.24	1.22	16	17	18
CORN												
North Atlantic	256	815	585	43.09	40.73	41.99	.83	.87	1.02	52	47	41
South Atlantic	557	1,655	881	25.01	25.57	27.07	.83	.85	.97	30	30	28
East North Central	669	2,714	1,690	25.83	26.77	25.60	.56	.61	.75	46	44	34
West North Central	881	3,312	2,242	17.89	18.81	18.96	.53	.54	.70	34	35	27
South Central	881	2,285	1,456	19.38	21.18	21.18	.75	.88	.88	26	24	24
Western	119	457	299	20.14	19.02	18.58	.67	.66	.88	30	29	21
United States	3,363	11,238	7,153	23.01	23.75	23.77	.66	.68	.82	35	35	29
OATS												
North Atlantic	260	877	647	25.80	24.89	25.76	.68	.67	.63	38	37	41
South Atlantic	326	834	421	18.82	19.14	20.12	.72	.74	.75	26	26	27
East North Central	578	2,227	1,480	17.08	18.21	18.84	.47	.48	.44	36	38	43
West North Central	835	2,974	2,029	14.37	15.31	16.43	.44	.45	.44	33	34	37
South Central	388	865	510	15.65	15.84	16.23	.65	.63	.58	24	25	28
Western	214	704	422	21.59	22.74	22.62	.58	.55	.65	37	41	35
United States	2,601	8,481	5,509	17.40	18.08	18.93	.53	.52	.50	33	35	38

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] North Atlantic includes Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania; South Atlantic includes Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida; East North Central includes Ohio, Indiana, Illinois, Michigan, and Wisconsin; West North Central includes Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; South Central includes Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas; Western includes Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, and California.

TABLE 676.—*Potatoes: Cost of production, 1924*

State groups	Number of reports	Average acreage in potatoes farm	Average yield per acre	Gross cost per acre										Credit per acre (culls)	Net cost	
				Prepare and plant	Cultivate	Harvest	Market	Miscellaneous labor [1]	Fertilizer and manure	Seed	Land rent	Miscellaneous costs [2]	Total		Per acre	Per bushel
		Acres	*Bushels*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Northeastern [3]	431	7	171	11.63	6.28	14.18	12.63	4.12	24.20	13.16	7.97	5.81	99.98	0.44	99.54	0.58
Eastern [4]	167	8	123	9.09	5.20	10.10	9.10	1.70	16.63	13.01	11.24	6.27	82.34	.28	82.06	.67
Southeastern [5]	53	9	98	7.55	4.29	8.82	8.46	2.47	21.19	15.26	7.04	6.26	81.34	1.33	80.01	.82
Central [6]	212	4	111	7.23	4.22	8.39	6.94	1.87	6.57	10.62	7.26	3.13	56.23	.14	56.09	.51
North Central [7]	508	6	125	6.71	3.48	8.45	6.88	2.42	5.11	5.90	5.12	3.31	47.38	.28	47.10	.38
West South Central [8]	37	11	76	6.96	3.32	6.24	4.53	1.37	6.83	12.30	6.59	3.44	51.58	-------	51.58	.68
Western [9]	181	9	144	8.48	4.31	12.46	8.63	2.87	4.39	10.49	8.71	8.65	68.99	1.16	67.83	.47

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Includes miscellaneous labor, irrigating and water, spraying, and spray material.
[2] Sacks and twine, crop insurance, use of implements, use of storage buildings, and overhead.
[3] Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.
[4] Maryland, Virginia, West Virginia, North Carolina, Kentucky, and Tennessee.
[5] South Carolina, Georgia, Florida, Alabama, and Mississippi.
[6] Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, and Nebraska.
[7] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
[8] Louisiana, Texas, Oklahoma, and Arkansas.
[9] Montana, Wyoming, Colorado, Arizona, Utah, Idaho, Washington, Oregon, and California.

TABLE 677.—*Potatoes: Comparative production costs in 1923 and 1924*

State groups	Number of reports		Net cost per acre		Net cost per bushel		Yield per acre	
	1923	1924	1923	1924	1923	1924	1923	1924
			Dollars	*Dollars*	*Dollars*	*Dollars*	*Bushels*	*Bushels*
Northeastern [1]	574	431	105.50	99.54	0.62	0.58	170	171
Eastern [2]	231	167	80.46	82.06	.69	.67	116	123
Southeastern [3]	112	53	75.66	80.01	.78	.82	97	98
Central [4]	407	212	52.48	56.09	.52	.51	101	111
North Central [5]	964	508	51.34	47.10	.44	.38	116	125
West South Central [6]	85	37	54.76	51.58	.67	.68	82	76
Western [7]	321	181	68.83	67.83	.46	.47	149	144

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.
[2] Maryland, Virginia, West Virginia, North Carolina, Kentucky, and Tennessee.
[3] South Carolina, Georgia, Florida, Alabama, and Mississippi.
[4] Ohio, Indiana, Illinois, Iowa, Missouri, Kansas, and Nebraska.
[5] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
[6] Louisiana, Texas, Oklahoma, and Arkansas.
[7] Montana, Wyoming, Colorado, Arizona, Utah, Idaho, Washington, Oregon, and California.

91044°—26——85

TABLE 678.—*Cotton: Cost of production, by yield groups, 1924*

Yield group (pounds of lint per acre)	Number of reports	Average acreage in cotton per farm	Average yield of lint per acre	Gross cost per acre										Credit per acre (cotton seed)	Net cost of lint	
				Prepare and plant	Cultivate	Harvest and market	Miscellaneous labor [1]	Fertilizer and manure	Seed	Ginning	Land rent	Miscellaneous costs [2]	Total		Per acre	Per pound
		Acres	*Pounds*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
60 and under	24	57	36	4.36	3.99	3.32	-------	1.73	0.97	0.71	3.67	1.18	19.94	1.61	18.33	0.51
61 to 100	107	54	93	4.15	5.55	5.76	0.49	3.52	1.07	1.26	3.98	2.07	27.85	3.13	24.72	.27
101 to 140	186	58	125	3.57	5.76	6.38	.46	3.12	1.16	1.56	4.56	2.22	28.79	4.24	24.55	.20
141 to 180	284	54	161	4.05	6.18	7.76	.67	3.74	1.24	1.88	5.49	2.59	33.60	4.98	28.62	.18
181 to 220	221	47	200	4.43	6.94	9.04	.97	4.80	1.35	2.29	6.03	2.83	38.68	6.66	32.02	.16
221 to 260	288	58	246	4.62	6.69	10.05	.96	4.82	1.41	2.75	6.27	2.70	40.27	8.54	31.73	.13
261 to 300	156	33	293	5.01	6.71	11.57	1.30	6.81	1.48	3.01	7.81	3.22	46.92	10.19	36.73	.13
301 to 340	39	21	324	4.78	7.01	12.24	.82	6.95	1.53	3.39	7.38	3.37	47.47	11.84	35.63	.11
341 to 380	46	35	361	5.27	7.39	12.20	2.10	7.45	1.50	3.65	7.73	4.13	51.42	11.62	39.80	.11
381 to 420	60	41	400	5.49	6.77	12.61	1.83	7.06	1.44	4.42	8.84	3.67	52.13	11.45	40.68	.10
421 to 460	21	17	448	5.87	6.96	14.47	.98	9.40	1.68	4.70	8.84	4.58	57.48	13.62	43.86	.10
461 to 500	33	53	493	5.55	7.60	15.46	1.15	7.43	1.67	5.13	8.82	3.61	55.82	14.30	41.52	.08
501 and over	6	17	637	5.75	7.28	16.42	2.86	5.73	1.92	7.64	12.00	4.38	63.98	20.08	43.90	.07

Cost of Production Division. From returns to mail inquiry sent to crop reporters.

[1] Includes miscellaneous labor, irrigating and water, dusting, and dusting material.
[2] Includes picking sacks and sheets, crop insurance, use of implements, use of storage buildings, and overhead.

TABLE 679.—*Crops: Value per acre of 10 crops combined, 1866–1925*

Year	Value per acre	Year	Value per acre	Year	Value per acre	Year	Value per acre
	Dols.		*Dols.*		*Dols.*		*Dols.*
1866	14.17	1881	13.10	1896	7.94	1911	15.36
1867	15.09	1882	12.93	1897	9.07	1912	16.09
1868	14.17	1883	10.93	1898	9.00	1913	16.49
1869	14.67	1884	9.95	1899	9.13	1914	16.44
1870	15.40	1885	9.72	1900	10.31	1915	17.18
1871	15.74	1886	9.41	1901	11.43	1916	22.58
1872	14.86	1887	10.14	1902	12.07	1917	33.27
1873	14.19	1888	10.30	1903	12.62	1918	33.73
1874	13.25	1889	8.99	1904	13.26	1919	35.74
1875	12.20	1890	11.03	1905	13.28	1920	23.26
1876	10.80	1891	11.76	1906	13.46	1921	14.45
1877	12.00	1892	10.19	1907	14.74	1922	19.23
1878	10.37	1893	9.50	1908	15.32	1923	21.52
1879	13.26	1894	9.06	1909	16.00	1924	23.77
1880	13.01	1895	8.12	1910	15.53	1925	21.50

Division of Crop and Livestock Estimates. Corn, wheat, oats, barley, rye, buckwheat, potatoes, all hay, tobacco, and cotton, which comprise nearly 90 per cent of the area in all field crops, the average value of which closely approximates the value per acre of the aggregate of all crops.

FARM RETURNS

TABLE 680.—*Returns from farming, 1923 and 1924*

	North Atlantic		South Atlantic		East North Central		West North Central		South Central		Western		United States	
	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924
Number of reports	1,800	1,761	2,131	1,990	3,395	2,808	3,817	3,398	3,320	3,412	1,720	1,734	16,183	15,103
Size of farm—acres	143	144	215	219	152	155	334	355	373	342	649	616	300	303
Value of farm real estate	$9,200	$9,300	$9,810	$10,189	$15,070	$15,027	$21,820	$20,760	$10,300	$10,537	$17,490	$17,861	$14,530	$14,323
Value of farm personalty, Jan. 1	3,020	3,142	1,760	1,781	2,730	2,754	3,810	3,872	2,140	2,016	4,490	4,329	2,960	2,937
Receipts:														
Crop sales	810	893	1,010	1,006	600	638	640	928	1,070	1,238	1,210	1,468	850	1,012
Sales of livestock	370	360	360	341	820	838	1,330	1,497	420	384	960	988	760	780
Sales of livestock products	1,390	1,474	270	287	710	728	430	462	220	208	620	643	550	570
Miscellaneous sales	120	129	60	55	70	71	80	74	50	46	80	80	80	72
Total	2,690	2,856	1,700	1,689	2,200	2,275	2,480	2,961	1,760	1,876	2,870	3,179	2,240	2,434
Cash outlay:														
Hired labor	470	555	340	349	270	283	300	336	280	312	610	651	350	384
Livestock bought	170	164	160	142	240	206	390	387	150	122	250	270	240	222
Feed bought	490	559	100	124	190	237	220	277	110	131	220	266	210	248
Fertilizer	130	134	210	202	40	44	10	6	50	52	10	14	60	66
Seed	60	60	40	38	50	47	40	44	30	37	50	44	40	44
Taxes on farm property	160	167	110	122	220	230	240	239	140	138	270	254	190	192
Machinery and tools	140	129	70	69	120	101	120	126	70	80	140	119	110	103
Miscellaneous other	180	181	80	91	160	144	170	165	100	86	280	303	150	151
Total	1,800	1,949	1,110	1,137	1,290	1,292	1,490	1,580	930	958	1,830	1,921	1,350	1,410
Receipts less expense	890	907	590	552	910	983	990	1,381	830	918	1,040	1,258	890	1,024
Change in inventory	180	111	150	104	120	172	120	273	60	141	270	248	130	181
Net result	1,070	1,022	740	656	1,030	1,155	1,110	1,654	890	1,059	1,310	1,506	1,020	1,205
Interest paid	90	97	100	110	180	185	380	387	170	177	390	371	230	230
Spent for farm improvements	150	135	120	124	140	127	170	139	110	133	140	132	140	133
Non cash estimated items:														
Value of food produced and used on farm [1]	260	239	310	303	260	267	260	265	260	266	250	247	265	266
Value of family labor, including owner [1]	970	912	670	500	890	822	930	1,091	680	516	1,020	969	870	789
Change in value of real estate during year (—shows decrease)	+22	+105	+52	+138	−105	+113	−211	+200	+17	+168	−69	+90	−66	+145

Division of Farm Management and Costs. Computed from reports of individual farms operated by their owners.

[1] Averages of farms reporting the item.

TABLE 681.—*Returns from farming: Returns to labor and to capital, 1923 and 1924*

Item	North Atlantic		South Atlantic		East North Central		West North Central		South Central		Western		United States	
	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923	1924
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Net results as given	1,070	1,022	740	656	1,030	1,155	1,110	1,654	890	1,059	1,310	1,506	1,020	1,205
Add food and fuel [1]	260	239	310	303	260	267	260	265	260	266	250	247	265	266
Total	1,330	1,261	1,050	959	1,290	1,422	1,370	1,919	1,150	1,325	1,560	1,753	1,285	1,471
Less unpaid labor [2]	970	912	670	500	890	822	930	1,091	680	516	1,020	969	870	789
Return to capital	360	349	380	459	400	600	440	828	470	809	540	784	415	682
Return to capital, per cent [3]	2.9	2.8	3.3	3.8	2.2	3.4	1.7	3.4	3.8	6.4	2.5	3.5	2.3	4.0
Interest, assuming rate of 6 per cent [4]	730	747	690	718	1,070	1,067	1,540	1,478	750	753	1,320	1,331	1,050	1,036
Return to all unpaid labor	600	514	360	241	220	355	−170	441	400	572	240	422	235	435
Return to operator (prorated) [5]	470	448	230	216	159	279	−115	247	245	473	205	372	154	313
Return to operator (family labor at hired labor rates) [6]	390	396	117	182	−27	178	−472	−39	134	483	94	308	−71	215

Division of Farm Management and Costs. Computed from reports of owner operators (16,183 in 1923 and 15,103 in 1924) and other information. In computing this table certain arbitrary assumptions are explicitly or implicitly made.

[1] Averages of estimates made by 15,025 farmers for 1923; by 13,753 farmers for 1924.
[2] Averages of estimates made by 11,832 farmers for 1923; by 12,133 farmers for 1924.
[3] Based on the reported value of farm property Jan. 1.
[4] Many recall paying more than 6 per cent.
[5] Assumes that all unpaid family labor shared the reduced amount according to the amount of its claim established: (1) For the operator, as 12 times the monthly wages of hired help without board, and (2) for the rest of the family the difference between operator's labor so figured and the reported value of unpaid labor.
[6] The assumption is that the operator bears all the burden of failure to earn common hired labor wages, and attributes such wages to his family before computing his remainder or wages.

TABLE 682.—*Plow lands: Value per acre, by States, 1920–1925*

State	Average of poor plow lands						Average of good plow lands						Average of all plow lands					
	1920	1921	1922	1923	1924	1925	1920	1921	1922	1923	1924	1925	1920	1921	1922	1923	1924	1925
Maine	$30	$25	$22	$22	$22	$21	$56	$50	$47	$48	$50	$49	$42	$36	$35	$36	$37	$36
New Hampshire	24	24	25	24	23	23	64	63	64	58	59	60	42	41	41	40	40	41
Vermont	30	29	27	24	24	23	69	67	63	56	55	53	48	47	45	40	40	36
Massachusetts	40	40	39	39	39	41	103	98	105	106	106	107	72	69	69	70	69	70
Rhode Island	50	50	50	51	52	56	105	105	105	106	110	115	85	85	86	87	88	91
Connecticut	35	34	32	32	33	34	100	90	90	88	88	90	60	58	58	57	58	60
New York	39	40	38	35	33	32	84	84	83	80	75	74	64	65	62	59	54	53
New Jersey	50	55	48	49	47	49	104	125	109	109	105	108	80	92	84	83	82	84
Pennsylvania	40	39	33	35	32	32	86	81	73	73	68	69	66	62	54	54	53	53
Ohio	69	60	52	52	51	48	132	110	100	100	96	91	105	88	78	78	75	70
Indiana	80	71	56	54	51	49	150	137	108	105	101	96	119	109	85	82	78	74
Illinois	115	105	91	86	81	82	213	195	160	155	148	153	170	157	131	126	120	123
Michigan	41	41	39	36	35	35	80	83	77	74	73	75	64	65	60	57	56	57
Wisconsin	66	65	58	60	57	49	125	122	119	108	105	91	100	98	87	86	82	72
Minnesota	73	74	67	59	55	54	120	121	102	96	89	86	100	101	87	80	75	73
Iowa	157	145	119	115	107	100	257	238	193	181	169	162	219	200	163	153	143	135
Missouri	60	58	44	45	44	42	110	106	84	85	83	81	87	83	65	66	65	63
North Dakota	31	30	25	24	22	22	49	49	44	40	37	37	43	42	37	33	31	31
South Dakota	67	66	52	43	41	44	108	102	80	73	64	68	90	85	72	58	54	58
Nebraska	85	80	72	65	64	64	150	140	123	116	113	108	125	115	101	96	90	90
Kansas	50	50	43	41	38	37	90	90	77	74	69	69	70	70	60	58	54	54
Delaware	44	38	31	28	30	28	86	72	67	70	68	66	66	55	50	51	50	48
Maryland	46	31	31	32	33	31	82	70	67	67	70	66	60	51	49	50	52	50
Virginia	34	32	27	31	32	28	73	70	60	64	65	58	53	50	43	47	48	42
West Virginia	32	31	27	28	27	24	75	70	62	67	66	55	51	48	42	45	44	38
North Carolina	42	36	33	35	35	33	87	76	67	70	75	70	63	55	49	52	54	52
South Carolina	41	32	23	21	22	24	82	68	46	45	48	52	61	50	35	35	38	38
Georgia	30	23	18	17	16	17	63	50	38	36	34	36	46	36	28	26	24	25
Florida	23	25	21	20	20	18	53	55	56	43	46	48	36	40	37	31	33	33
Kentucky	42	33	28	27	26	26	95	75	67	66	63	60	70	53	47	46	43	44
Tennessee	40	35	28	30	30	27	90	81	68	70	70	65	60	55	47	50	50	46
Alabama	20	17	14	16	16	18	43	38	32	34	35	37	30	26	23	26	26	28
Mississippi	23	16	16	17	17	16	49	36	34	36	36	34	35	26	25	26	26	24
Arkansas	26	24	20	21	20	20	65	54	46	47	45	44	45	38	33	34	33	32
Louisiana	34	24	21	24	25	22	65	50	42	47	46	45	50	38	31	34	35	35
Oklahoma	30	29	26	24	23	24	63	63	58	52	52	53	47	46	41	37	37	38
Texas	36	33	29	28	29	32	72	70	60	57	59	64	56	52	47	44	45	50
Montana	21	19	15	14	13	12	48	41	35	31	30	28	36	30	23	23	21	19
Idaho	60	58	50	46	42	44	135	128	110	93	88	90	105	99	85	76	68	68
Wyoming	34	25	23	21	15	13	70	60	54	48	38	37	53	44	37	35	27	25
Colorado	40	35	35	30	29	24	88	86	84	75	72	68	66	67	61	56	52	48
New Mexico	30	30	23	21	23	23	60	60	57	53	56	55	45	45	41	37	39	38
Arizona	90	75	70	70	75	70	180	140	130	132	140	140	130	120	115	116	120	116
Utah	60	50	42	42	40	40	135	140	125	122	119	122	103	100	90	88	86	90
Nevada	46	45	40	30	42	45	110	90	80	80	85	90	80	75	70	65	73	78
Washington	68	63	52	50	49	45	150	140	120	110	108	102	115	105	90	88	86	80
Oregon	60	60	55	52	50	46	136	135	110	106	104	100	100	103	90	84	82	78
California	70	75	69	53	51	51	175	200	193	166	166	164	130	135	128	113	112	111
United States	61	57	47	45	43	42	113	106	89	85	82	80	90	84	70	67	64	63

Division of Crop and Livestock Estimates. From reports of crop reporters on Mar. 1 on average values in their localities.

TABLE 683.—*Average prevailing farm wage rates, by geographic divisions* [1]

Basis of rate, year, and month	North Atlantic States	North Central States	South Atlantic States	South Central States	Western States	United States
Per month, with board:	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1910	21.47	24.11	13.76	15.56	32.41	19.58
1915	23.85	26.23	14.70	16.13	33.51	21.08
1920	52.37	56.44	34.88	36.60	73.36	47.24
1921	38.36	35.53	21.64	22.75	47.75	30.25
1922	37.57	33.73	21.36	22.35	46.22	29.31
1923	43.52	38.63	24.39	24.55	51.02	33.09
1924	44.57	38.41	25.42	25.16	49.18	33.34
1925	44.97	39.23	25.78	25.28	50.71	33.88

[1] Yearly averages are from reports by crop reporters, giving average wages for the year in their localities.

TABLE 683.—*Average prevailing farm wage rates, by geopraphic division* [1]—Con.

Basis of rate, year, and month	North Atlantic States	North Central States	South Atlantic States	South Central States	Western States	United States
Per month, with board—Continued.						
Oct. 1, 1922	37.41	34.49	20.53	21.48	45.61	29.03
Jan. 1, 1923	36.85	31.61	20.23	21.48	43.55	27.87
Apr. 1, 1923	41.77	37.04	22.07	22.52	46.43	30.90
July 1, 1923	49.06	40.97	24.14	24.49	56.11	34.64
Oct. 1, 1923	47.55	40.14	24.68	25.26	54.66	34.56
Nov. 1, 1923	46.62	39.84	24.91	25.21	56.07	34.54
Jan. 1, 1924	42.51	35.51	24.09	23.78	48.77	31.55
Mar. 1, 1924	43.91	37.47	24.41	24.37	48.81	32.52
Apr. 1, 1924	45.35	39.68	25.04	24.52	49.66	33.57
July 1, 1924	46.04	39.71	26.28	25.85	50.00	34.34
Oct. 1, 1924	45.50	40.04	25.46	26.24	50.40	34.38
Jan. 1, 1925	41.38	34.20	24.89	24.01	46.64	31.07
Apr. 1, 1925	45.03	40.18	25.39	24.79	49.85	33.86
July 1, 1925	46.35	40.72	26.38	25.75	52.92	34.94
Oct. 1, 1925	45.29	40.80	26.20	26.32	52.02	34.91
Jan. 1, 1926	43.20	35.23	25.17	24.27	48.05	31.82
Per month, without board:						
1910	32.95	33.82	19.77	22.27	46.03	28.04
1915	35.66	36.25	21.06	23.06	48.37	29.97
1920	76.18	75.50	47.37	52.07	99.81	65.05
1921	57.92	49.77	31.31	33.21	68.82	43.58
1922	56.51	47.31	30.71	32.16	66.98	42.09
1923	63.54	53.23	34.75	35.06	72.24	46.74
1924	65.58	52.48	36.06	36.19	71.25	47.22
1925	65.58	52.48	36.06	36.19	71.25	47.22
Oct. 1, 1922	55.41	48.29	30.00	30.99	67.21	41.79
Jan. 1, 1923	54.74	45.27	29.62	31.06	64.19	40.50
Apr. 1, 1923	61.32	51.34	32.32	32.97	67.46	44.41
July 1, 1923	70.63	56.37	34.12	34.91	78.08	48.61
Oct. 1, 1923	67.00	55.06	34.72	36.38	76.45	48.42
Nov. 1, 1923	67.18	54.53	35.18	36.32	77.42	48.45
Jan. 1, 1924	63.66	50.10	34.52	34.75	70.83	45.53
Mar. 1, 1924	65.52	51.50	35.17	34.73	69.82	46.16
Apr. 1, 1924	66.91	53.69	35.21	35.43	71.99	47.38
July 1, 1924	66.64	53.39	36.56	37.04	71.83	48.02
Oct. 1, 1924	66.36	54.60	37.08	37.05	71.91	48.46
Jan. 1, 1925	62.42	48.26	35.37	35.25	69.29	45.04
Apr. 1, 1925	66.30	53.48	36.03	35.55	71.42	47.40
July 1, 1925	67.34	54.30	37.41	36.56	73.74	48.55
Oct. 1, 1925	66.88	55.10	36.84	37.25	75.19	48.99
Jan. 1, 1926	65.09	50.54	36.32	35.16	70.63	46.26
Per day, with board:						
Oct. 1, 1922	2.16	1.96	1.04	1.07	2.32	1.56
Jan. 1, 1923	2.14	1.75	1.02	1.05	2.10	1.46
Apr. 1, 1923	2.28	1.88	1.10	1.10	2.20	1.55
July 1, 1923	2.80	2.25	1.28	1.27	2.67	1.84
Oct. 1, 1923	2.96	2.56	1.36	1.39	2.81	2.02
Nov. 1, 1923	2.81	2.53	1.37	1.38	2.75	1.99
Jan. 1, 1924	2.60	2.20	1.26	1.26	2.47	1.79
Mar. 1, 1924	2.60	2.19	1.29	1.26	2.36	1.78
Apr. 1, 1924	2.64	2.17	1.30	1.25	2.31	1.77
July 1, 1924	2.69	2.24	1.38	1.41	2.33	1.87
Oct. 1, 1924	2.80	2.44	1.36	1.39	2.40	1.93
Jan. 1, 1925	2.50	2.04	1.41	1.29	2.23	1.74
Apr. 1, 1925	2.63	2.16	1.35	1.26	2.22	1.77
July 1, 1925	2.73	2.27	1.41	1.38	2.49	1.89
Oct. 1, 1925	2.78	2.45	1.42	1.40	2.49	1.95
Jan. 1, 1926	2.59	2.08	1.37	1.28	2.33	1.76
Per day, without board:						
Oct. 1, 1922	2.88	2.58	1.40	1.46	3.03	2.07
Jan. 1, 1923	2.84	2.37	1.36	1.43	2.84	1.97
Apr. 1, 1923	3.06	2.53	1.47	1.49	2.93	2.09
July 1, 1923	3.65	3.00	1.70	1.68	3.52	2.44
Oct. 1, 1923	3.79	3.27	1.72	1.77	3.58	2.58
Nov. 1, 1923	3.76	3.28	1.75	1.80	3.51	2.58
Jan. 1, 1924	3.47	2.91	1.70	1.67	3.31	2.38
Mar. 1, 1924	3.47	2.90	1.72	1.65	3.20	2.36
Apr. 1, 1924	3.48	2.88	1.71	1.63	3.13	2.34
July 1, 1924	3.51	2.94	1.77	1.80	3.16	2.43
Oct. 1, 1924	3.57	3.12	1.77	1.85	3.25	2.51
Jan. 1, 1925	3.24	2.75	1.80	1.69	3.02	2.31
Apr. 1, 1925	3.43	2.83	1.76	1.64	3.05	2.33
July 1, 1925	3.54	2.97	1.84	1.71	3.25	2.44
Oct. 1, 1925	3.58	3.14	1.84	1.83	3.33	2.53
Jan. 1, 1926	3.42	2.80	1.78	1.64	3.14	2.33

Division of Crop and Livestock Estimates.

[1] Yearly averages are from reports by crop reporters, giving average wages for the year in their localities.

TABLE 684.—*Farm wage rates and index numbers, 1866–1925*

[1910–1914=100]

Year	Average yearly farm wage [1]				Weighted average wage rate per month [2]	Index numbers of farm wages
	Per month—		Per day—			
	With board	Without board	With board	Without board		
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	
1866 [3]	10.09	15.50	0.64	0.90	13.14	55
1869	9.97	15.50	.63	.87	12.93	54
1874 or 1875	11.16	17.10	.68	.94	14.19	59
1877 or 1879 [4]	10.86	16.79	.61	.84	13.34	56
1879 or 1880	11.70	17.53	.64	.89	14.14	59
1880 or 1881	12.32	18.52	.67	.92	14.82	62
1881 or 1882	12.88	19.11	.70	.97	15.43	65
1884 or 1885	13.08	19.22	.71	.96	15.58	65
1887 or 1888	13.29	19.67	.72	.98	15.87	66
1889 or 1890	13.29	19.45	.72	.97	15.79	66
1891 or 1892	13.48	20.02	.73	.98	16.06	67
1893	13.85	19.97	.72	.92	15.93	67
1894	12.70	18.57	.65	.84	14.60	61
1895	12.75	18.74	.65	.85	14.69	62
1898	13.29	19.16	.71	.94	15.58	65
1899	13.90	19.97	.75	.99	16.34	68
1902	15.51	22.12	.83	1.09	18.12	76
1906	18.73	26.19	1.03	1.32	21.92	92
1909	20.48	28.09	1.04	1.31	23.00	96
1910	19.58	28.04	1.07	1.40	23.08	97
1911	19.85	28.33	1.07	1.40	23.25	97
1912	20.46	29.14	1.12	1.44	24.01	101
1913	21.27	30.21	1.15	1.48	24.83	104
1914	20.90	29.72	1.11	1.44	24.26	101
1915	21.08	29.97	1.12	1.45	24.46	102
1916	23.04	32.58	1.24	1.60	26.83	112
1917	28.64	40.19	1.56	2.00	33.42	140
1918	35.12	49.13	2.05	2.61	42.12	176
1919	40.14	56.77	2.44	3.10	49.11	206
1920	47.24	65.05	2.84	3.56	57.01	239
1921	30.25	43.58	1.66	2.17	35.77	150
1922	29.31	42.09	1.64	2.14	34.91	146
1923	33.09	46.74	1.91	2.45	39.64	166
1924 [5]	33.34	47.22	1.88	2.44	39.67	166
1925 [5]	33.88	47.80	1.89	2.46	40.20	168
1923—January	27.87	40.50	1.46	1.97	32.61	137
April	30.90	44.41	1.55	2.09	35.42	148
July	34.64	48.61	1.84	2.44	40.30	169
October	34.56	48.42	2.02	2.58	41.52	174
1924—January	31.55	45.53	1.79	2.38	38.01	159
April	33.57	47.38	1.77	2.34	38.95	163
July	34.34	48.02	1.87	2.43	40.15	168
October	34.38	48.46	1.93	2.51	40.81	171
1925—January	31.07	45.04	1.74	2.31	37.24	156
April	33.86	47.40	1.77	2.33	39.04	163
July	34.94	48.55	1.89	2.44	40.62	170
October	34.91	48.99	1.95	2.53	41.28	173
1926—January	31.82	46.26	1.76	2.33	37.94	159

Division of Crop and Livestock Estimates.

[1] Yearly averages are from reports by crop reporters, giving average wages for the year in their localities.
[2] This column has significance only as an essential step in computing the wage index.
[3] Years 1866 to 1878 in gold.
[4] 1877 or 1878, 1878 or 1879 (combined).
[5] Weighted average quarterly, April (weight 1), July (weight 5), October (weight 5), and January, 1925 (weight 1).

TABLE 685.—*Wages: Male farm labor, by States, quarterly, 1923–1926*

PER DAY, WITH BOARD

State and division	1923				1924 [1]				1925 [1]				1926 [1]
	Jan.	Apr.	July	Oct. [1]	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	Oct.	Jan.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	2.15	2.15	2.56	2.80	2.45	2.40	2.54	2.53	2.18	2.45	2.35	2.50	2.60
New Hampshire	2.25	2.00	2.50	2.78	2.65	2.65	2.54	2.65	2.30	2.55	2.50	2.60	2.45
Vermont	1.90	2.25	2.90	2.54	2.40	2.45	2.61	2.48	2.35	2.45	2.50	2.50	2.35
Massachusetts	2.20	2.60	3.00	2.99	2.70	2.68	2.71	2.98	2.70	3.00	2.85	2.90	2.60
Rhode Island	2.25	2.50	------	2.90	2.80	2.75	3.08	2.90	2.75	3.00	2.90	2.80	2.90
Connecticut	2.10	2.15	3.00	2.50	2.50	2.40	2.80	2.93	2.56	2.70	2.75	2.70	2.45
New York	2.20	2.45	3.21	3.25	2.70	2.85	2.90	3.05	2.60	2.75	2.95	3.05	2.70
New Jersey	2.20	2.00	2.61	2.85	2.70	2.65	2.70	2.75	2.45	2.65	2.75	2.65	2.65
Pennsylvania	2.05	2.15	2.32	2.85	2.50	2.50	2.45	2.55	2.45	2.45	2.55	2.60	2.50
North Atlantic	2.14	2.28	2.80	2.96	2.60	2.64	2.69	2.80	2.50	2.63	2.73	2.78	2.59
Ohio	1.90	2.00	2.29	2.68	2.40	2.40	2.34	2.37	2.23	2.25	2.30	2.55	2.30
Indiana	1.70	1.80	1.99	2.45	2.25	2.10	2.15	2.22	2.00	2.00	2.05	2.20	2.00
Illinois	1.80	1.80	2.27	2.50	2.30	2.35	2.35	2.35	2.15	2.35	2.40	2.35	2.20
Michigan	1.85	2.00	2.56	2.82	2.60	2.55	2.50	2.50	2.30	2.35	2.50	2.65	2.40
Wisconsin	1.80	2.00	2.54	2.65	2.10	2.20	2.30	2.50	2.00	2.20	2.30	2.50	2.10
Minnesota	1.75	2.05	2.33	2.80	2.10	2.11	2.25	2.80	1.98	2.15	2.30	2.85	2.05
Iowa	1.95	2.10	2.45	2.60	2.40	2.30	2.40	2.50	2.20	2.35	2.40	2.50	2.15
Missouri	1.25	1.40	1.58	1.70	1.60	1.55	1.70	1.70	1.60	1.60	1.70	1.75	1.60
North Dakota	1.75	2.15	2.22	3.60	1.95	2.00	2.00	4.00	1.90	2.00	2.30	3.80	1.70
South Dakota	1.80	2.07	2.62	3.05	2.50	2.30	2.35	3.05	2.34	2.40	2.40	2.85	2.15
Nebraska	1.85	1.80	2.57	2.66	2.35	2.30	2.30	2.40	1.85	2.30	2.40	2.35	2.30
Kansas	1.70	1.75	2.01	2.40	2.10	2.00	2.40	2.40	2.10	2.10	2.50	2.20	2.00
North Central	1.75	1.88	2.25	2.56	2.20	2.17	2.24	2.44	2.04	2.16	2.27	2.45	2.08
Delaware	------	1.75	------	2.72	2.25	2.10	2.15	2.30	2.00	2.15	2.15	2.75	2.35
Maryland	1.40	1.45	1.70	2.25	2.00	1.90	2.00	2.05	1.98	1.95	2.15	2.35	2.05
Virginia	1.20	1.28	1.51	1.73	1.60	1.60	1.62	1.65	1.60	1.55	1.65	1.60	1.55
West Virginia	1.55	1.75	1.89	2.00	1.85	1.85	1.90	1.85	1.60	1.75	1.80	1.95	1.75
North Carolina	1.20	1.30	1.54	1.43	1.25	1.45	1.55	1.46	1.90	1.50	1.55	1.50	1.50
South Carolina	.75	.74	.89	1.00	1.00	1.00	1.05	1.05	1.06	1.05	1.10	1.05	1.05
Georgia	.75	.83	.96	.93	.90	.94	1.05	1.00	.98	1.05	1.10	1.10	1.05
Florida	1.00	1.00	1.22	1.25	1.15	1.15	1.25	1.30	1.18	1.25	1.30	1.35	1.45
South Atlantic	1.02	1.10	1.28	1.36	1.26	1.30	1.38	1.36	1.41	1.35	1.41	1.42	1.37
Kentucky	1.10	1.15	1.46	1.65	1.40	1.40	1.45	1.50	1.30	1.25	1.45	1.45	1.30
Tennessee	1.00	1.10	1.14	1.30	1.20	1.22	1.25	1.25	1.20	1.20	1.25	1.20	1.15
Alabama	.90	.94	1.00	1.10	1.10	1.05	1.15	1.20	1.10	1.15	1.30	1.20	1.10
Mississippi	.95	1.00	1.12	1.10	1.10	1.15	1.20	1.15	1.15	1.10	1.15	1.25	1.20
Arkansas	1.01	1.03	1.19	1.20	1.15	1.20	1.25	1.26	1.18	1.25	1.25	1.25	1.15
Louisiana	1.00	.92	1.12	1.25	1.10	1.11	1.25	1.20	1.20	1.15	1.15	1.40	1.30
Oklahoma	1.20	1.35	1.66	1.60	1.50	1.35	1.80	1.75	1.60	1.40	1.90	1.80	1.60
Texas	1.15	1.20	1.42	1.65	1.40	1.40	1.70	1.60	1.45	1.40	1.50	1.55	1.40
South Central	1.05	1.10	1.27	1.39	1.26	1.25	1.41	1.39	1.29	1.26	1.38	1.40	1.28
Montana	2.05	2.30	2.41	3.40	2.70	2.50	2.60	3.25	2.25	2.60	2.70	3.25	2.50
Idaho	2.05	2.05	2.72	2.95	2.60	2.37	2.50	2.60	2.35	2.30	2.70	2.85	2.40
Wyoming	1.95	2.20	2.62	2.75	2.40	2.40	2.35	2.35	2.25	2.25	2.25	2.55	2.20
Colorado	1.75	1.80	2.28	2.40	2.40	2.12	2.20	2.30	2.00	2.05	2.15	2.20	2.15
New Mexico	1.30	1.30	1.42	1.50	1.50	1.50	1.50	1.70	1.50	1.50	1.50	1.60	1.55
Arizona	1.80	2.25	------	1.75	1.75	2.03	1.80	2.03	1.89	1.80	2.10	1.95	1.55
Utah	1.90	1.95	2.00	2.62	2.30	2.40	2.60	2.50	2.50	2.35	2.55	2.65	2.30
Nevada	2.00	------	3.00	2.81	2.60	2.47	2.70	2.50	2.40	2.30	2.60	2.40	2.10
Washington	2.10	2.30	2.80	3.66	2.80	2.53	2.47	2.36	2.30	2.30	2.75	2.80	2.50
Oregon	2.10	2.25	2.60	3.30	2.50	2.49	2.50	2.50	2.23	2.25	2.50	2.40	2.20
California	2.45	2.50	3.12	2.90	2.65	2.40	2.40	2.40	2.40	2.35	2.70	2.55	2.60
Western	2.10	2.20	2.67	2.81	2.47	2.31	2.33	2.40	2.23	2.22	2.49	2.49	2.33
United States	1.46	1.55	1.84	2.02	1.79	1.77	1.87	1.93	1.74	1.77	1.89	1.95	1.76

[1] Includes piecework.

TABLE 685.—*Wages: Male farm labor, by States, quarterly, 1923–1926*—Contd.

PER DAY, WITHOUT BOARD

State and division	1923				1924 [1]				1925 [1]				1926 [1]
	Jan.	Apr.	July	Oct. [1]	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	Oct.	Jan.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	2.80	2.80	3.12	3.47	3.10	3.11	3.16	3.12	2.90	3.00	3.00	3.30	2.90
New Hampshire	3.00	3.00	3.89	3.71	3.30	3.40	3.60	3.48	3.15	3.35	3.35	3.30	3.30
Vermont	2.50	2.75	3.20	3.33	3.15	3.20	3.22	3.17	3.08	3.10	3.25	3.20	3.10
Massachusetts	3.20	3.60	4.00	3.70	3.80	3.65	3.79	3.72	3.60	3.65	3.80	3.65	3.70
Rhode Island	3.00	3.50	.....	3.77	3.75	3.65	3.95	3.70	3.55	3.75	3.80	3.65	3.55
Connecticut	3.00	2.85	4.17	3.71	3.55	3.55	3.50	3.78	3.48	3.65	3.55	3.70	3.60
New York	2.85	3.25	4.07	4.10	3.60	3.65	3.75	3.75	3.40	3.60	3.75	3.80	3.60
New Jersey	3.00	2.75	3.34	3.90	3.70	3.65	3.65	3.70	3.40	3.50	3.70	3.65	3.45
Pennsylvania	2.70	2.90	3.21	3.60	3.30	3.30	3.20	3.40	2.95	3.25	3.35	3.40	3.25
North Atlantic	2.84	3.06	3.65	3.79	3.47	3.48	3.51	3.57	3.24	3.43	3.54	3.58	3.42
Ohio	2.50	2.60	3.03	3.33	3.15	3.09	3.07	3.08	2.94	2.90	3.00	3.25	3.10
Indiana	2.25	2.40	2.63	3.14	3.00	2.75	2.80	2.87	2.68	2.60	2.65	2.85	2.65
Illinois	2.40	2.40	2.94	3.25	3.10	3.10	3.00	3.10	2.83	3.10	3.10	3.05	2.85
Michigan	2.50	2.65	3.38	3.67	3.40	3.30	3.25	3.25	3.10	3.00	3.20	3.35	3.10
Wisconsin	2.50	2.80	3.42	3.30	2.80	2.90	3.05	3.10	2.70	2.85	3.00	3.25	2.80
Minnesota	2.45	2.70	3.24	3.50	2.90	2.89	3.05	3.50	2.70	2.95	3.10	3.50	2.85
Iowa	2.55	2.75	3.11	3.35	3.00	3.00	3.05	3.10	2.85	3.00	3.05	3.15	2.80
Missouri	1.75	1.85	2.18	2.20	2.00	2.05	2.20	2.15	2.05	2.05	2.25	2.30	2.20
North Dakota	2.30	3.00	3.12	4.40	2.80	2.85	3.00	5.00	2.80	2.85	3.35	4.50	2.75
South Dakota	2.50	2.88	3.37	4.00	3.30	3.30	3.35	4.00	3.20	3.40	3.40	3.75	3.10
Nebraska	2.55	2.55	3.29	3.30	3.15	3.05	3.00	3.00	3.00	3.05	3.15	3.15	3.05
Kansas	2.40	2.40	2.85	3.30	2.80	2.70	3.00	3.10	2.75	2.75	3.15	2.90	2.70
North Central	2.37	2.53	3.00	3.27	2.91	2.88	2.94	3.12	2.75	2.83	2.97	3.14	2.80
Delaware	.....	2.25	.....	3.15	2.75	2.75	2.80	3.00	2.68	2.55	2.85	3.30	2.90
Maryland	1.90	2.00	2.30	3.00	2.70	2.50	2.65	2.75	2.67	2.60	2.80	3.10	2.85
Virginia	1.60	1.75	2.01	2.18	2.05	2.05	2.12	2.20	2.00	2.05	2.10	2.10	2.05
West Virginia	2.00	2.30	2.52	2.50	2.65	2.50	2.50	2.50	2.40	2.50	2.30	2.55	2.40
North Carolina	1.55	1.70	1.97	1.75	1.80	1.88	1.98	1.85	2.26	1.90	2.20	2.00	1.90
South Carolina	1.00	.99	1.21	1.25	1.25	1.35	1.35	1.35	1.40	1.40	1.40	1.35	1.30
Georgia	1.00	1.08	1.27	1.20	1.20	1.22	1.30	1.30	1.25	1.30	1.35	1.35	1.35
Florida	1.50	1.60	1.82	1.60	1.70	1.65	1.65	1.70	1.72	1.75	1.75	1.85	2.05
South Atlantic	1.36	1.47	1.70	1.72	1.70	1.71	1.77	1.77	1.80	1.76	1.84	1.84	1.78
Kentucky	1.55	1.55	1.99	2.20	1.90	1.85	1.90	2.00	1.70	1.75	1.85	1.95	1.65
Tennessee	1.35	1.45	1.56	1.68	1.55	1.60	1.60	1.60	1.55	1.50	1.55	1.50	1.45
Alabama	1.25	1.26	1.31	1.40	1.40	1.35	1.50	1.45	1.40	1.35	1.45	1.55	1.30
Mississippi	1.25	1.35	1.51	1.50	1.45	1.50	1.55	1.50	1.50	1.50	1.50	1.70	1.55
Arkansas	1.10	1.40	1.68	1.60	1.60	1.55	1.65	1.68	1.65	1.65	1.65	1.75	1.58
Louisiana	1.35	1.30	1.46	1.57	1.50	1.43	1.55	1.75	1.57	1.50	1.50	1.65	1.70
Oklahoma	1.65	1.80	1.97	2.05	2.10	1.80	2.20	2.25	2.10	1.95	2.25	2.35	2.10
Texas	1.55	1.65	1.86	2.10	1.80	1.80	2.15	2.30	1.90	1.80	1.85	2.05	1.80
South Central	1.43	1.49	1.68	1.77	1.67	1.63	1.80	1.85	1.69	1.64	1.71	1.83	1.64
Montana	2.80	2.90	3.38	4.20	3.80	3.40	3.50	3.80	3.25	3.50	3.80	3.85	3.30
Idaho	2.75	2.70	3.72	3.45	3.40	3.15	3.20	3.35	3.05	3.30	3.30	3.70	3.10
Wyoming	2.60	2.85	3.62	3.65	3.20	3.25	3.00	3.15	3.05	2.75	3.25	3.40	3.15
Colorado	2.40	2.50	3.14	3.10	3.05	2.89	2.95	3.30	2.75	2.80	3.00	3.00	2.95
New Mexico	1.80	1.80	2.00	2.20	2.00	2.00	2.00	2.25	2.00	2.00	2.00	2.15	2.10
Arizona	2.75	3.15	.....	2.50	2.50	2.42	2.25	2.57	2.54	2.50	2.60	2.65	2.50
Utah	2.45	2.55	2.80	3.26	3.00	3.01	3.20	3.30	3.10	2.85	3.15	2.90	3.10
Nevada	2.75	.....	4.00	3.25	3.00	3.42	3.50	3.50	3.20	3.20	3.30	3.15	3.10
Washington	2.90	3.00	3.70	4.38	3.60	3.47	3.28	3.17	3.05	3.40	3.55	3.70	3.40
Oregon	2.70	3.00	3.45	4.00	3.50	3.31	3.50	3.25	3.01	2.75	2.95	3.10	2.70
California	3.30	3.40	4.00	3.80	3.60	3.35	3.40	3.40	3.30	3.30	3.60	3.60	3.50
Western	2.84	2.93	3.52	3.58	3.31	3.13	3.16	3.25	3.02	3.05	3.25	3.33	3.14
United States	1.97	2.09	2.44	2.58	2.38	2.34	2.43	2.51	2.31	2.33	2.44	2.53	2.33

[1] Includes piecework.

TABLE 685.—*Wages: Male farm labor, by States, quarterly, 1923–1926*—Contd.

PER MONTH, WITH BOARD

State and division	1923				1924				1925				1926
	Jan.	Apr.	July	Oct.[1]	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	Oct.	Jan.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	38.00	37.00	46.67	44.00	43.00	43.00	45.00	43.00	41.00	39.00	42.00	43.00	42.00
New Hampshire	35.00	33.00	60.00	49.00	45.00	46.00	47.00	47.00	44.00	45.00	48.00	46.00	44.00
Vermont	33.00	40.00	44.64	42.00	42.00	44.00	46.00	45.00	42.00	45.00	47.00	46.00	40.50
Massachusetts	40.00	54.00	47.50	54.00	51.00	51.00	48.00	48.00	47.00	49.00	44.00	50.00	46.50
Rhode Island	41.00	42.50	.....	53.00	50.00	47.00	54.00	51.00	45.00	46.00	50.00	50.00	52.50
Connecticut	41.00	46.00	58.33	54.00	48.00	50.00	55.00	53.00	49.00	51.00	51.00	51.00	52.50
New York	38.00	45.00	58.71	49.00	42.50	48.50	49.00	48.00	41.25	48.00	51.00	48.00	44.25
New Jersey	38.00	42.00	49.14	52.00	45.00	46.00	48.00	48.00	44.00	50.00	49.00	46.00	47.00
Pennsylvania	34.00	36.00	38.38	43.00	38.00	39.50	39.40	39.85	37.45	39.00	40.00	39.50	38.50
North Atlantic	36.85	41.77	49.06	47.55	42.51	45.35	46.04	45.50	41.38	45.03	46.35	45.29	43.20
Ohio	31.50	34.00	38.70	39.00	37.00	37.00	37.00	37.00	35.00	37.00	37.00	38.00	37.00
Indiana	31.50	33.00	36.64	36.60	35.00	37.00	36.00	35.00	33.00	36.00	35.00	35.00	34.00
Illinois	33.00	37.50	41.91	41.00	38.00	42.00	42.00	40.00	38.00	43.00	43.00	42.00	39.50
Michigan	31.00	38.00	43.05	43.00	38.50	43.00	40.00	40.00	36.50	40.00	41.00	41.00	37.00
Wisconsin	35.00	44.00	47.12	46.00	37.70	45.60	45.70	45.60	34.00	45.00	45.00	46.50	38.00
Minnesota	30.00	39.00	43.88	43.00	32.00	39.00	41.00	43.00	30.00	42.00	44.00	45.00	32.50
Iowa	35.50	42.00	46.24	44.00	39.50	45.90	45.80	44.20	37.00	47.00	46.25	45.50	37.00
Missouri	27.00	30.00	31.87	32.00	31.00	32.00	32.00	33.00	31.00	32.00	33.00	32.00	30.00
North Dakota	28.50	39.00	43.00	45.90	29.30	39.50	41.00	50.00	30.00	40.75	46.00	49.50	27.25
South Dakota	32.00	43.00	48.45	45.00	35.20	43.00	42.00	45.25	35.25	45.75	45.75	46.50	33.75
Nebraska	32.30	36.00	42.23	40.60	37.00	40.00	40.00	39.00	36.00	41.00	42.00	40.60	37.75
Kansas	30.50	32.90	33.64	36.00	32.00	33.00	35.00	37.00	33.00	35.00	36.00	36.00	33.50
North Central	31.61	37.04	40.97	40.14	35.51	39.68	39.71	40.04	34.20	40.18	40.72	40.80	35.23
Delaware	.....	35.00	.....	32.60	31.00	33.00	34.00	34.65	31.20	33.25	34.00	32.00	32.50
Maryland	25.50	27.00	30.00	32.40	32.40	34.00	33.00	33.25	32.00	33.25	34.50	34.50	34.25
Virginia	24.50	26.00	28.46	30.60	28.00	30.00	30.00	30.00	30.00	29.00	32.00	30.00	28.50
West Virginia	33.50	36.00	34.80	40.00	36.00	36.00	42.50	36.50	33.00	37.25	36.75	36.50	32.25
North Carolina	22.00	25.70	27.29	28.00	27.00	27.20	30.00	29.00	29.00	28.00	28.00	29.00	28.00
South Carolina	16.00	16.00	19.60	20.00	20.00	21.00	20.00	20.00	20.00	20.00	21.00	21.25	20.00
Georgia	14.70	16.25	18.84	16.60	17.50	18.80	19.90	19.20	18.50	20.00	20.75	20.50	19.70
Florida	21.00	21.00	21.83	24.00	23.60	22.00	25.00	24.00	23.00	25.00	26.00	26.00	28.50
South Atlantic	20.23	22.07	24.14	24.68	24.09	25.04	26.28	25.46	24.89	25.39	26.38	26.20	25.17
Kentucky	25.50	25.50	28.48	31.20	27.00	28.50	28.50	28.25	26.00	27.00	28.00	27.25	25.75
Tennessee	21.50	23.00	25.13	26.00	23.60	25.00	25.60	25.00	24.00	24.25	25.25	25.50	24.25
Alabama	17.00	18.50	19.49	21.00	20.00	21.00	22.00	22.00	21.00	22.00	22.75	26.00	21.25
Mississippi	18.10	19.50	20.73	20.00	20.75	20.80	22.50	21.85	21.00	21.75	22.00	22.00	22.00
Arkansas	20.20	21.90	24.98	23.80	22.40	23.50	24.00	23.21	22.00	24.75	25.00	25.00	24.25
Louisiana	19.90	19.00	20.85	21.20	23.30	22.40	22.00	23.75	21.80	22.25	22.75	23.00	23.60
Oklahoma	23.90	27.00	25.71	27.60	25.20	25.00	28.00	30.00	26.00	27.00	30.25	29.50	27.50
Texas	23.75	24.30	27.35	28.00	26.60	27.00	30.00	31.00	27.00	27.00	28.00	29.00	25.50
South Central	21.48	22.52	24.49	25.26	23.78	24.52	25.85	26.24	24.01	24.79	25.75	26.32	24.27
Montana	37.50	46.50	47.56	54.00	47.00	47.00	49.00	51.80	42.00	48.00	50.00	56.50	42.75
Idaho	42.00	43.00	53.12	56.00	46.70	51.00	51.00	51.00	46.00	51.00	54.25	54.50	44.75
Wyoming	36.00	41.00	47.50	50.00	42.00	42.00	45.00	48.00	42.00	38.00	45.00	47.00	42.00
Colorado	32.40	33.50	39.72	40.60	33.25	37.00	41.00	40.80	37.00	38.00	39.25	40.00	36.75
New Mexico	31.90	33.50	31.33	36.00	32.00	33.00	33.00	36.00	34.00	32.00	33.00	33.00	32.00
Arizona	45.00	50.00	.....	45.00	50.00	42.60	47.20	50.00	44.30	45.75	54.50	44.50	49.00
Utah	41.50	40.00	40.00	54.00	51.40	51.00	51.00	52.00	51.00	51.25	56.00	56.50	51.50
Nevada	50.00	.....	45.00	61.00	52.20	58.00	59.00	55.00	51.00	54.00	47.00	55.50	54.00
Washington	43.40	45.00	52.00	60.60	46.40	49.50	48.00	47.70	43.00	49.50	51.25	52.00	42.75
Oregon	39.50	43.00	58.75	55.00	46.00	48.00	48.00	46.00	39.00	53.00	44.75	45.00	42.25
California	51.50	55.00	70.96	62.00	58.00	58.00	57.00	57.00	55.00	57.00	63.00	60.00	58.00
Western	43.55	46.43	56.11	54.66	48.77	49.66	50.00	50.40	46.64	49.85	52.92	52.02	48.05
United States	27.87	30.90	34.64	34.56	31.55	33.57	34.34	34.38	31.07	33.86	34.94	34.91	31.82

TABLE 685.—*Wages: Male farm labor, by States, quarterly, 1923–1926*—Contd.

PER MONTH, WITHOUT BOARD

State and division	1923				1924 [1]				1925 [1]				1926
	Jan.	Apr.	July	Oct. [1]	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	Oct.	Jan.
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
Maine	54.00	53.00	66.00	67.00	62.00	61.00	65.00	62.00	58.00	55.00	60.00	63.00	63.00
New Hampshire	60.00	55.00	85.00	74.00	70.00	72.00	73.00	71.00	65.00	70.00	74.00	71.00	71.50
Vermont	47.00	55.00	62.00	59.00	62.00	64.00	64.00	66.00	62.00	65.00	69.00	66.00	61.00
Massachusetts	62.00	77.00	77.50	78.00	82.00	81.00	80.00	79.00	79.00	80.00	77.00	78.00	74.50
Rhode Island	65.00	75.00	.....	77.00	75.00	72.00	77.00	77.00	73.00	72.00	76.00	72.00	81.00
Connecticut	61.00	70.00	81.67	76.00	74.00	75.00	77.00	76.00	73.00	80.00	75.00	76.00	80.00
New York	54.00	64.00	77.95	66.00	61.00	69.00	67.50	67.50	61.50	68.25	69.50	69.00	64.50
New Jersey	59.00	63.00	76.86	74.00	70.00	71.00	72.00	70.00	65.00	71.00	74.00	72.00	72.00
Pennsylvania	52.00	55.00	56.76	62.00	58.00	59.00	58.35	58.90	56.95	58.50	59.00	58.50	58.50
North Atlantic	54.74	61.32	70.63	67.00	63.66	66.91	66.64	66.36	62.42	66.30	67.34	66.88	65.09
Ohio	45.00	48.00	53.47	55.00	52.00	52.00	52.00	52.00	49.00	53.00	52.00	53.00	52.00
Indiana	45.00	47.50	50.92	50.10	48.00	50.00	48.00	48.00	47.00	48.00	47.00	48.00	47.00
Illinois	45.00	50.00	54.88	53.00	50.00	56.00	55.00	53.00	52.00	56.00	56.00	55.00	52.50
Michigan	44.50	53.50	58.34	61.00	56.50	58.60	57.00	57.00	54.00	53.00	56.00	58.00	54.00
Wisconsin	51.00	62.50	66.27	63.50	55.00	61.10	62.50	62.00	50.00	59.00	60.50	64.00	58.00
Minnesota	44.00	51.00	62.78	59.00	50.00	55.00	53.00	60.00	47.00	57.00	60.00	61.00	49.75
Iowa	49.00	55.50	58.98	57.00	51.30	57.30	57.15	56.20	50.00	58.25	57.50	57.00	51.00
Missouri	37.90	41.50	44.12	43.00	42.00	42.00	43.00	43.00	41.00	42.00	[illegible].00	43.00	42.00
North Dakota	43.00	53.00	59.92	62.30	48.30	55.80	59.00	60.00	50.00	55.00	60.00	68.50	46.25
South Dakota	49.50	62.50	67.14	63.00	51.30	60.00	59.00	68.50	45.25	62.50	62.00	61.50	52.25
Nebraska	48.50	53.50	61.08	54.00	52.00	54.00	52.00	53.00	46.00	55.00	55.00	54.50	53.75
Kansas	44.60	48.00	49.68	51.00	47.00	48.00	50.00	51.00	47.00	49.00	51.00	50.00	48.50
North Central	45.27	51.34	56.37	55.06	50.10	53.69	53.39	54.60	48.26	53.48	54.30	55.10	50.54
Delaware	.....	55.00	.....	50.70	46.00	50.80	53.00	51.60	47.35	51.75	49.00	48.00	50.50
Maryland	39.00	43.50	43.33	48.40	48.00	49.80	49.90	49.90	47.00	49.25	49.75	50.75	51.00
Virginia	35.10	37.20	39.72	43.00	40.00	41.00	41.60	42.00	40.00	40.00	44.00	42.00	40.50
West Virginia	48.00	52.50	47.50	55.00	52.50	52.00	52.00	53.25	48.00	48.75	53.00	52.25	48.75
North Carolina	32.00	37.00	37.67	37.00	37.00	38.50	42.00	42.00	39.00	40.00	40.00	40.00	40.00
South Carolina	22.50	22.80	27.46	26.00	26.00	28.00	29.00	30.00	30.00	28.00	30.00	30.00	28.00
Georgia	21.70	24.00	26.51	24.80	26.40	26.30	27.25	27.50	26.60	28.50	29.00	28.75	27.75
Florida	34.50	34.00	37.00	36.70	38.00	34.00	37.00	38.00	38.00	39.00	39.00	38.00	44.00
South Atlantic	29.62	32.32	34.12	34.72	34.52	35.21	36.56	37.08	35.37	36.03	37.41	36.84	36.32
Kentucky	35.40	36.50	39.99	42.00	38.50	41.00	39.50	39.50	37.00	36.75	39.00	38.25	37.50
Tennessee	30.50	32.60	35.70	36.00	32.60	34.50	35.00	35.00	33.00	33.25	34.25	35.25	32.70
Alabama	25.50	26.50	27.59	31.00	29.00	30.00	32.00	30.00	29.00	30.00	31.75	34.00	30.50
Mississippi	25.50	28.00	29.06	29.50	30.25	30.00	31.50	31.00	30.50	30.75	30.75	32.00	31.00
Arkansas	29.80	32.10	33.61	34.25	32.00	34.00	35.00	34.44	32.50	37.00	36.00	35.00	34.75
Louisiana	29.00	28.50	32.46	34.55	37.80	31.73	33.25	33.50	33.50	33.75	34.00	34.75	35.00
Oklahoma	36.00	41.70	37.45	40.35	38.00	37.00	38.00	42.00	43.00	39.00	41.75	42.00	40.25
Texas	34.25	36.00	39.22	40.00	38.00	40.00	44.00	44.00	40.00	40.00	41.00	42.00	38.00
South Central	31.06	32.97	34.91	36.38	34.75	35.43	37.04	37.05	35.25	35.55	36.56	37.25	35.16
Montana	52.50	64.00	71.67	75.00	68.00	68.00	68.00	72.40	64.00	68.00	69.00	76.25	64.25
Idaho	60.20	65.00	75.71	77.00	65.80	72.00	69.00	72.00	65.00	73.00	74.00	76.00	62.00
Wyoming	60.00	68.00	70.00	75.00	67.00	65.00	69.00	62.00	67.00	64.00	64.00	69.00	62.00
Colorado	50.50	54.00	59.25	60.60	56.50	58.00	61.00	60.30	55.00	58.50	59.25	59.00	54.45
New Mexico	47.00	48.50	44.17	56.00	48.00	47.00	50.00	50.00	51.00	45.00	48.00	49.00	47.50
Arizona	70.00	75.00	.....	65.00	65.00	66.00	65.50	66.20	66.15	68.25	65.50	73.50	71.00
Utah	59.50	55.00	60.00	71.00	71.40	72.00	73.00	73.00	68.40	69.50	75.00	76.50	70.75
Nevada	65.00	.....	75.00	80.00	63.75	90.00	86.00	75.00	75.00	82.25	72.00	71.75	73.00
Washington	65.00	68.00	77.00	82.70	68.70	72.40	68.90	68.50	67.60	74.50	76.50	76.00	70.50
Oregon	52.50	60.00	84.50	71.00	68.00	72.00	65.00	64.00	58.60	60.00	57.50	65.00	60.50
California	76.50	80.00	93.33	87.00	83.00	82.00	83.00	83.00	82.00	83.00	88.00	87.00	85.00
Western	64.19	67.46	78.08	76.45	70.83	71.99	71.83	71.91	69.29	71.42	73.74	75.19	70.63
United States	40.50	44.41	48.61	48.42	45.53	47.38	48.02	48.46	45.04	47.40	48.55	48.99	46.26

Division of Crop and Livestock Estimates. Wages reported being paid about 1st of month.

TABLE 686.—*Farm labor: Supply and demand, 1918–1925*

Division	Farm labor supply, per cent of normal							
	1918	1919	1920	1921	1922	1923	1924	1925
North Atlantic	62.9	84.2	62.4	92.0	99.3	73.5	79.9	87.0
North Central	74.5	86.2	73.4	96.0	101.4	83.1	85.9	92.8
South Atlantic	73.8	81.9	72.8	94.4	97.3	82.5	77.1	83.0
South Central	74.2	83.2	72.7	94.7	97.5	87.3	83.8	89.5
Far Western	76.9	90.4	82.4	102.6	107.4	92.0	97.4	100.0
United States	73.4	84.6	72.9	95.5	99.7	84.2	84.1	90.0

Division	Farm labor demand, per cent of normal							
	1918	1919	1920	1921	1922	1923	1924	1925
North Atlantic	9.88	101.1	107.4	92.8	94.8	95.3	90.2	88.8
North Central	99.6	101.2	105.2	90.3	90.2	95.6	89.5	92.1
South Atlantic	104.5	103.9	107.6	86.2	88.0	94.1	92.5	91.1
South Central	102.7	100.8	103.8	83.0	85.9	90.6	91.2	89.4
Far Western	99.6	102.6	102.8	88.6	89.8	94.0	88.5	89.0
United States	101.4	101.7	105.2	87.3	88.8	93.6	90.6	90.4

Division	Supply as a percentage of demand							
	1918	1919	1920	1921	1922	1923	1924	1925
North Atlantic	63.6	83.3	58.1	99.1	104.7	77.1	88.6	97.9
North Central	74.8	85.2	69.8	106.3	112.3	87.0	95.9	100.7
South Atlantic	70.6	78.8	67.7	109.5	110.6	87.7	83.4	91.2
South Central	72.2	82.5	70.0	114.1	113.5	93.0	91.9	100.1
Far Western	77.3	88.1	80.1	115.8	119.6	97.9	110.0	112.4
United States	72.3	83.2	69.3	109.4	112.3	90.0	92.8	99.5

Division of Crop and Livestock Estimates. Based upon reports of crop reporters of April 1.

TABLE 687.—*Family living from the farm, 1918–1922*

Year and locality	Number of farms	Quantities and value of foods: Corn		Wheat		Potatoes [1]		Sirup		Fruit and vegetables	Butter		Milk		Beef, dressed		Pork, dressed		Poultry		Eggs		Other food	Total	Quantity and value of wood		Value of house rent	Total, all items	Adult units	Value per adult unit
1918		Bu.		Bu.		Bu.		Gal.			Lbs.		Gal.		Lbs.		Lbs.		No.		Doz.				Cords				No.	
New Hampshire, Hillsboro County	136			1	$3	25	$41	2	$3	$61	37	$21	976	$68	4	$1	182	$36	19	$32	73	$33		$299	12	$78	$156	$533	3.5	$152
Virginia, Frederick County	125	3	$5	12	27	12	13				60	32	143	35	7	1	835	153	29	22	59	21	$1	370	7	18	168	556	4.2	132
North Carolina, Catawba County [2]	304	13	19	35	81	27	31	12	9	52	90	31	289	57	24	5	548	123	33	25	64	20	5	458	11	26	89	573	5.2	110
Georgia, Sumter County:																														
White [2]	336	16	28	16	37	30	30	22	24	44	91	33	264	47	5	1	895	172	53	28	80	24	1	469	16	42	179	690	4.5	153
Colored [2]	214	28	49	8	18	29	29	24	25	29	65	20	204	35	9	2	734	139	26	13	44	13	2	374	13	38	59	471	5.9	80
Florida, Hillsboro County	100					17	25	26	21	39	70	34	276	41			469	92	28	19	82	30		301	5	18	113	432	4.5	96
Ohio, Washington County [2]	47			21	43	20	40			59	145	65	237	71	35	6	425	78	22	17	77	31		410	12	18	83	511	3.8	134
Indiana, Clinton County [2]	100	1	2	6	13	10	12	3	5	43	106	42	166	42	18	4	711	158	45	33	110	32		386	3	16	91	493	4.1	122
Iowa:																														
Tama County [2]	209					23	26	1	1	32	158	63	249	62	62	16	665	133	36	28	157	47	1	412	5	14	228	654	4.2	156
Warren County [2]	183	1	2			11	14	2	1	37	135	54	262	66	26	7	524	105	48	37	145	43		366	7	19	144	529	4.1	129
Total and averages	1,754	9	15	12	27	23	27	11	11	44	96	37	300	52	19	5	642	128	37	26	88	28	2	402	10	30	137	569	4.6	124
1919																														
New York, Niagara County [3]	157			4	11	28	52			66	143	68	145	46	12	2	273	53	14	22	83	38		358	14	40	160	558	(4)	(4)
Virginia, Frederick County	125	2	3	10	24	10	17			68	85	40	160	39	5	1	760	137	31	26	66	26	3	384	7	17	170	571	4.2	136
Florida:																														
Hillsboro County	100	1	1			19	29	27	30	49	74	41	223	44	3	1	531	106	26	21	75	30		352	4	19	128	499	4.3	116
Polk County	100					1	1	1	1	26	16	9	53	10			58	12	13	11	33	13		83	1	4	143	230	2.0	115
Mississippi, Jones County [3]	154	14	25			49	42	43	50	87	156	73	341	92			528	106	21	11	62	27	2	515	7	27	85	627	5.2	121
Ohio, Washington County [2]	51	1	1	23	47	20	40	1	2	63	145	65	244	69	64	13	386	73	21	16	58	23	3	415	12	20	90	525	3.9	136
Indiana, Clinton County [2]	100			7	14	3	8	1	3	41	94	37	155	39	38	6	215	43	40	22	109	44	1	342			174	516	3.9	132
Idaho, Twin Falls County [2]	200					8	8			78	108	60	266	80	38	6													
Idaho and Washington, Palouse County [2]	226					14	20			63	131	74	276	62	37	11	607	109	37	23	130	46	1	409	1	2	197	608	4.2	145
Total and averages	1,213	2	4	3	7	18	24	8	9	63	111	56	220	57	21	4	453	85	29	21	87	34	1	365	5	15	151	531	4.0	152
1920																														
Rhode Island [3]	51	3	3			17	17			59	16	8	303	127			106	19	26	26	80	54		313	1	2	186	501	2.3	216
Virginia, Frederick County	125	1	1	9	17	10	11			44	75	37	162	36	6	1	821	115	25	23	65	26	1	312	6	10	191	513	4.1	125
Florida, Hillsboro County	100					17	34	25	31	52	60	36	254	64			487	88	23	21	67	33		359	4	20	141	520	4.2	124
Ohio, Washington County [2]	59			11	16	11	11			48	114	40	209	59	66	9	394	61	13	11	73	27		282	5	8	89	379	3.8	100
Wisconsin, Walworth County [2]	262			4	6	21	19			23			273	39	39	4	245	27	18	18	94	36		172			276	448	3.9	115

Idaho, Twin Falls County [2]	192					10	6			81	122	69	248	75	60	3	270	51	36	22	136	58	2	372			208	580	4.0	145
Idaho and Washington, Palouse County [2]	241					15	12			49	115	69	297	74	76	12	650	91	31	23	134	51	1	382	1	1	190	573	3.0	159
Oregon, Sherman County [2]	144									37	113	67	291	113	28	5	479	71	20	14	204	100	1	408			236	644	3.8	169
Total and averages	1,174			3	4	13	13	2	3	47	77	43	264	68	42	6	446	65	25	20	115	49	1	319	1	4	208	531	3.8	140
1921																														
Vermont, Orange and Windsor Counties [2]	211					34	33	8	15	42	33	15	277	58	74	7	175	19	12	13	76	30	1	233	12	96	135	464	3.8	122
Rhode Island [3]	84	1	2			17	26			85	25	12	365	131	7	1	141	14	22	40	99	56		367	2	15	284	666	(4)	(4)
Florida, Hillsboro County [2]	100					17	21	23	12	49	62	31	291	73			428	47	25	20	81	33		286	4	17	148	451	4.3	105
Ohio, Washington County [2]	60			21	24	18	36			52	122	38	222	55	60	7	443	41	22	16	74	22	2	293	7	11	95	399	4.0	100
Iowa:																														
Tama County [3]	237									61	165	58	336	51	175	10	599	46	33	32	162	33		291			351	642	4.6	140
Warren County [3]	229									61	142	50	464	69	103	6	606	43	39	35	174	35		299			246	545	3.7	147
South Dakota, Jones County [3]	61										184	63	374	132	450	18	605	36	35	24	166	42		315	10	28	102	445	4.0	11
Montana, Sheridan and Daniels Counties [2]	62					19	9			28	148	38	206	43	133	16	239	29	27	16	107	22		201			112	313	3.4	92
Colorado, Weld County [3]	150					25	14			24	131	42	353	66	7	1	348	35	49	33	197	46		261			244	565	4.8	105
Idaho, Twin Falls County [2]	181					13	7			84	138	41	310	62	56	8	266	33	40	21	151	39	2	297			237	534	3.9	137
Idaho and Washington, Palouse County [2]	250					8	6			48	114	40	338	60	67	7	610	61	28	14	152	46	1	283	1	2	195	480	3.9	123
Washington:																														
King and Pierce Counties [2]	150					27	16			37	58	23	219	29	22	2	103	16	31	11	110	39		173	8	17	126	316	3.4	93
Yakima County [2]	175					22	11			39	115	39	321	50	60	5	302	30	31	17	138	34	1	226			162	388	4.0	97
Oregon, Sherman County [2]	152									41	120	49	308	77	64	6	540	54	22	17	214	63	1	308			240	548	3.8	144
Total and averages	2,102			1	1	14	11	2	2	49	112	39	325	64	82	6	406	38	30	22	143	39	1	272	3	14	208	494	4.0	130
1922																														
Delaware, Sussex County [2]	86	1	1	17	17	18	8			38	72	20	115	17			715	87	47	40	83	20		248	4	23	148	419	3.6	116
Florida:																														
Hillsboro County [2]	100					13	16	21	12	40	60	30	277	56	3	1	319	42	27	22	93	28		247	4	16	157	420	4.4	96
Polk County [2]	100										17	8	52	10			36	5	8	7	30	9		39	1	2	222	263	2.3	114
Ohio, Washington County [2]	64			18	19	19	19			58	120	36	238	47	95	9	398	42	23	14	81	20		264	9	18	95	377	4.1	92
Iowa:																														
Calhoun County [3]	202					22	15			35	152	53	301	45	64	9	527	53	36	27	155	31		208			252	520	4.0	130
Humboldt County [3]	74					33	25			40	184	64	345	52	90	12	347	35	36	26	143	29		283			404	687	4.4	156
South Dakota, Jones County [3]	66										178	61	262	110	299	16	567	43	28	21	148	37		288	3	13	91	392	3.8	103
Kansas:																														
Finney County	57					5	6			31	107	39	359	69	113	12	533	58	69	39	200	38	1	293			204	497	4.1	121
Thomas and Sherman Counties [2]	82			2	2	15	13			44	118	43	389	80	171	18	513	57	75	43	194	39		339			328	667	4.0	167
Montana:																														
Sheridan and Daniels Counties [2]	61			4	3	10	5			31	145	37	205	40	181	19	267	32	23	14	108	22		203			114	317	3.4	93
Dawson and Custer Counties [2]	66					19	7			44	124	39	230	46	138	14	273	27	35	19	184	38		234			119	353	3.4	104

[1] In some localities potatoes were included with fruits and vegetables.
[2] In cooperation with the State college or agricultural experiment station.
[3] By courtesy of State college or agricultural experiment station.
[4] Data not available.

TABLE 687.—*Family living from the farm, 1918–1922*—Continued

Year and locality	Number of farms	Quantities and value of foods																														Quantity and value of wood		Value of house rent	Total, all items	Adult units	Value per adult unit
		Corn		Wheat		Potatoes [1]		Sirup		Fruit and vegetables	Butter		Milk		Beef, dressed		Pork, dressed		Poultry		Eggs		Other food		Total													
		Bu.		*Bu.*		*Bu.*		*Gal.*			*Lbs.*		*Gal.*		*Lbs.*		*Lbs.*		*No.*		*Doz.*												*Cords*				*No.*	
Colorado, Washington and Lincoln Counties [2]	159			1	1	11	7			39	124	40	348	65	202	21	453	50	69	35	211	45			303										237	540	4.3	126
Idaho, Twin Falls County [2]	87					2	1			78	96	35	268	65	102	8	200	21	38	24	128	32	1		265										242	507	3.8	133
Washington, Yakima County [2]	139									39	116	44	355	71	47	5	256	26	33	17	172	41	1		244										181	425	3.8	112
Oregon, Sherman County [2]	152									36	115	39	316	76	102	8	433	45	46	25	180	45	1		275										238	513	3.8	135
Total and averages	1,495			2	2	11	8	1	1	37	115	40	279	56	100	10	394	42	40	25	146	33			254									1	4	212	470	3.8	121
Grand total and averages	7,738	2	4	4	9	16	16	5	5	48	103	42	284	59	56	6	471	71	33	23	118	36	1		320									4	14	184	518	4.1	130

Division of Farm Management and Costs. Data from 30 farming localities in 21 States.

[2] In cooperation with the State college or agricultural experiment station.

TABLE 688.—*Clothing: Average expenditure per person for one year by sex and age; 1,337 farm families*

Sex and age group	Persons	Average expenditure for clothing							Percentage of total expenditures						Relative cost (average for husband =100)
		Head-wear	Outer gar-ments	Under gar-ments	Foot-wear	Acces-sories	Upkeep and repair	Total	Head-wear	Outer gar-ments	Under gar-ments	Foot-wear	Acces-sories	Upkeep and repair	
	Number	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Husbands	1,252	3.12	29.80	4.41	14.98	3.51	0.94	56.76	5.5	52.5	7.8	26.4	6.2	1.7	100
Sons:															
Over 24 years	100	4.66	42.17	4.63	15.99	5.47	1.04	73.96	6.3	57.0	6.3	21.6	7.4	1.4	130
19–24 years	165	5.37	52.13	4.89	18.67	6.08	1.86	89.00	6.0	58.6	5.5	21.0	6.8	2.1	157
15–18 years	250	3.49	41.90	4.11	16.79	4.37	1.12	71.78	4.9	58.3	5.7	23.4	6.1	1.6	126
12–14 years	176	2.02	24.26	3.04	14.26	1.85	.75	46.18	4.4	52.5	6.6	30.9	4.0	1.6	81
6–11 years	344	1.82	18.01	2.84	11.55	1.24	.57	36.03	5.0	50.0	7.9	32.1	3.4	1.6	63
1–5 years	225	.98	8.09	2.08	6.48	.48	.11	18.22	5.4	44.4	11.4	35.6	2.6	.6	32
Wives	1,270	4.19	32.92	7.33	13.94	1.58	1.85	61.81	6.8	53.3	11.8	22.6	2.5	3.0	109
Daughters:															
Over 24 years	85	7.40	52.83	7.13	18.04	1.62	1.82	88.84	8.3	59.5	8.0	20.3	1.8	2.1	157
19–24 years	117	8.03	59.36	9.71	21.97	2.67	1.62	103.36	7.8	57.4	9.4	21.2	2.6	1.6	182
15–18 years	202	5.05	44.74	7.48	20.76	2.03	2.00	82.06	6.2	54.5	9.1	25.3	2.5	2.4	145
12–14 years	195	2.95	24.54	5.47	16.30	1.84	1.13	52.23	5.6	47.0	10.5	31.2	3.5	2.2	92
6–11 years	373	1.57	13.95	3.95	10.88	1.05	.66	32.05	4.9	43.5	12.3	33.9	3.3	2.1	56
1–5 years	227	.75	7.70	2.36	6.28	.45	.30	17.84	4.2	43.2	13.2	35.2	2.5	1.7	31
Sons and daughters below 1 year	24	.30	4.89	1.60	1.68	2.14	-------	10.61	2.8	46.1	15.1	15.8	20.2	-------	19

Division of Economics, Bureau of Home Economics, and Division of Farm Population and Rural Life, Bureau of Agricultural Economics.
Compiled from cost of living studies of 1,337 farm families in selected localities in Ohio, Kentucky, Missouri, and Kansas, 1922–23, made in cooperation with Ohio Wesleyan University, University of Kentucky, University of Missouri, Kansas State Agricultural College, and the Farmer's Wife, St. Paul, Minn.

MISCELLANEOUS AGRICULTURAL STATISTICS

CROP SUMMARY

TABLE 689.—*Acreage, production, and farm value, 1924 and 1925*

Crop and year	Acreage	Production			Farm value Dec. 1 [1]	
		Unit	Per acre	Total	Per unit	Total
					Dollars	*Dollars*
Corn 1924	101,076,000	Bushel	22.9	2,312,745,000	.982	2,270,564,000
1925	101,631,000	do	28.5	2,900,581,000	.674	1,956,326,000
Winter wheat 1924	35,489,000	do	16.6	589,632,000	1.316	776,227,000
1925	31,269,000	do	12.7	398,486,000	1.479	589,504,000
Spring wheat 1924	16,875,000	do	16.2	272,995,000	1.262	344,560,000
1925	20,931,000	do	12.9	270,879,000	1.323	358,289,000
All wheat 1924	52,364,000	do	16.5	862,627,000	1.299	1,120,787,000
1925	52,200,000	do	12.8	669,365,000	1.416	947,963,000
Oats 1924	42,756,000	do	35.6	1,522,665,000	.478	727,171,000
1925	45,160,000	do	33.3	1,501,909,000	.381	571,798,000
Barley 1924	6,858,000	do	26.0	178,322,000	.789	140,704,000
1925	8,243,000	do	26.4	218,002,000	.583	127,078,000
Rye 1924	4,019,000	do	15.9	64,038,000	1.066	68,260,000
1925	4,088,000	do	11.9	48,696,000	.781	38,028,000
Buckwheat 1924	738,000	do	18.0	13,277,000	1.030	13,678,000
1925	776,000	do	18.9	14,647,000	.892	13,058,000
Flaxseed 1924	3,469,000	do	9.2	31,711,000	2.273	72,094,000
1925	3,012,000	do	7.3	22,007,000	2.265	49,842,000
Rice 1924	849,000	do	39.2	33,249,000	1.382	45,956,000
1925	904,000	do	37.6	33,959,000	1.539	52,246,000
Grain sorghums [2] 1924	3,813,000	do	21.1	80,443,000	.852	68,501,000
1925	4,120,000	do	17.2	71,050,000	.757	53,801,000
Cotton lint 1924	41,360,000	Bale	[3] 157.4	13,628,000	[3] .226	1,540,884,000
1925	45,945,000	do	[3] 162.3	15,603,000	[3] .182	1,419,888,000
Cottonseed 1924		Ton		6,051,000	[4] 33.57	203,132,000
1925		do		6,928,000	[4] 27.64	191,490,000
Hay, tame 1924	61,451,000	do	1.60	98,086,000	13.76	1,349,528,000
1925	59,398,000	do	1.46	86,474,000	13.99	1,209,496,000
Hay, wild 1924	15,080,000	do	.98	14,731,000	7.83	115,365,000
1925	14,746,000	do	.88	13,049,000	8.46	110,334,000
All hay 1924	76,531,000	do	1.47	112,817,000	12.98	1,464,893,000
1925	74,144,000	do	1.34	99,523,000	13.26	1,319,830,000
Clover seed [2] 1924	809,000	Bushel	1.1	927,000	14.51	13,455,000
1925	789,000	do	1.3	1,029,000	14.86	15,288,000
Beans, dry, edible [2] 1924	1,545,000	do	9.6	14,856,000	3.72	55,239,000
1925	1,579,000	do	12.1	19,100,000	3.27	62,388,000
Peanuts 1924	1,207,000	Pound	620.5	748,925,000	.046	34,481,000
1925	982,000	do	706.8	694,075,000	.036	25,225,000
Potatoes, white 1924	3,348,000	Bushel	127.0	425,283,000	.626	266,047,000
1925	3,113,000	do	103.8	323,243,000	1.872	605,327,000
Sweet potatoes 1924	691,000	do	79.0	54,564,000	1.292	70,500,000
1925	778,000	do	80.3	62,494,000	1.369	85,554,000
Tobacco 1924	1,706,000	Pound	728.3	1,242,456,000	.207	256,834,000
1925	1,747,000	do	772.6	1,349,660,000	.183	247,413,000
Sugar cane (La.) 1924	301,000	Ton	7.6	2,288,000		
1925	294,000	do	16.5	4,851,000		
Cane sugar (La.) 1924	163,000	do	.54	88,000		
1925	221,000	do	.89	196,000		
Cane sirup 1924	145,000	Gallon	141.8	20,558,000	1.020	20,964,000
1925	122,000	do	158.9	19,390,000	.991	19,210,000
Sugar beets [5] 1924	817,000	Ton	8.66	7,075,000		
1925	667,000	do	10.39	6,932,000		
Beet sugar [5] 1924	817,000	do	1.33	1,090,000		
1925	667,000	do	1.34	895,000		
Sorghum sirup 1924	385,000	Gallon	68.3	26,284,000	.944	24,821,000
1925	377,000	do	67.6	25,492,000	.948	24,168,000
Maple sugar and sirup as sugar 1924	[6] 15,407,000	Pound	[6] 2.29	35,302,000		
1925	[6] 15,313,000	do	[6] 1.82	27,946,000		
Broomcorn [2] 1924	451,000	Ton	[3] 346.8	78,200	95.63	7,478,000
1925	200,000	do	[3] 289.0	28,900	140.17	4,051,000
Hops [2] 1924	20,350	Pound	1,360	27,670,000	.103	2,863,000
1925	20,350	do	1,404	28,573,000	.218	6,232,000

[1] See detailed crop tables for date to which prices refer.
[2] Principal producing States.
[3] Pounds or per pound.
[4] Price per ton is of Nov. 15.
[5] Including beets grown in Canada for factories in the United States.
[6] Trees tapped or per tree.

TABLE 689.—*Acreage, production, and farm value, 1924 and 1925*—Continued

Crop and year	Acreage	Production			Farm value Dec. 1	
		Unit	Per acre	Total	Per unit	Total
FRUIT CROPS					*Dols.*	*Dols.*
Apples, total 1924		Bushel		171, 250, 000	1. 181	202, 326, 000
1925		do		164, 616, 000	1. 262	207, 820, 000
Apples, commercial 1924		Barrel		28, 063, 000	3. 66	102, 828, 000
1925		do		31, 909, 000	3. 68	117, 284, 000
Peaches 1924		Bushel		54, 119, 000	1. 269	68, 679, 000
1925		do		46, 565, 000	1. 398	65, 086, 000
Pears 1924		do		18, 868, 000	1. 415	26, 693, 000
1925		do		19, 820, 000	1. 410	27, 944, 000
Grapes 1924		Ton		1, 763, 742	41. 52	73, 228, 000
1925		do		1, 967, 160	34. 04	66, 969, 000
Oranges (2 States) 1924		Box		32, 200, 000	1. 771	57, 045, 000
1925		do		34, 500, 000	3. 116	107, 505, 000
Cranberries [2] 1924		Barrel		562, 000	9. 86	5, 544, 000
1925		do		530, 000	9. 88	5, 238, 000
COMMERCIAL TRUCK CROPS						
Asparagus 1924	48, 300	Crate	129	6, 241, 000	1. 88	11, 750, 000
1925	56, 380	do	114	6, 442, 000	1. 74	11, 222, 000
Beans, snap 1924	85, 000	Ton	1. 3	113, 564	120. 62	13, 698, 000
1925	94, 640	do	1. 4	136, 812	110. 85	15, 166, 000
Cabbage 1924	108, 670	do	8. 8	961, 700	17. 00	16, 349, 000
1925	107, 890	do	8. 1	869. 200	20. 20	17, 560, 000
Cantaloupes 1924	90, 510	Crate	148	13, 432, 000	1. 48	19, 865, 000
1925	93, 080	do	151	14, 013, 000	1. 32	18, 483, 000
Carrots 1924	12, 220	Bushel	352	4, 302, 000	. 95	4, 068, 000
1925	16, 950	do	279	4, 727, 000	. 63	2, 928, 000
Cauliflower 1924	12, 900	Crate	212	2, 735, 000	1. 18	3, 218, 000
1925	15, 130	do	228	3, 452, 000	1. 18	4, 081, 000
Celery 1924	22, 710	do	297	6, 741, 000	1. 85	12, 493, 000
1925	22, 600	do	299	6, 757, 000	1. 85	12, 491, 000
Corn, sweet 1924	332, 230	Ton	1. 8	589, 500	18. 10	10, 672, 000
1925	403, 150	do	2. 5	993, 000	16. 09	15, 980, 000
Cucumbers 1924	121, 300	Bushel	62	7, 473, 000	1. 49	11, 145, 000
1925	135, 870	do	87	11, 886, 000	1. 21	14, 414, 000
Eggplant 1924	2, 660	do	296	787, 000	1. 57	1, 233, 000
1925	2, 490	do	279	694, 000	1. 57	1, 090, 000
Lettuce 1924	63, 550	Crate	191	12, 161, 000	1. 54	18, 671, 000
1925	86, 400	do	187	16, 171, 000	1. 53	24, 767, 000
Onions 1924	60, 260	Bushel	296	17, 852, 000	. 94	16, 829, 000
1925	56, 950	do	302	17, 173, 000	1. 15	19, 702, 000
Peas, green 1924	247, 960	Ton	1. 1	268, 500	64. 67	17, 364, 000
1925	256, 100	do	. 9	242, 300	68. 04	16, 486, 000
Peppers 1924	10, 960	Bushel	330	3, 613, 000	1. 13	4, 085, 000
1925	12, 330	do	257	3, 172, 000	1. 29	4, 083, 000
Potatoes, early Irish [7] 1924	319, 610	do	131	41, 833, 000	. 99	41, 528, 000
1925	287, 070	do	103	29, 594, 000	1. 41	41, 649, 000
Spinach 1924	34, 340	Ton	3. 1	107, 900	68. 52	7, 392, 000
1925	41, 440	do	2. 4	101, 100	74. 02	7, 483, 000
Strawberries 1924	151, 230	Quart	1, 829	276, 592, 000	. 13	37, 320, 000
1925	134, 000	do	1, 564	209, 586, 000	. 17	36, 105, 000
Tomatoes 1924	433, 080	Ton	3. 7	1, 606, 700	33. 21	53, 352, 000
1925	456, 020	do	4. 8	2, 188, 200	27. 72	60, 656, 000
Watermelons 1924	168, 150	Car	[8] 318	53, 488	172. 00	9, 181, 000
1925	156, 400	do	[8] 325	50, 838	232. 00	11, 802, 000
Total of above 1924	347, 217, 380					9, 182, 501, 000
1925	353, 021, 170					8, 611, 839, 000

Division of Crop and Livestock Estimates.

[2] Principal producing States.
[7] Included in potatoes, white.
[8] Number.

TABLE 690.—*Crop acreages, aggregates, by States, 1924 and 1925*

State	Acreage of 19 crops		Per cent of total acreage in specified crops[1]	Total acreage of all crops (theoretical)		State	Acreage of 19 crops		Per cent of total acreage in specified crops[1]	Total acreage of all crops (theoretical)	
	1924	1925		1924	1925		1924	1925		1924	1925
	1,000 acres	*1,000 acres*	*Per cent*	*1,000 acres*	*1,000 acres*		*1,000 acres*	*1,000 acres*	*Per cent*	*1,000 acres*	*1,000 acres*
Me	1,562	1,581	96	1,627	1,647	N. C	6,763	6,784	94	7,195	7,217
N. H	521	523	94	554	556	S. C	5,038	5,203	92	5,476	5,655
Vt	1,128	1,140	93	1,213	1,226	Ga	8,737	9,070	94	9,295	9,649
Mass	560	561	86	651	652	Fla	890	881	89	1,000	990
R. I	60	61	84	71	73	Ky	5,227	5,322	95	5,502	5,602
Conn	481	486	88	547	552	Tenn	6,266	6,546	91	6,886	7,193
N. Y	7,859	7,836	91	8,636	8,611	Ala	7,083	7,364	93	7,616	7,918
N. J	735	744	86	855	865	Miss	5,777	6,060	96	6,018	6,312
Pa	7,244	7,465	97	7,468	7,696	Ark	6,458	7,022	93	6,944	7,551
Ohio	10,615	10,788	97	10,943	11,122	La	3,711	3,931	91	4,078	4,320
Indiana	10,671	11,026	96	11,116	11,485	Okla	14,065	14,613	93	15,124	15,713
Ill	19,876	20,228	97	20,491	20,854	Tex	26,803	25,563	92	29,134	27,786
Mich	8,420	8,424	93	9,054	9,058	Mont	6,530	6,754	87	7,506	7,763
Wis	9,452	9,503	90	10,502	10,559	Idaho	2,472	2,573	91	2,716	2,827
Minn	17,983	18,526	96	18,732	19,298	Wyo	1,564	1,622	90	1,738	1,802
Iowa	21,180	21,409	97	21,835	22,071	Colo	5,526	5,441	85	6,501	6,401
Mo	14,038	14,595	96	14,623	15,203	N. Mex	1,166	835	78	1,495	1,071
N. Dak	20,259	20,662	96	21,103	21,523	Ariz	475	465	85	559	547
S. Dak	15,808	16,171	98	16,131	16,501	Utah	922	1,002	88	1,048	1,139
Nebr	19,735	19,672	97	20,345	20,280	Nev	360	428	98	367	437
Kans	21,560	21,241	93	23,183	22,840	Wash	3,198	3,489	86	3,719	4,057
Del	359	365	89	403	410	Oreg	2,434	2,597	80	3,042	3,246
Md	1,641	1,692	91	1,803	1,859	Calif.[2]	3,892	4,466	75	5,189	5,955
Va	4,060	4,198	93	4,366	4,514						
W. Va	1,648	1,729	95	1,735	1,820	U. S	342,812	348,657	93.8	366,135	372,426

Division of Crop and Livestock Estimates. Estimated total acreage of 19 crops—corn, wheat, oats, barley, rye, buckwheat, potatoes, sweet potatoes, tobacco, flax, rice, all hay, cotton, peanuts, kafirs, beans, broomcorn, hops, and cranberries.

[1] Based on census proportions in 1919.
[2] Not including cotton grown in Lower California, Mexico.

TABLE 691.—*Index numbers of the mass of crop production*

[Average of 1910–1914=100]

Year and period	Production index		Year and period	Production index	
	Total	Per capita		Total	Per capita
1909	94	99	1921	100	88
1910	97	101	1922	110	96
1911	91	92	1923	110	94
1912	110	109	1924	111	94
1913	95	95	1925	112	94
1914	107	104			
1915	116	109	1905–1909	94.0	102.8
1916	100	93	1910–1914	100.0	100.0
1917	108	100	1915–1919	108.0	99.6
1918	107	98	1920–1924	109.6	95.2
1919	108	98	1921–1925	108.6	93.2
1920	117	104			

Division of Crop and Livestock Estimates. Production of wheat, corn, oats, barley, rye, buckwheat, potatoes, hay, tobacco, and cotton, each crop each year multiplied by constant price and divided by average aggregate of base years.

TABLE 692.—*Crops: Index numbers of all crop yields, 1913–1925*

State and division	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Maine	101.6	118.4	86.8	116.2	99.7	99.6	105.0	89.6	95.4	84.0	120.8	121.8	111.8
New Hampshire	89.2	113.8	84.5	121.8	110.3	105.7	104.7	104.2	93.8	104.5	107.8	109.4	112.9
Vermont	97.7	102.7	97.6	118.8	110.3	97.0	104.1	104.0	87.0	98.4	107.4	108.5	105.5
Massachusetts	95.9	116.3	96.5	109.9	105.0	97.7	102.6	107.1	92.6	92.9	108.5	101.3	103.9
Rhode Island	101.4	113.4	92.3	92.4	114.3	103.4	100.6	97.9	95.3	88.5	114.6	106.3	103.5
Connecticut	95.9	111.7	101.7	110.5	107.3	97.8	100.0	103.6	102.4	91.8	107.1	96.5	101.1
New York	90.8	110.7	100.4	107.7	107.8	102.4	106.9	110.5	83.9	108.7	103.7	109.4	99.9
New Jersey	101.2	104.9	107.1	107.2	102.5	100.0	96.7	120.8	91.7	117.5	88.2	111.5	98.9
Pennsylvania	98.0	105.5	100.8	106.0	100.8	101.6	104.9	109.3	94.0	104.8	92.3	102.5	107.9
N. Atlantic	95.5	109.3	98.9	108.9	104.6	101.2	104.8	107.9	90.3	104.1	100.3	107.3	104.3
Ohio	97.2	100.1	111.9	89.2	111.1	101.9	104.7	106.7	88.7	97.3	104.7	89.7	101.9
Indiana	95.4	92.7	113.0	92.4	108.8	109.8	96.2	105.7	88.3	97.7	103.2	91.3	99.9
Illinois	80.3	85.3	118.5	95.7	120.0	111.0	96.6	101.2	94.1	102.5	107.1	98.4	102.8
Michigan	93.6	111.4	99.6	93.3	97.8	90.0	99.8	109.0	85.3	107.4	104.5	109.2	95.6
Wisconsin	109.7	106.3	103.4	103.8	103.4	113.5	107.3	112.3	89.4	110.5	92.6	103.3	111.9
Minnesota	114.6	94.7	116.1	79.2	110.8	123.2	88.6	96.9	84.5	98.4	97.3	118.8	104.8
Iowa	102.4	104.9	103.3	107.2	110.8	103.8	107.4	112.6	98.8	110.2	100.5	93.2	104.2
Missouri	71.1	84.6	108.8	78.8	124.0	84.4	105.7	114.2	101.8	101.3	107.8	100.0	98.6
North Dakota	98.2	99.2	137.3	72.5	64.9	108.1	69.2	91.1	82.3	127.0	81.3	135.5	102.9
South Dakota	81.8	93.6	137.2	88.8	115.1	138.9	88.7	104.0	87.0	103.1	101.9	98.6	76.5
Nebraska	78.0	102.9	125.4	113.9	102.7	78.0	114.5	137.3	104.4	89.1	109.4	102.2	86.1
Kansas	61.4	124.2	124.9	81.7	92.2	82.2	110.8	129.1	102.0	100.8	87.7	118.6	79.0
N. Central	90.7	99.4	114.4	92.6	107.3	103.6	100.4	109.8	92.9	103.0	101.0	102.7	97.8
Delaware	97.1	109.3	99.1	100.6	104.1	91.1	90.8	111.2	87.8	107.4	104.5	99.4	103.9
Maryland	93.3	112.9	99.6	106.4	106.0	99.9	98.2	112.0	90.2	104.6	102.3	95.9	102.1
Virginia	106.6	89.9	114.5	112.7	108.2	105.1	101.8	109.2	85.6	105.4	104.1	94.8	83.8
West Virginia	93.3	94.7	113.0	110.4	103.1	99.1	102.4	109.1	91.0	101.4	103.9	101.2	93.0
North Carolina	103.5	108.1	103.3	95.0	97.3	105.9	92.3	106.6	85.0	93.4	107.9	82.2	95.9
South Carolina	105.9	103.7	92.3	83.3	102.0	98.3	94.3	99.1	74.0	68.4	89.9	72.3	79.5
Georgia	103.9	111.2	92.0	91.5	97.2	96.8	85.1	87.9	73.3	66.8	59.7	95.5	87.4
Florida	111.1	112.0	100.5	95.4	94.5	98.8	92.3	96.5	90.5	110.2	100.6	102.0	101.1
S. Atlantic	103.5	105.1	99.6	102.9	100.7	100.3	93.1	100.4	80.8	84.4	90.6	88.4	91.9
Kentucky	82.9	101.9	108.0	102.5	108.9	100.5	95.0	106.2	93.2	100.4	100.5	94.5	90.4
Tennessee	88.1	98.5	103.7	101.0	105.1	95.5	95.6	104.9	96.6	92.3	86.1	92.2	85.5
Alabama	101.0	110.1	91.8	64.3	90.2	101.1	82.1	86.9	82.0	92.7	76.7	101.6	115.3
Mississippi	98.6	103.1	98.3	67.4	103.0	102.2	92.5	89.8	86.4	95.5	66.1	93.2	145.2
Arkansas	94.5	96.9	103.5	92.4	110.0	75.6	98.0	106.7	91.7	92.2	66.4	94.9	102.2
Louisiana	101.5	103.7	96.2	102.1	94.6	85.3	87.4	97.2	94.6	96.7	84.8	72.5	116.5
Oklahoma	61.7	105.6	122.2	79.2	86.8	66.3	138.7	139.6	104.9	76.7	74.5	113.4	79.2
Texas	103.2	103.7	102.6	95.5	73.9	65.4	124.2	113.5	92.4	86.4	97.1	98.9	75.5
S. Central	92.3	103.1	103.8	88.0	93.0	83.6	105.5	107.4	92.9	89.9	82.8	97.6	92.4
Montana	93.9	90.2	106.7	85.9	55.3	68.9	40.4	82.6	84.5	100.1	103.9	101.7	88.5
Idaho	101.6	95.4	97.9	88.8	90.7	89.0	81.5	98.2	98.2	94.7	105.3	79.4	117.5
Wyoming	91.9	97.9	99.4	86.9	88.3	104.7	65.1	113.2	86.5	94.3	94.4	87.4	96.5
Colorado	88.8	106.6	99.2	91.9	102.9	96.3	90.1	105.1	98.7	87.2	93.5	89.1	83.6
New Mexico	83.6	110.0	100.3	86.0	84.6	96.2	104.3	107.2	95.6	59.4	87.7	97.1	84.2
Arizona	116.0	97.9	94.0	109.0	99.5	94.0	112.0	96.8	110.5	93.9	109.8	102.8	111.1
Utah	92.2	100.2	94.5	88.4	108.7	94.0	78.2	102.7	107.7	99.2	105.9	87.8	124.0
Nevada	104.7	118.6	97.4	94.0	106.2	92.2	88.1	90.5	99.7	108.2	103.5	82.5	120.7
Washington	101.0	101.4	104.3	105.0	83.1	74.8	94.4	92.5	108.0	79.3	118.4	68.4	100.7
Oregon	104.5	95.0	100.4	107.0	82.4	80.2	98.0	102.9	103.9	87.5	111.6	76.5	112.7
California	88.4	109.9	103.8	101.7	103.2	88.5	99.4	96.3	95.2	105.4	107.7	90.9	106.9
Western	95.1	102.6	102.1	97.7	91.2	85.3	88.5	96.9	98.3	95.5	106.8	86.2	103.9
United States	93.3	102.3	108.0	95.1	102.0	97.6	99.8	106.9	91.7	96.7	96.1	98.1	99.6

Division of Crop and Livestock Estimates. Index numbers of individual crops relative to a 10-year moving average yield, weighted by States, according to crop values in 1919.

TABLE 693.—*Crops: Value of 22 crops and of all crops,[1] with rank*

State	Value all crops, 1919 census	Ratio value 22 crops to all crops in census 1919	Value 22 crops [2]			Hypothetical value all crops [3]			Rank	
			1919 census	1924	1925	1919–1923 average	1924	1925	1925	
									22 crops	All crops
	1,000 dols.	*P. ct.*	*1,000 dols.*	*1,000 dols.*	*1,000 dols.*	*1,000 dols.*	*1,000 dols.*	*1,000 dols.*		
Me	100,152	92	91,982	44,744	94,981	62,987	48,635	103,240	32	33
N. H	23,510	79	18,479	14,279	17,014	22,637	18,075	21,537	45	45
Vt	48,000	77	36,835	33,699	32,941	47,317	43,765	42,781	39	40
Mass	53,701	68	36,601	29,500	32,416	54,553	43,382	47,671	40	39
R. I	5,340	69	3,680	2,710	3,219	4,788	3,928	4,665	48	48
Conn	44,473	81	36,006	31,301	29,722	48,486	38,643	36,694	41	41
N. Y	417,047	77	321,598	228,939	248,862	351,088	297,323	323,197	14	8
N. J	87,484	70	61,273	37,365	44,170	66,696	53,379	63,100	37	37
Pa	409,969	86	350,991	233,957	262,173	308,040	272,043	304,852	11	12
Ohio	607,038	87	526,943	275,473	270,901	354,617	316,636	311,380	10	11
Indiana	497,230	90	449,079	240,390	226,930	284,739	267,100	252,144	17	18
Illinois	864,738	92	797,893	513,265	423,112	496,616	557,897	459,904	3	4
Mich	404,015	82	329,651	211,776	221,364	270,422	258,263	269,956	18	17
Wis	445,348	81	360,404	236,176	271,670	323,153	291,575	335,395	9	6
Minn	506,020	89	450,327	375,122	340,075	325,421	421,485	382,107	4	5
Iowa	890,391	92	820,126	490,767	438,844	508,600	533,442	477,004	2	3
Mo	559,048	89	496,261	296,321	278,891	339,716	332,945	313,361	7	10
N. Dak	301,783	92	278,315	327,269	256,424	216,389	355,727	278,722	13	15
S. Dak	311,007	93	288,376	230,669	178,504	210,972	248,031	191,940	22	25
Nebr	519,730	95	491,338	351,892	300,557	315,240	370,413	316,376	5	9
Kans	588,923	91	536,408	415,165	274,506	368,980	456,225	301,655	8	13
Del	23,059	72	16,516	12,661	13,545	17,864	17,585	18,812	46	46
Md	110,166	80	88,066	56,636	62,505	79,151	70,795	78,131	35	35
Va	292,824	85	247,463	152,338	139,420	208,969	179,221	164,024	27	27
W. Va	96,537	81	78,143	54,795	59,709	85,296	67,648	73,715	36	36
N. C	503,229	87	438,892	277,296	287,523	389,090	318,731	330,486	6	7
S. C	437,122	82	360,025	142,916	134,326	256,776	174,288	163,812	28	28
Ga	540,614	80	430,270	206,106	184,418	301,669	257,632	230,522	21	20
Fla	80,257	62	49,521	42,083	66,798	74,477	67,876	107,731	34	32
Ky	347,339	89	310,224	195,284	174,017	262,391	219,420	195,525	23	24
Tenn	318,285	83	263,797	182,537	162,694	227,484	219,924	196,017	24	23
Ala	304,349	81	246,271	183,058	187,142	230,873	225,898	231,040	19	19
Miss	336,207	83	278,539	178,192	238,214	221,224	214,689	287,005	16	14
Ark	340,813	83	283,175	195,686	186,096	232,904	235,766	224,212	20	21
La	206,182	71	147,290	104,510	140,890	158,494	147,197	198,437	25	22
Okla	550,085	87	479,314	349,116	240,788	317,375	401,283	276,768	15	16
Tex	1,071,542	83	885,955	752,993	488,383	834,234	907,226	588,413	1	1
Mont	69,975	86	60,058	117,806	101,503	89,872	136,984	118,027	30	30
Idaho	126,495	88	111,940	73,009	101,284	90,890	82,965	115,095	31	31
Wyo	30,271	88	26,528	23,817	27,728	33,182	27,065	31,509	42	42
Colo	181,065	76	137,660	92,615	111,526	135,161	121,862	146,745	29	29
N. Mex	40,620	77	31,093	30,786	20,939	36,108	39,982	27,194	44	44
Ariz	42,481	84	35,478	28,138	24,519	33,481	33,498	29,189	43	43
Utah	58,067	40	40,901	22,482	33,448	39,466	32,117	47,783	38	38
Nev	13,980	96	13,439	8,022	10,723	10,767	8,356	11,170	47	47
Wash	227,212	82	185,667	107,149	140,776	173,410	130,670	171,678	26	26
Oreg	131,885	75	99,095	59,539	76,637	108,080	79,385	102,183	33	34
Calif	589,757	54	315,091	224,389	258,015	452,872	415,535	477,806	12	2
U. S	14,755,365	84.3	12,442,977	8,494,738	7,920,837	10,083,017	10,062,604	9,480,710		

Division of Crop and Livestock Estimates.

[1] Does not include nursery or greenhouse products or forest products of the farm.

[2] The crops included are corn, wheat, oats, barley, rye, buckwheat, flaxseed, rice, potatoes, sweet potatoes, all hay, tobacco, lint cotton, beans, broomcorn, grain sorghums, hops, oranges, cloverseed, peanuts, cranberries, and apples.

[3] Based upon the relation of the value of all crops to that of the 22 crops shown by the census in 1919.

TABLE 694.—*Crops: Average weight in pounds per measured bushel of wheat, oats and barley, United States, 1909–1925*

Year	Weight per measured bushel[1]			Year	Weight per measured bushel[1]		
	Wheat	Oats	Barley		Wheat	Oats	Barley
	Pounds	*Pounds*	*Pounds*		*Pounds*	*Pounds*	*Pounds*
1909	57.9	32.7		1918	58.8	33.2	46.9
1910	58.5	32.7	46.9	1919	56.3	31.1	45.2
1911	57.8	31.1	46.0	1920	57.4	33.1	46.0
1912	58.3	33.0	46.8	1921	57.0	28.3	44.4
1913	58.7	32.1	46.5	1922	57.7	32.0	46.2
1914	58.0	31.5	46.2	1923	57.4	32.1	45.3
1915	57.9	33.0	47.4	1924	59.0	33.4	47.0
1916	57.1	31.2	45.2	1925	58.3	32.9	45.9
1917	58.5	33.4	46.6				

Division of Crop and Livestock Estimates. As reported by crop reporters on Nov. 1.

[1] Standard weights: Wheat, 60 lbs.; oats, 32 lbs.; barley, 48 lbs.

TABLE 695.—*Prices of articles bought by farmers, quarterly, January, 1923–October, 1925*

Article	Unit	United States											
		1923				1924				1925			
		Jan. 15	Apr. 15	July 15	Oct. 15	Jan. 15	Apr. 15	July 15	Oct. 15	Jan. 15	Apr. 15	July 15	Oct. 15
		Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Food:													
Bacon, smoked	Pound	0.279	0.270	0.272	0.272	.259	0.247	0.249	0.289	0.300	0.347	0.366	0.380
Beans, dry, edible	do	.104	.111	.109	.099	.096	.095	.093	.099	.102	.103	.102	.098
Coffee	do	.317	.326	.332	.328	.337	.363	.368	.403	.466	.473	.460	.470
Flour, wheat, 24 pounds	Sack	1.10	1.10	1.05	.99	1.00	1.00	1.04	1.17	1.34	1.37	1.37	1.32
Lard	Pound	.173	.173	.172	.179	.179	.171	.170	.201	.216	.225	.226	.233
Rice	do	.09	.09	.089	.09	.092	.093	.095	.099	.102	.103	.105	.107
Sugar	do	.088	.11	.112	.11	.107	.106	.091	.094	.089	.081	.076	.073
Salmon, canned	16-ounce	.223	.225	.24	.233	.238	.237	.232	.242	.244	.242	.246	.250
Tomatoes, canned	34-ounce	.189	.187	.188	.193	.191	.191	.192	.196	.200	.201	.203	.198
Clothing:													
Boots, knee, rubber	Pair	4.28	4.33	4.28	4.35	4.32	4.37	4.37	4.41	4.38	4.38	4.40	4.43
Gingham, apron, domestic	Yard	.189	.203	.201	.205	.209	.208	.202	.207	.203	.202	.197	.196
Overalls	Pair	1.62	1.73	1.77	1.81	1.87	1.88	1.83	1.85	1.77	1.82	1.78	1.77
Sheeting, 80 inches wide	Yard	.573	.609	.619	.619	.63	.63	.612	.624	.613	.616	.597	.595
Shoes, work	Pair	3.48	3.50	3.43	3.63	3.64	3.52	3.39	3.52	3.56	3.53	3.44	3.56
Socks, work, cotton	do	.17	.174	.173	.182	.193	.187	.182	.191	.194	.191	.184	.188
Suits, wool-serge, ready-made	Suit	25.83	25.95	26.12	26.95	27.35	26.98	26.18	26.76	27.04	27.24	26.44	27.64
Household articles:													
Blankets, cotton	Pair	2.74	2.64	2.69	2.79	2.94	2.84	2.85	3.00	3.03	2.95	2.88	2.96
Brooms, for sweeping	Each	.74	.82	.87	.90	.87	.85	.83	.84	.84	.82	.80	.79
Dinner plates, plain	½ dozen	1.19	1.19	1.16	1.17	1.21	1.19	1.17	1.20	1.19	1.19	1.15	1.13
Fruit jars, Mason, 1-quart	1 dozen	1.11	1.10	1.08	1.04	1.08	1.09	1.05	1.03	1.05	1.06	1.04	1.02
Frying pan, cast iron, 10-inch	Each	.67	.70	.65	.66	.70	.72	.70	.72	.72	.80	.76	.80
Kitchen chair, plain	do	1.59	1.59	1.67	1.60	1.71	1.68	1.75	1.80	1.82	1.78	1.76	1.77
Oil lamp, glass body	do	.82	.84	.80	.83	.85	.82	.83	.85	.86	.86	.83	.84
Rugs, 9 by 12, tapestry	do	23.06	25.85	25.31	25.68	25.50	25.84	24.26	25.53	25.11	24.95	24.56	25.13
Rugs, 9 by 12, brussels	do	36.48	38.56	38.66	36.94	39.54	38.56	37.01	38.07	37.52	36.36	36.84	38.89
Washtubs, heavy galvanized	do	1.26	1.25	1.24	1.24	1.32	1.23	1.19	1.23	1.24	1.25	1.21	1.17
Building material:													
Bricks, common	1,000	20.18	20.36	20.43	20.79	21.76	20.94	21.44	21.37	21.60	22.38	21.80	22.04
Boards, rough, 1-inch, feet b. m	1,000	35.53	37.09	37.44	37.39	36.49	37.52	36.36	36.29	37.21	36.84	38.84	38.82
Flooring, clear, 1-inch tongue and groove, feet b. m	1,000	64.70	67.32	67.33	64.19	64.91	66.50	66.30	65.45	66.50	65.98	68.21	68.15
2-inch framing lumber, feet b. m	1,000	37.37	39.73	40.17	38.71	37.51	37.67	37.04	38.19	38.77	38.41	40.42	40.28
House paint, ready-mixed	Gallon	3.16	3.29	3.34	3.32	3.37	3.41	3.45	3.45	3.50	3.57	3.61	3.56
Lime, common, lump	100 pounds	1.71	1.79	1.75	1.76	1.86	1.67	1.75	1.72	1.68	1.63	1.65	1.39
Portland cement	96 pounds	1.05	1.00	1.06	1.02	1.02	.98	.96	.95	.96	.96	.93	.92
Roofing, composition, 3-ply	108 square feet	3.03	3.01	3.02	3.00	2.97	2.99	2.91	2.95	2.95	2.93	2.96	2.98
Roofing, steel, galvanized, 2½-inch corrugated, 29 gauge	100 square feet	5.88	5.90	6.01	5.99	5.93	5.93	6.02	5.90	5.82	5.87	5.73	5.66

Fuel:													
Coal, hard (anthracite)	Ton	16.16	15.76	15.71	16.11	16.29	15.62	16.02	16.12	16.28	15.66	16.06	16.49
Coal, soft (bituminous)	do	10.70	10.30	9.69	9.51	9.50	9.43	8.91	8.84	8.99	8.80	8.85	8.94
Gasoline	Gallon	.233	.259	.247	.20	.199	.237	.221	.183	.187	.240	.246	.222
Kerosene	do	.177	.181	.181	.169	.174	.179	.176	.170	.172	.176	.175	.173
Machinery and equipment:													
Auto tires, fabric, 30 by 3½ inches	Each	10.77	10.85	10.91	10.44	10.27	9.87	9.36	9.14	9.04	8.88	9.12	10.25
Barbed wire, galvanized	100 pounds	4.87	5.05	5.26	5.19	5.19	5.19	5.18	5.18	5.07	5.09	5.06	5.06
Binder twine	Pound	.132	.137	.134	.135	.136	.139	.139	.140	.144	.150	.157	.160
Centrifugal hand cream separator, 250-quart capacity	Each	79.10	80.61	81.91	84.06	85.31	83.52	83.00	83.04	84.63	86.62	85.01	85.80
Dairy milk cans, 10 gallon	do	4.85	4.82	4.96	4.85	5.00	4.93	4.79	4.85	4.87	4.88	4.83	4.92
Engines, gasoline, 3 horsepower	do	97.44	100.48	103.45	103.00	103.99	101.66	104.84	100.94	101.73	101.50	100.25	98.70
Grain binder, 7-foot	do	201.61	206.95	217.97	217.10	222.81	221.06	225.41	226.91	222.23	227.12	224.04	228.70
Harrows, disk, 7-foot, single	do	53.36	54.51	55.25	53.00	57.74	59.75	60.64	61.22	57.97	62.99	61.92	62.19
Hay rakes, 2-horse, sulky	do	40.67	39.88	44.75	43.34	44.91	45.09	47.16	46.88	46.05	46.34	46.70	46.76
Horse collars, leather	do	5.06	5.24	5.37	5.26	5.40	5.32	5.19	5.13	5.24	5.29	5.27	5.46
Mower, 5-foot	do	74.39	76.92	81.39	81.00	81.22	82.96	84.50	80.38	84.35	83.06	83.00	82.63
Nails, 8d wire	Pound	.058	.06	.062	.061	.062	.062	.061	.062	.060	.060	.060	.063
Oil, machine, lubricating	Gallon	.69	.67	.69	.70	.71	.70	.64	.70	.70	.70	.69	.70
Pitchforks, 3 tines	Each	1.14	1.18	1.21	1.21	1.23	1.23	1.26	1.27	1.28	1.28	1.29	1.29
Plow, 2-horse, walking	do	18.24	18.83	18.94	19.83	19.92	20.39	21.46	21.59	20.92	22.18	21.79	21.88
Plow, riding, horse-drawn, 2 bottom	do	85.10	89.54	91.79	89.47	95.00	97.41	96.07	99.22	101.11	99.64	99.72	101.51
Poultry netting, 5 by 150 feet	Bale	6.51	6.29	6.41	6.42	6.41	6.35	6.22	6.14	6.32	6.29	6.44	6.42
Rope, manila	Pound	.266	.275	.273	.268	.273	.273	.269	.274	.288	.300	.311	.319
Wagons, double, complete	Each	123.26	129.99	134.42	134.00	135.68	134.60	134.82	137.88	133.78	137.82	136.92	138.26
Fertilizer:													
Acid phosphate, 16 per cent	Ton	20.10	21.12	21.31	20.95	21.00	18.99	19.43	21.32	21.41	21.96	22.11	22.32
Kainit	do	18.70	18.35	17.87	16.26	17.08	14.88	15.28	18.82	17.61	19.53	18.81	19.78
Limestone, ground	do	4.77	5.38	5.62	4.50	5.83	5.61	4.60	3.80	4.55	5.02	4.70	4.52
Muriate of potash	do	48.03	48.66	49.41	50.95	52.71	46.96	47.51	49.51	51.17	51.98	52.41	50.74
Nitrate of soda	100 pounds	2.62	3.53	3.76	4.09	3.53	3.36	3.52	3.47	3.56	3.61	3.77	3.92
Feeds:													
Bran	do	1.75	1.95	1.85	1.84	1.83	1.81	1.73	1.83	2.04	1.94	1.98	1.90
Corn meal	do	2.27	2.29	2.58	2.60	2.44	2.49	2.70	3.14	3.27	3.20	3.16	3.00
Cottonseed meal	do	2.81	2.79	2.70	2.72	2.81	2.64	2.64	2.72	2.67	2.58	2.63	2.57
Linseed meal	do	3.10	2.99	2.92	2.98	2.93	2.83	2.82	2.98	2.96	2.89	2.90	2.86
Middlings	do	1.96	2.17	2.12	2.08	2.04	2.00	1.94	2.09	2.31	2.20	2.26	2.19
Rock salt, for stock	do	1.34	1.29	1.35	1.27	1.27	1.23	1.26	1.23	1.26	1.23	1.17	1.10

Division of Crop and Livestock Estimates. Averages of local prices reported quarterly.

FARM EQUIPMENT

TABLE 696.—*Farm equipment manufactured and sold in the United States, 1920–1924*

Type of equipment and year	Quantity			Value		
	Manufactured	Sold		Manufactured	Sold	
		In the United States	For export		In the United States	For export
	Number	*Number*	*Number*	*1,000 dols.*	*1,000 dols.*	*1,000 dols.*
Planting machinery:						
1920	472,248	498,853	16,822	20,097	21,612	1,458
1921	310,855	209,572	9,689	8,441	5,870	466
1922	189,230	192,415	8,613	4,214	5,241	449
1923				9,588	9,251	855
1924				9,699	8,659	1,536
Plows and listers:						
1920	1,361,578	1,215,979	221,077	43,222	37,699	7,200
1921	566,209	407,760	102,262	13,007	9,071	2,648
1922	441,800	455,836	58,133	9,680	11,215	1,401
1923				24,252	20,086	4,673
1924				21,030	17,651	5,581
Tillage implements:						
1920				22,919	20,636	1,665
1921				10,436	7,488	980
1922				4,777	5,472	325
1923				11,483	10,435	727
1924				9,577	8,418	1,012
Cultivators:						
1920	580,179	589,830	45,863	15,186	17,296	670
1921	447,627	368,365	41,939	8,265	6,545	282
1922	259,535	305,773	12,723	4,272	5,571	226
1923				13,347	13,086	500
1924				14,681	13,467	682
Haying machinery:						
1920	411,556	338,112	94,011	24,703	19,667	6,230
1921	219,429	139,412	39,968	10,230	6,776	1,807
1922	154,367	189,567	14,320	7,625	8,831	734
1923	241,320	212,408	30,631	15,503	14,018	2,085
1924				15,767	12,158	3,000
Harvesting machinery:						
1920	232,177	168,829	41,334	41,015	30,626	7,339
1921	119,111	60,667	33,933	18,028	8,977	5,840
1922	80,565	80,337	16,512	11,822	11,242	2,747
1923	109,937	81,037	39,913	26,278	17,033	10,792
1924				29,752	14,849	12,769
Machines for preparing crops for market or use:						
1920	196,772	159,918	30,220	35,612	34,749	3,010
1921	87,938	64,459	9,670	21,436	15,032	1,988
1922	172,258	146,938	39,024	18,294	19,873	3,487
1923				30,761	22,918	5,838
1924				23,695	19,532	2,834
Tractors:						
Gas—						
1920	203,207	162,988	29,143	193,563	161,896	30,850
1921	73,198	(1)	(1)	50,295	(1)	(1)
1922	99,692	101,192	10,232	52,178	52,440	6,458
1923	134,590	117,701	16,643	91,889	76,240	14,317
1924	119,305	99,011	25,622	82,275	73,855	16,623
Steam—						
1920	1,766	1,401	121	4,661	3,903	370
1921	1,168	724	72	2,874	1,737	188
1922	596	519	56	1,065	1,421	223
1923	620	424	79	1,893	1,179	365
1924	1,518	1,486	83	6,306	6,070	3,378
Horse-drawn vehicles:						
1920	449,095	430,459	3,810	42,423	40,929	339
1921	92,816	(1)	(1)	8,861	(1)	(1)
1922	143,548	158,207	2,028	11,953	13,410	116
1923	254,203	247,519	4,723	24,553	23,157	1,041
1924				15,537	15,408	135

[1] The sales statistics for 1921 relate exclusively to complete machines and were compiled almost wholly from returns made by 427 establishments classified in the "agricultural implements" industry. No sales data were collected for that year from establishments manufacturing gas tractors, horse-drawn vehicles, barn equipment, and miscellaneous farm equipment.

TABLE 696.—*Farm equipment manufactured and sold in the United States, 1920–1924*—Continued

Type of equipment and year	Quantity			Value		
	Manufactured	Sold		Manufactured	Sold	
		In the United States	For export		In the United States	For export
Barn and barnyard equipment:	*Number*	*Number*	*Number*	*1,000 dols.*	*1,000 dols.*	*1,000 dols.*
1921				[2] 430	[2] 437	
1922				4,536	4,306	3
1923				9,910	9,636	100
1924				6,440	6,369	70
Miscellaneous:						
1920				93,544	82,429	7,495
1921				175,738	(1)	(1)
1922				79,224	83,886	5,404
1923				105,397	94,937	8,056
1924				94,411	86,978	7,699
Grand total:						
1920				536,945	471,442	66,626
1921				328,041	(1)	(1)
1922				209,640	222,908	21,663
1923				364,854	311,976	49,349
1924				329,170	283,414	55,319

Division of Statistical and Historical Research. Data for 1920 compiled from reports of the Bureau of Public Roads. Data for 1921–1924 compiled from reports of the Bureau of the Census.

[1] The sales statistics for 1921 relate exclusively to complete machines and were compiled almost wholly from returns made by 427 establishments classified in the "agricultural implements" industry. No sales data were collected for that year from establishments manufacturing gas tractors, horse-drawn vehicles, barn equipment, and miscellaneous farm equipment.

[2] Figures for 1921 relate to barn equipment only. No data for 1920

FARM PRICES

TABLE 697.—*Estimated prices of agricultural products received by producers, weighted by calendar and by crop years, 1908–1925*

Year	Grains and seeds																									
	Wheat		Corn		Oats		Barley		Rye		Buckwheat		Flaxseed		Kafir corn		Beans (dry)		Soy beans	Cowpeas		Clover seed		Timothy seed		Cottonseed	
	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning Nov. 1	Year beginning Jan. 1	Year beginning Aug. 1	Year beginning Jan. 1	Year beginning Aug. 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning Sept. 1	Year beginning Jan. 1	Year beginning Sept. 1	Year beginning Jan. 1	Year beginning Nov. 1	Year beginning Jan. 1	Year beginning Sept. 1	Year beginning Oct. 1	Year beginning Jan. 1	Year beginning Aug. 1	Year beginning Jan. 1	Year beginning Sept. 1	Year beginning Jan. 1	Year beginning Aug. 1	Year beginning Jan. 1	Year beginning Aug. 1
	Cts. p. bu.	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Dols. p. ton*	*Dols. p. ton*
1908	90.8	94.8	63.8	66.4	48.2	49.8	58.7	58.2	73.9	74.4	76.3	77.3	110.3	120.4	------	------	------	------	------	------	------	------	------	------	------	------	------	------
1909	101.9	100.7	66.2	63.7	46.9	43.0	57.9	55.8	74.7	74.5	74.7	72.1	142.2	159.0	------	------	221.6	220.7	------	------	------	8.05	8.30	------	4.28	------	26.75
1910	96.3	91.7	61.8	53.6	39.9	35.5	56.7	61.3	73.8	73.4	69.6	67.5	218.8	228.5	------	------	225.7	236.8	------	------	------	9.36	11.25	6.07	6.87	17.99	17.13
1911	86.3	88.3	55.9	69.6	38.9	46.2	75.9	83.2	78.2	81.0	70.6	75.4	205.9	194.3	------	------	236.9	225.0	------	------	------	10.72	9.71	3.88	2.01	18.31	18.77
1912	86.7	83.3	67.5	57.0	41.9	34.5	67.5	53.2	74.6	69.0	72.4	68.3	145.5	123.5	------	------	------	------	------	------	------	------	------	------	------	------	------
1913	78.7	79.3	60.2	71.9	36.8	39.0	53.1	52.6	63.5	63.0	72.8	76.6	118.6	124.5	------	------	218.5	217.4	175.6	------	------	8.86	7.75	1.97	2.13	22.01	22.14
1914	88.0	99.4	71.3	72.7	41.0	45.9	50.9	55.4	73.0	83.4	77.9	81.1	127.6	134.5	------	------	222.3	255.7	218.0	------	------	8.21	8.41	2.33	2.49	16.20	15.59
1915	104.3	98.2	71.6	70.1	43.1	39.4	55.0	54.3	89.3	85.3	81.6	81.5	162.9	174.0	------	------	291.2	327.2	210.6	164.5	151.9	8.93	9.98	2.70	2.89	28.99	30.25
1916	124.3	144.4	75.0	124.2	44.4	53.8	70.1	88.7	99.4	114.6	96.9	126.5	221.1	243.5	------	152.6	430.4	591.5	215.6	152.0	189.7	9.72	9.54	2.61	2.42	46.82	48.11
1917	202.6	205.8	131.8	147.6	63.9	72.1	110.3	137.8	160.7	176.5	155.0	167.1	260.6	315.9	163.4	182.3	705.3	703.7	305.4	241.1	236.2	11.07	14.48	3.13	3.50	62.88	64.04
1918	204.5	206.3	148.7	152.1	75.2	69.4	113.5	98.6	167.5	152.7	173.8	164.7	347.3	353.6	180.3	160.4	611.2	498.4	323.2	241.5	254.3	17.54	21.01	3.90	4.19	58.78	65.62
1919	213.6	218.6	151.5	150.1	69.7	79.9	110.9	125.7	139.6	144.6	154.0	159.2	406.8	421.1	158.4	140.4	443.8	440.7	344.6	281.4	319.4	24.34	28.34	4.64	4.98	66.99	67.87
1920	215.9	182.9	138.9	62.6	74.1	51.0	109.6	76.1	156.4	145.0	150.3	126.8	279.6	199.2	130.7	63.6	391.6	312.2	279.9	329.0	273.8	22.30	11.81	4.21	3.29	40.39	28.56
1921	111.7	104.4	57.8	53.4	34.5	33.0	48.3	47.4	94.6	83.0	100.7	89.1	150.4	164.2	55.0	54.8	286.1	318.0	216.6	208.9	190.7	10.51	11.14	2.64	2.64	28.23	29.25
1922	99.2	98.0	57.5	76.6	35.9	39.1	59.1	52.6	70.6	67.8	88.3	89.9	204.8	218.2	64.2	96.6	351.2	388.1	200.0	165.0	172.8	10.99	10.71	2.57	2.60	31.29	32.13
1923	94.5	92.4	77.9	83.1	40.9	42.4	55.3	57.1	61.8	59.8	94.6	96.3	222.0	215.0	96.3	88.1	400.8	363.4	212.4	199.2	213.6	11.63	12.38	3.01	3.19	41.75	41.58
1924	115.2	127.8	88.0	106.8	47.4	48.7	71.3	77.9	84.4	100.1	103.3	108.6	220.4	231.9	88.4	100.8	363.4	391.5	229.4	245.8	272.7	13.05	15.35	3.24	3.11	33.28	32.94
1925	149.5	------	101.4	------	43.3	------	67.7	----	92.9	------	98.4	------	237.8	------	98.5	------	388.6	------	------	315.5	------	15.86	------	3.22	------	32.79	------

Year	Fruits and vegetables											
	Apples		Peaches	Pears	Potatoes		Sweet potatoes		Cabbage		Onions	
	Year beginning Jan. 1	Year beginning June 1	Year beginning June 1	Year beginning Aug. 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning July 1
	Cts. p. bu.	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. p. bu.*	*Cts. per 100 lbs.*	*Cts. per 100 lbs.*	*Cts. p. bu.*	*Cts. p. bu.*
1908					72.7	79.0						
1909					73.4	57.9						
1910	86.3	88.1	113.3	100.9	55.3	61.3	76.6	78.7	194.2	156.6	99.1	106.2
1911	80.2	76.6	138.2	109.4	81.3	99.6	87.8	92.2	163.3	222.5	112.1	129.8
1912	70.5	66.8	111.2	100.4	77.9	55.6	88.9	85.6	196.5	127.6	120.5	88.2
1913	85.6	93.0	131.3	111.2	63.0	70.6	84.6	84.0	153.1	195.0	96.9	124.0
1914	71.2	62.7	108.7	93.7	66.1	58.0	84.1	84.6	176.9	160.1	126.2	106.1
1915	68.3	71.0	88.2	82.5	54.2	70.8	79.1	75.4	148.6	132.7	94.1	104.5
1916	85.9	90.7	115.0	104.8	112.1	166.3	82.9	92.9	195.3	444.9	131.5	241.7
1917	110.1	113.6	148.0	127.4	175.1	122.5	111.8	122.3	427.2	262.1	255.5	156.7
1918	131.9	137.5	176.6	161.1	118.8	125.6	144.9	150.0	269.6	283.4	152.3	171.3
1919	175.7	186.1	200.9	185.7	147.3	223.8	156.0	161.7	321.4	431.5	204.2	257.0
1920	151.0	134.4	228.9	194.1	221.9	131.5	159.2	144.8	384.3	218.8	231.9	145.6
1921	185.2	196.2	213.5	172.2	109.7	121.3	117.0	110.9	243.5	292.0	153.0	252.5
1922	117.1	107.5	152.3	139.7	88.0	73.9	101.2	97.4	248.9	244.0	229.3	160.7
1923	120.3	117.3	175.8	165.5	87.1	94.2	112.7	121.7	287.0	284.4	186.2	181.9
1924	119.2	122.1	153.7	165.4	83.2	76.5	138.1	152.4	268.2	246.6	168.7	184.0
1925	129.0		178.4		124.0		166.6		262.9		207.4	

TABLE 697.—*Estimated prices of agricultural products received by producers, weighted by calendar and by crop years, 1908–1925*—Contd.

Year	Hay crops										Other commodities			
	Hay (all loose)		Timothy hay		Clover hay		Alfalfa hay		Prairie hay		Cotton (lint)		Peanuts	
	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning Aug. 1	Year beginning Jan. 1	Year beginning Nov. 1
	Dollars per ton	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Dollars per ton*	*Cents per pound*	*Cents per pound*	*Cents per pound*	*Cents per pound*
1908	9.94	9.46									9.4	9.0		
1909	9.98	10.61									12.1	13.6		
1910	11.26	11.54									14.0	14.0	4.7	4.6
1911	12.90	14.36									11.0	9.7	4.5	4.4
1912	13.16	11.17									11.0	11.5	4.6	4.6
1913	11.06	11.49									12.3	12.5	4.6	4.6
1914	11.23	10.92		13.87		12.83		9.12		7.69	8.7	7.4	4.5	4.4
1915	10.41	10.40	13.32	13.09	11.97	11.29	8.95	9.39	7.34	7.13	10.0	11.2	4.3	4.3
1916	10.47	11.22	12.81	12.83	11.00	11.33	10.59	12.76	7.51	8.61	15.5	17.7	4.5	4.8
1917	13.81	16.30	15.43	18.67	14.10	17.21	16.51	18.42	11.32	13.31	23.8	27.2	6.5	7.1
1918	18.23	19.42	21.22	22.66	19.52	20.93	19.58	20.35	14.61	16.03	29.6	28.8	6.6	6.5
1919	20.42	21.27	23.95	25.13	22.25	23.69	21.33	22.70	17.02	16.78	31.9	35.0	8.3	9.2
1920	20.55	16.65	25.93	20.64	23.70	19.48	21.24	15.96	14.61	10.94	25.4	17.2	6.5	4.7
1921	12.59	11.74	15.70	14.82	15.14	14.15	11.07	10.58	8.07	7.62	14.9	16.9	3.8	3.7
1922	11.57	11.67	14.43	14.18	13.39	13.93	11.66	12.82	7.96	8.79	20.6	23.5	4.6	5.5
1923	12.37	12.98	15.33	16.53	14.05	15.54	13.58	13.54	9.37	8.92	28.0	29.0	6.4	6.5
1924	13.22	12.68	15.93	14.30	14.82	13.43	13.72	13.81	8.57	8.70	24.9	23.0	6.1	5.7
1925	12.60		14.39		13.59		13.77		9.16		21.0		4.9	

Division of Crop and Livestock Estimates.

TABLE 698.—*Estimated prices of agricultural products received by producers, weighted by calendar and by crop years, 1910–1925*

Year	Livestock and livestock products														
	Hogs		Beef cattle		Veal calves	Sheep	Lambs		Horses	Chickens		Eggs		Butter	Wool
	Year beginning Jan. 1	Year beginning Nov. 1	Year beginning Jan. 1	Year beginning Aug. 1	Year beginning Jan. 1	Year beginning Jan. 1	Year beginning Jan. 1	Year beginning June 1	Year beginning Jan. 1	Year beginning Jan. 1	Year beginning July 1	Year beginning Jan. 1	Year beginning Apr. 1	Year beginning Jan. 1	Year beginning Jan. 1
	Dols. per 100 lbs.	*Dols. per 100 lbs.*	*Dols. per 100 lbs.*	*Dols. per 100 lbs.*	*Dols. per 100 lbs.*	*Dols. per 100 lbs.*	*Dols. per 100 lbs.*	*Dols. per 100 lbs.*	*Dols. per head*	*Cts. per lb.*	*Cts. per lb.*	*Cts. per doz.*	*Cts. per doz.*	*Cts. per lb.*	*Cts. per lb.*
1910	8.10	6.61	4.78	4.55	6.42	5.24	6.40	5.79	146	11.3	11.0	20.5	19.3	25.5	20.5
1911	6.30	6.43	4.46	4.69	6.04	4.16	5.19	5.28	141	10.4	10.4	16.9	18.2	22.9	15.6
1912	6.66	7.39	5.14	5.60	6.45	4.24	5.62	5.96	140	10.9	11.2	19.8	18.9	25.7	18.1
1913	7.44	7.60	5.91	6.12	7.48	4.55	6.06	6.03	142	11.7	12.0	18.8	19.8	26.7	16.4
1914	7.52	6.69	6.24	6.12	7.83	4.79	6.34	6.49	135	11.8	11.5	20.1	19.3	25.1	17.7
1915	6.56	7.61	6.01	6.24	7.63	5.27	6.86	7.38	130	11.6	12.0	18.9	19.0	25.7	22.8
1916	8.13	12.10	6.48	7.31	8.35	6.29	8.22	9.50	130	13.4	14.6	21.4	23.3	28.0	27.9
1917	13.46	15.78	8.17	8.92	10.51	9.45	12.31	13.60	132	16.9	18.4	31.3	33.0	35.9	47.8
1918	15.85	16.60	9.46	9.85	11.91	10.95	13.93	13.65	130	21.6	23.0	35.2	34.9	42.7	57.9
1919	16.02	13.43	9.61	9.00	12.76	9.63	12.96	13.05	121	23.4	24.2	39.9	41.8	50.3	50.3
1920	12.86	8.52	8.38	6.76	11.80	8.51	11.85	9.41	119	24.3	22.8	42.3	39.3	54.3	39.1
1921	7.81	8.10	5.44	5.18	7.81	4.65	7.19	7.83	92	20.1	19.3	26.9	25.3	37.0	16.4
1922	8.32	7.34	5.43	5.55	7.68	5.96	9.76	10.30	84	18.4	18.2	23.9	24.7	35.3	29.8
1923	7.11	7.06	5.57	5.57	7.99	6.65	10.50	10.54	82	18.3	18.3	25.6	25.2	40.4	38.9
1924	7.46	10.46	5.59	5.88	8.12	6.81	10.75	11.45	76	18.8	19.2	25.2	26.1	39.4	36.9
1925	10.88		6.26		8.85	7.70	12.30		78	19.9		29.1		40.7	38.5

Division of Crop and Livestock Estimates.

TABLE 699.—*Index numbers of farm prices of 30 commodities, 1910–1925*

[August, 1909–July, 1914=100]

Year	Grains	Fruits and vegetables	Meat animals	Dairy and poultry products	Cotton and cotton seed	Unclassified	All groups
1910	104	91	103	101	113	102	103
1911	96	106	87	95	101	103	95
1912	106	110	95	103	87	106	99
1913	92	92	108	100	97	94	100
1914	103	100	112	101	85	95	102
1915	120	83	104	99	78	95	100
1916	126	123	120	106	119	100	117
1917	217	202	173	133	187	130	176
1918	226	162	202	160	245	157	200
1919	231	189	206	182	247	162	209
1920	231	249	173	197	248	152	205
1921	112	148	108	151	101	90	116
1922	105	152	113	135	156	94	124
1923	114	136	106	147	216	109	135
1924	129	124	109	137	211	100	134
1925	156	160	139	143	177	92	147

Division of Statistical and Historical Research. The commodities, by groups, are as follows: Grains—wheat, corn, oats, barley, rye, kafir; fruits and vegetables—apples, oranges, grapefruit, potatoes, sweet potatoes, beans, onions, cabbage; meat animals—beef cattle, calves, hogs, sheep, lambs; dairy and poultry products—chickens, eggs, butter (represents butter, butterfat, and cream), milk; cotton and cottonseed; unclassified—horses (represents horses and mules), hay, flax, tobacco, wool.

TABLE 700.—*Index numbers of farm prices of 30 commodities, by months, 1910–1925*

[August, 1909–July, 1914=100]

Year and month	Grains	Fruits and vegetables	Meat animals	Dairy and poultry products	Cotton and cottonseed	Unclassified	All groups
1910							
January	110	90	99	112	116	101	106
February	112	93	100	106	113	105	105
March	112	92	109	98	113	107	107
April	109	92	115	99	113	105	108
May	107	96	110	95	114	102	105
June	106	93	109	94	113	100	104
July	107	90	103	93	113	99	102
August	106	94	98	95	115	100	102
September	102	94	102	100	112	100	102
October	97	88	101	103	111	100	101
November	92	84	96	108	113	101	99
December	90	87	93	111	115	102	99
1911							
January	91	92	96	107	117	101	100
February	90	94	93	96	114	101	97
March	88	97	92	91	113	100	95
April	89	106	88	89	114	100	94
May	92	108	84	87	116	101	94
June	94	121	82	86	116	104	95
July	97	129	83	87	110	105	95
August	99	125	88	91	100	107	96
September	101	109	88	95	88	106	95
October	104	94	84	98	77	105	92
November	103	93	83	104	72	106	92
December	102	102	82	109	70	105	92
1912							
January	104	109	83	112	71	106	94
February	107	118	85	110	76	109	97
March	110	130	87	104	81	113	99
April	116	144	96	98	85	117	104
May	123	150	98	97	89	119	107
June	122	135	96	95	89	116	104
July	115	116	95	95	93	107	101
August	106	104	100	97	92	100	100
September	100	86	103	100	89	97	98
October	95	74	104	106	88	96	97
November	87	73	99	108	91	97	95
December	82	78	99	108	97	96	95

TABLE 700.—*Index numbers of farm prices of 30 commodities, by months, 1910–1925*—Continued

[August, 1909–July, 1914=100]

Year and month	Grains	Fruits and vegetables	Meat animals	Dairy and poultry products	Cotton and cotton-seed	Unclassified	All groups
1913							
January	84	79	99	104	97	95	95
February	86	81	103	99	96	95	96
March	86	81	109	97	95	94	97
April	88	83	113	94	95	94	98
May	91	92	109	94	94	92	98
June	94	99	110	93	94	92	99
July	93	103	111	93	94	92	99
August	95	102	110	99	93	92	101
September	98	96	109	105	101	94	103
October	97	97	110	105	106	94	104
November	96	96	108	112	102	96	104
December	97	97	107	113	98	96	103
1914							
January	97	101	109	112	96	95	104
February	98	106	112	107	99	96	105
March	99	110	114	100	99	96	104
April	100	115	114	95	98	96	104
May	101	117	113	93	100	97	104
June	100	119	112	93	101	96	104
July	97	113	114	94	100	95	103
August	104	102	118	98	86	94	104
September	111	92	117	102	66	94	102
October	110	79	111	104	58	92	98
November	108	71	106	108	54	92	96
December	111	72	104	110	57	92	97
1915							
January	123	75	103	110	60	92	100
February	134	78	101	105	65	95	101
March	136	77	101	96	67	97	100
April	138	82	103	94	73	98	102
May	139	90	106	94	74	98	104
June	127	91	107	91	72	98	101
July	118	89	106	91	70	97	99
August	115	85	105	93	70	94	97
September	106	76	106	96	81	93	97
October	101	79	108	101	99	92	101
November	99	84	101	107	99	92	99
December	102	89	98	110	100	93	100
1916							
January	112	99	101	108	100	95	104
February	115	108	108	102	100	98	106
March	111	112	116	98	99	100	108
April	111	114	121	96	102	102	110
May	113	117	123	97	104	104	111
June	110	124	124	97	107	103	112
July	113	125	124	97	109	100	113
August	127	123	123	101	115	98	117
September	138	121	127	106	128	97	123
October	147	129	122	114	144	98	128
November	158	147	123	124	163	101	137
December	157	156	125	129	160	104	139
1917							
January	161	167	131	127	148	107	140
February	169	208	144	127	144	109	148
March	179	241	162	122	149	115	159
April	217	265	177	123	160	123	176
May	251	283	179	128	169	132	188
June	246	270	177	125	189	136	188
July	250	219	173	124	204	135	185
August	248	165	178	129	199	133	183
September	233	146	190	138	197	135	184
October	223	150	194	147	214	139	187
November	213	155	186	153	232	145	187
December	213	156	190	159	237	152	191

TABLE 700.—*Index numbers of farm prices of 30 commodities, by months, 1910–1925*—Continued

[August, 1909–July, 1914=100]

Year and month	Grains	Fruits and vegetables	Meat animals	Dairy and poultry products	Cotton and cottonseed	Unclassified	All groups
1918							
January	218	158	187	165	244	158	194
February	227	162	188	163	249	160	197
March	234	157	194	153	257	164	199
April	235	156	204	146	251	162	200
May	231	160	210	144	235	157	198
June	227	160	207	144	234	152	196
July	228	172	205	146	235	150	197
August	230	177	211	153	246	152	203
September	229	166	214	161	264	157	207
October	222	160	204	174	253	159	204
November	216	158	198	184	236	158	200
December	217	155	199	192	235	159	201
1919							
January	217	154	201	189	225	159	200
February	214	156	204	172	208	156	194
March	220	167	211	164	206	159	197
April	234	179	224	168	213	162	207
May	245	197	227	171	232	169	215
June	245	205	221	171	249	171	216
July	248	216	228	172	260	167	222
August	246	219	227	176	259	166	222
September	233	194	197	182	252	162	208
October	222	186	185	192	277	155	206
November	220	187	177	207	295	155	209
December	229	206	173	217	292	158	212
1920							
January	241	226	181	215	293	166	219
February	242	252	184	205	295	171	221
March	246	279	184	193	298	173	222
April	261	323	186	191	304	177	230
May	277	373	181	187	303	180	235
June	283	366	182	183	301	169	234
July	266	314	181	184	297	152	224
August	242	239	177	190	266	141	209
September	222	180	177	196	218	136	194
October	193	150	169	203	175	128	178
November	157	141	150	209	132	118	158
December	138	144	124	205	101	111	140
1921							
January	138	136	123	190	93	105	135
February	136	127	119	170	89	102	128
March	131	125	125	152	80	99	123
April	118	124	114	144	76	95	115
May	116	132	111	133	78	91	112
June	117	140	105	127	78	90	110
July	109	156	109	131	79	87	111
August	103	178	112	139	91	86	116
September	100	171	101	144	130	84	118
October	94	162	98	155	150	82	120
November	88	162	92	164	137	80	116
December	88	165	91	166	131	82	115
1922							
January	91	159	95	149	129	83	114
February	102	173	108	136	128	84	118
March	111	181	118	129	134	80	123
April	114	190	117	125	135	80	123
May	115	206	119	123	144	86	127
June	111	197	121	124	160	84	128
July	105	174	120	123	166	85	126
August	100	129	114	125	166	86	120
September	97	109	112	132	160	90	119
October	101	101	113	142	168	97	123
November	106	104	108	152	156	94	126
December	111	104	107	161	145	103	131

TABLE 700.—*Index numbers of farm prices of 30 commodities, by months, 1910–1925*—Continued

[August, 1909–July, 1914=100]

Year and month	Grains	Fruits and vegetables	Meat animals	Dairy and poultry products	Cotton and cottonseed	Unclassified	All groups
1923							
January	113	117	110	157	203	104	134
February	114	122	110	151	215	108	136
March	117	130	110	144	224	105	136
April	121	146	110	139	222	101	137
May	123	157	108	136	211	102	135
June	119	161	103	135	207	107	133
July	112	165	105	133	199	99	130
August	109	151	104	138	190	101	128
September	111	131	112	144	204	100	132
October	113	123	106	156	221	94	134
November	110	114	100	166	238	96	136
December	108	114	98	166	253	98	137
1924							
January	110	118	101	155	255	99	137
February	113	123	102	152	247	98	136
March	114	123	104	136	219	99	131
April	113	128	106	126	226	98	130
May	114	132	107	123	222	94	129
June	116	146	105	123	219	95	130
July	130	142	103	122	215	101	132
August	141	138	116	123	219	103	139
September	140	113	115	133	175	100	132
October	150	109	121	142	182	102	138
November	147	108	115	150	179	106	137
December	155	110	113	158	176	102	139
1925							
January	172	122	123	154	182	94	146
February	178	131	126	142	183	96	146
March	172	138	145	134	195	94	151
April	152	146	146	131	189	94	147
May	159	162	139	132	184	87	146
June	164	184	139	132	183	86	148
July	152	178	148	134	186	88	149
August	157	178	149	139	186	96	152
September	148	142	143	141	178	90	144
October	135	152	141	154	171	90	143
November	138	194	136	162	144	95	144
December	140	194	136	163	139	92	143

Division of Statistical and Historical Research. The commodities, by groups, are as follows: Grains—wheat, corn, oats, barley, rye, kafir; fruits and vegetables—apples, oranges, grapefruit, potatoes, sweet potatoes, beans, onions, cabbage; meat animals—beef cattle, calves, hogs, sheep, lambs; dairy and poultry products—chickens, eggs, butter (represents butter, butterfat, and cream), milk; cotton and cottonseed; unclassified—horses (represents horses and mules), hay, flax, tobacco, wool.

PRICES, COST OF LIVING, AND WAGES

TABLE 701.—*Index numbers of prices, cost of living, and wages, 1913–1925*

(1910–1914=100)

Calendar year	Farm prices, 30 commodities, August, 1909–July, 1914=100 [1]	Wholesale prices all commodities [2]	Retail prices, 22 articles of food [2]	Cost of living (32 cities) 1913=100 [3]	Farm labor [1]	Union wages per hour May 15, 1913=100 [2]	Earnings New York State factory workers, June, 1914=100 [4]
1913	100	102	103	100	104	100	----------
1914	102	100	106	[5] 103	101	102	[6] 100
1915	100	103	104	[5] 105	102	103	101
1916	117	129	117	[5] 118	112	107	114
1917	176	180	151	[5] 142	140	114	129
1918	200	198	174	[5] 174	176	133	160
1919	209	210	192	[5] 199	206	155	185
1920	205	230	210	[5] 200	239	199	222
1921	116	150	158	[5] 174	150	205	203
1922	124	152	146	[5] 170	146	195	197
1923	135	156	151	[5] 173	166	211	214
1924	134	152	150	[5] 172	166	228	218
1925	147	162	160	[5] 178	168	238	223
1925							
January	146	163	159	----------	156	----------	223
February	146	164	156	----------	----------	----------	220
March	151	164	156	----------	----------	----------	224
April	147	159	155	----------	163	----------	218
May	146	158	156	----------	----------	----------	221
June	148	160	160	174	----------	----------	220
July	149	163	165	----------	170	----------	220
August	152	163	165	----------	----------	----------	222
September	144	163	164	----------	----------	----------	223
October	143	160	167	----------	173	----------	225
November	144	160	172	----------	----------	----------	226
December	143	159	171	178	----------	----------	229

Division of Statistical and Historical Research.

[1] Bureau of Agricultural Economics.
[2] Bureau of Labor Statistics.
[3] Bureau of Labor Statistics. Food (22 items prior to 1921; 43 from Jan. 1921); heat and light (5 items); clothing (about 75 items varying from time to time); rent (representative number of moderate-priced houses); furniture and household articles (28 items), and 42 miscellaneous articles.
[4] New York State Department of Labor.
[5] December.
[6] June.

TABLE 702.—*Index numbers of wholesale prices, by groups of commodities, United States, 1909–1925*

[Year 1913=100]

Year	Farm products	Foods	Cloths and clothing	Fuel and lighting	Metals and metal products	Building materials	Chemicals and drugs	House-furnishing goods	Miscellaneous	All commodities
1909	97	97	98	84	93	95	100	92	130	97
1910	103	101	100	78	94	98	102	96	151	101
1911	93	97	96	76	89	98	102	93	111	93
1912	101	104	97	84	99	99	101	94	110	99
1913	100	100	100	100	100	100	100	100	100	100
1914	103	102	98	93	85	92	101	100	95	98
1915	104	105	98	88	99	94	134	100	95	101
1916	123	121	127	126	162	120	181	106	121	127
1917	190	167	175	169	231	157	202	125	148	177
1918	218	188	228	170	187	172	215	153	156	194
1919	231	207	253	181	162	201	169	184	175	206
1920	218	220	295	241	192	264	200	254	196	226
1921	124	144	180	199	129	165	136	195	128	147
1922	133	138	181	218	122	168	124	176	117	149
1923	141	144	200	185	144	189	131	183	123	154
1924	143	144	191	170	134	175	130	173	117	150
1925	158	158	190	175	130	175	134	169	135	159

Division of Crop and Livestock Estimates. Compiled from Bureau of Labor Statistics reports.

TABLE 703.—*Index numbers of wholesale prices of farm products, United States 1909–1925*

[Year 1913=100]

Calendar year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1909	91	93	93	96	99	99	99	97	99	101	104	107	97
1910	106	106	108	105	103	102	104	105	103	101	97	97	103
1911	96	91	89	88	88	90	93	95	95	95	96	96	93
1912	96	97	99	103	105	101	101	103	104	104	103	101	101
1913	98	98	98	99	97	98	99	100	103	103	103	103	100
1914	103	103	102	102	101	101	103	106	106	101	102	101	103
1915	104	105	104	104	105	101	104	103	101	106	104	105	104
1916	110	110	111	113	115	114	117	125	131	136	147	146	123
1917	152	157	166	184	196	195	196	202	202	207	212	207	190
1918	211	211	211	213	209	210	217	227	234	225	225	227	218
1919	224	216	224	230	234	226	241	242	225	227	237	242	231
1920	247	237	237	243	241	237	233	218	210	187	173	152	218
1921	143	133	127	117	118	114	119	123	124	124	121	120	124
1922	122	131	130	129	132	131	135	131	133	138	143	145	133
1923	143	142	143	141	139	138	135	139	144	144	146	145	141
1924	144	143	137	139	136	134	141	145	143	149	150	157	143
1925	163	162	161	153	152	155	162	163	160	155	154	152	158

Division of Crop and Livestock estimates. Compiled from Bureau of Labor Statistics reports.

TABLE 704.—*Index numbers of wholesale prices of all commodities, United States, 1909–1925*

[Year 1913=100]

Calendar year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1909	93	93	94	95	97	97	97	98	99	101	102	103	97
1910	102	102	105	105	103	102	102	102	100	97	95	96	101
1911	95	92	93	91	90	90	92	94	95	95	95	94	93
1912	95	96	97	100	100	99	99	100	101	101	101	101	99
1913	100	100	100	100	99	99	100	100	102	101	100	99	100
1914	98	99	98	98	97	97	97	101	102	97	97	97	98
1915	98	99	99	99	100	99	100	100	100	102	104	108	101
1916	113	115	119	121	122	123	123	126	130	136	146	149	127
1917	153	157	162	173	183	185	188	189	187	183	183	182	177
1918	184	186	187	190	190	191	196	200	204	202	203	202	194
1919	199	193	196	199	202	203	212	216	210	211	217	223	206
1920	233	232	234	245	247	243	241	231	226	211	196	179	226
1921	170	160	155	148	145	142	141	142	141	142	141	140	147
1922	138	141	142	143	148	150	155	155	153	154	156	156	149
1923	156	157	159	159	156	153	151	150	154	153	152	151	154
1924	151	152	150	148	147	145	147	150	149	152	153	157	150
1925	160	161	161	156	155	157	160	160	160	158	158	156	159

Division of Crop and Livestock Estimates. Compiled from Bureau of Labor Statistics reports.

TABLE 705.—*Index numbers of wholesale prices of agricultural commodities, United States, 1910–1925* [1]

[1910–1914=100]

Calendar year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1910	105	104	108	106	104	103	104	105	103	100	97	97	103
1911	96	92	90	88	89	90	92	96	97	98	98	96	94
1912	98	98	99	103	104	101	101	102	103	103	102	100	101
1913	97	97	98	99	97	98	100	101	103	102	102	100	99
1914	101	101	100	99	99	100	101	109	109	103	103	102	102
1915	104	107	105	106	107	103	105	103	100	104	103	105	104
1916	108	109	110	113	114	114	116	123	128	134	142	138	121
1917	143	148	156	174	187	184	184	191	192	196	199	197	179
1918	198	200	200	203	200	201	206	213	220	215	217	218	208
1919	216	209	217	224	227	219	227	228	216	216	223	231	221
1920	239	230	231	244	248	245	240	223	216	194	180	158	221
1921	151	142	141	132	129	126	130	133	133	130	127	125	133
1922	124	132	135	135	138	137	140	135	135	139	142	144	136
1923	141	142	144	144	142	141	138	139	146	147	146	146	143
1924	144	143	140	139	138	135	141	147	145	151	150	156	144
1925	161	159	162	155	154	157	161	162	162	156	155	153	158

Division of Crop and Livestock Estimates. Compiled from Bureau of Labor Statistics reports.

[1] Commodities originating on United States farms. Includes (1) farm products group, excepting hides and skins; (2) the food group, excepting cocoa beans, coffee, copra, fish, pepper, salt, tea, and cocoanut oil; (3) bran, cottonseed meal, linseed meal, and mill-feed middlings.

TABLE 706.—*Index numbers of wholesale prices of nonagricultural commodities, United States, 1910–1925* [1]

[1910–1914=100]

Calendar year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1910	103	103	104	107	106	104	103	102	100	98	97	98	102
1911	97	97	99	97	96	94	94	95	95	94	94	94	96
1912	95	96	97	100	100	100	100	101	102	103	103	104	100
1913	107	107	106	106	105	104	104	104	104	104	103	101	104
1914	100	100	101	100	98	97	96	96	97	95	94	95	97
1915	96	96	96	96	97	98	100	101	103	105	109	115	101
1916	122	126	132	134	136	137	136	135	137	143	155	166	138
1917	170	173	176	179	185	195	199	196	189	175	173	174	182
1918	177	178	180	183	186	188	192	193	195	196	196	193	188
1919	188	184	181	179	183	194	204	211	213	215	219	224	199
1920	236	244	247	254	254	250	251	249	246	237	221	208	241
1921	196	185	177	171	168	164	159	156	156	159	161	161	167
1922	158	156	155	156	164	168	177	182	179	176	175	175	168
1923	177	178	179	180	176	172	169	167	167	165	163	162	171
1924	164	166	166	164	162	159	158	159	158	158	160	163	162
1925	165	167	165	162	161	163	164	164	163	164	166	165	165

Division of Crop and Livestock Estimates. Compiled from Bureau of Labor Statistics reports.

[1] Commodities not originating on United States farms. Includes all commodities other than those in Table 705.

TABLE 707.—*Farms and farm land*

State and division	Number of farms			Land in farms					
				Acreage			Acres per farm		
	1925	1920	Change, per cent	1925	1920	Change, per cent	1925	1920	Change, per cent
				Acres	*Acres*				
Maine	50,033	48,227	3.7	5,164,738	5,425,968	−4.8	103	112	−8.0
New Hampshire	21,065	20,523	2.6	2,262,064	2,603,806	−13.1	107	127	−15.7
Vermont	27,786	29,075	−4.4	3,924,638	4,235,811	−7.3	141	146	−3.4
Massachusetts	33,454	32,001	4.5	2,367,629	2,494,477	−5.1	71	78	−9.0
Rhode Island	3,911	4,083	−4.2	310,993	331,600	−6.2	80	81	−1.2
Connecticut	23,240	22,655	2.6	1,832,110	1,898,980	−3.5	79	84	−6.0
New England	159,489	156,564	1.9	15,862,172	16,990,642	−6.6	99	109	−8.3
New York	188,752	193,195	−2.3	19,270,259	20,632,803	−6.6	102	107	−4.7
New Jersey	29,671	29,702	−.1	1,924,545	2,282,585	−15.7	65	77	−15.6
Pennsylvania	200,419	202,250	−.9	16,298,275	17,657,513	−7.7	81	87	−6.9
Middle Atlantic	418,842	425,147	−1.5	37,493,079	40,572,901	−7.6	90	95	−5.3
Ohio	244,702	256,695	−4.7	22,222,475	23,515,888	−5.5	91	92	−1.1
Indiana	195,787	205,126	−4.6	19,917,780	21,063,332	−5.4	102	103	−1.0
Illinois	225,597	237,181	−4.9	30,735,803	31,974,775	−3.9	136	135	.7
Michigan	192,326	196,447	−2.1	18,036,700	19,032,961	−5.2	94	97	−3.1
Wisconsin	193,144	189,295	2.0	21,851,733	22,148,223	−1.3	113	117	−3.4
East North Central	1,051,556	1,084,744	−3.1	112,764,491	117,735,179	−4.2	107	109	−.8
Minnesota	188,227	178,478	5.5	30,040,933	30,221,758	−.6	160	169	−5.3
Iowa	213,481	213,439	(1)	33,285,534	33,474,896	−.6	156	157	−.6
Missouri	260,484	263,004	−1.0	32,637,043	34,774,679	−6.1	125	132	−5.3
North Dakota	75,969	77,690	−2.2	34,326,905	36,214,751	−5.2	452	466	−3.0
South Dakota	79,535	74,637	6.6	32,006,868	34,636,491	−7.6	402	464	−13.4
Nebraska	127,727	124,417	2.7	42,024,129	42,225,475	−.5	329	339	−2.9
Kansas	165,879	165,286	.4	43,729,129	45,425,179	−3.7	264	275	−4.0
West North Central	1,111,302	1,096,951	1.3	248,050,571	256,973,229	−3.5	223	234	−4.7
Delaware	10,257	10,140	1.2	899,641	944,511	−4.8	88	93	−5.4
Maryland	49,601	47,908	2.3	4,439,648	4,757,909	−6.7	91	99	−8.1
District of Columbia	139	204	−31.9	3,813	5,668	−32.7	27	28	−3.6
Virginia	193,716	186,242	4.0	17,212,589	18,561,112	−7.3	89	100	−11.0
West Virginia	90,377	87,289	3.5	8,984,455	9,569,790	−6.1	99	110	−10.0

North Carolina	283,492	269,763	5.1	18,597,795	20,021,736	−7.1	66	74	−10.8
South Carolina	172,766	192,693	−10.3	10,644,126	12,426,675	−14.3	62	64	−3.1
Georgia	249,101	310,732	−19.8	21,964,436	25,441,061	−13.7	88	82	7.3
Florida	59,202	54,005	9.6	5,940,229	6,046,691	−1.8	100	112	−10.7
South Atlantic	1,108,051	1,158,976	−4.4	88,686,732	97,775,243	−9.3	80	84	−4.8
Kentucky	258,511	270,626	−4.5	19,915,166	21,612,772	−7.9	77	80	−3.8
Tennessee	252,669	252,774	(1)	17,911,026	19,510,856	−8.2	71	77	−7.8
Alabama	237,564	256,099	−7.2	16,742,572	19,576,856	−14.5	70	76	−7.9
Mississippi	257,227	272,101	−5.5	16,053,456	18,196,979	−11.8	62	67	−7.5
East South Central	1,005,971	1,051,600	−4.3	70,622,220	78,897,463	−10.5	70	75	−6.7
Arkansas	221,995	232,604	−4.6	15,681,916	17,456,750	−10.2	71	75	−5.3
Louisiana	132,451	135,463	−2.2	8,837,664	10,019,822	−11.8	67	74	−9.5
Oklahoma	197,215	191,988	2.7	30,933,893	31,951,934	−3.2	157	166	−5.4
Texas	465,642	436,033	6.8	109,798,247	114,020,621	−3.7	236	262	−9.9
West South Central	1,017,303	996,088	2.1	165,251,720	173,449,127	−4.7	162	174	−6.9
Montana	46,896	57,677	−18.7	32,740,442	35,070,656	−6.6	698	608	14.8
Idaho	40,582	42,106	−3.6	8,140,456	8,375,873	−2.8	201	199	1.0
Wyoming	15,509	15,748	−1.5	18,637,624	11,809,351	57.8	1,202	750	60.3
Colorado	58,025	59,934	−3.2	24,168,388	24,462,014	−1.2	416	408	2.0
New Mexico	31,687	29,844	6.2	27,927,525	24,409,633	14.4	881	818	7.7
Arizona	10,798	9,975	8.3	11,065,130	5,802,126	90.7	1,025	582	76.1
Utah	25,998	25,662	1.3	4,996,599	5,050,410	−1.1	192	197	−2.5
Nevada	3,913	3,163	23.7	4,192,169	2,357,163	77.8	1,071	745	43.8
Mountain	233,408	244,109	−4.4	131,868,333	117,337,226	12.4	565	481	17.5
Washington	73,266	66,288	10.5	12,608,234	13,244,720	−4.8	172	200	−14.3
Oregon	55,909	50,206	11.4	14,120,043	13,542,318	4.3	253	270	−6.2
California	136,413	117,670	15.9	27,565,440	29,365,667	−6.1	202	250	−19.0
Pacific	265,588	234,164	13.4	54,293,717	56,152,705	−3.3	204	240	−15.0
United States	6,371,510	6,448,343	−1.2	924,893,035	955,883,715	−3.2	145	148	−2.0

Division of Land Economics. Compiled from the Bureau of the Census reports; 1925 figures preliminary.

[1] Less than one-tenth of 1 per cent.

TABLE 708.—*Crop land*

State and division [1]	Total crop land		Harvested crops					Crop failure		Crop land lying idle or fallow	
	Acreage	Acres per farm	Acreage			Acres per farm		Acreage 1924	Acres per farm	Acreage 1924	Acres per farm
			1924	1919 [1]	Change, per cent	1924	1919				
	Acres		*Acres*	*Acres*				*Acres*		*Acres*	
Maine	1,659,762	33	1,605,611	1,648,521	−2.6	32	34	7,357	(2)	46,794	1
New Hampshire	542,846	26	523,386	541,495	−3.3	25	26	1,683	(2)	17,777	1
Vermont	1,148,821	41	1,124,484	1,189,020	−5.4	40	41	5,851	(2)	18,486	1
Massachusetts	682,607	20	625,068	657,082	−4.9	19	21	5,893	(2)	51,646	2
Rhode Island	76,003	19	69,368	74,316	−6.7	18	18	407	(2)	6,228	2
Connecticut	534,354	23	497,435	511,848	−2.8	21	23	5,140	(2)	31,779	1
New England	4,644,393	29	4,445,352	4,622,282	−3.8	28	30	26,331	(2)	172,710	1
New York	9,088,221	48	8,290,693	8,788,658	−5.7	44	45	91,241	(2)	706,287	4
New Jersey	1,126,051	65	907,754	1,093,174	−17.0	31	37	20,994	1	197,303	7
Pennsylvania	8,431,792	42	7,283,695	8,398,144	−13.3	36	42	103,229	1	1,044,868	5
Middle Atlantic	18,646,064	45	16,482,142	18,279,976	−9.8	39	43	215,464	1	1,948,458	5
Ohio	11,695,606	48	10,703,692	12,448,866	−14.0	44	48	286,514	1	705,400	3
Indiana	11,989,634	61	10,617,014	12,325,426	−13.9	54	60	362,063	2	1,010,557	5
Illinois	21,316,736	94	19,755,347	20,943,321	−5.7	88	88	646,600	3	914,789	4
Michigan	9,671,670	50	8,502,172	9,632,720	−11.7	44	49	173,930	1	995,568	5
Wisconsin	10,128,794	52	9,537,903	9,790,136	−2.6	49	52	268,404	1	322,487	2
East North Central	64,802,440	62	59,116,128	65,140,469	−9.2	56	60	1,737,511	2	3,948,801	4
Minnesota	18,645,920	99	17,924,419	16,781,770	6.8	95	94	195,681	1	525,820	3
Iowa	21,991,893	103	21,458,579	21,216,389	1.1	101	99	424,770	2	108,544	1
Missouri	15,272,361	59	13,714,205	15,983,353	−14.2	53	61	686,336	3	871,820	3
North Dakota	21,864,121	288	19,877,052	19,649,375	1.2	262	253	322,399	4	1,664,670	22
South Dakota	16,430,578	207	15,783,078	15,092,743	4.6	198	202	346,721	4	300,779	4
Nebraska	20,699,180	162	19,809,826	19,295,288	2.7	155	155	592,996	5	296,358	2
Kansas	23,895,007	144	22,380,118	22,279,272	.5	135	135	916,324	6	598,565	4
West North Central	138,799,060	125	130,947,277	130,298,190	.5	118	119	3,485,227	3	4,366,556	4
Delaware	518,859	51	404,209	494,901	−18.3	39	49	6,615	1	108,035	11
Maryland	2,227,515	45	1,777,513	2,110,741	−15.8	36	44	36,982	1	413,020	8
District of Columbia	2,371	17	2,197	2,288	−4.0	16	11	34	(2)	140	1
Virginia	5,368,188	28	3,968,570	5,038,571	−21.2	20	27	113,562	1	1,286,056	7

West Virginia	1,921,092	21	1,676,525	2,131,903	−21.4	19	24	27,754	(2)	216,813	2
North Carolina	6,832,320	24	5,548,808	6,178,552	−10.2	20	23	146,038	1	1,137,474	4
South Carolina	5,009,737	29	4,268,117	5,572,538	−23.4	25	29	92,450	1	649,170	4
Georgia	10,696,685	43	8,118,651	11,415,550	−28.9	33	37	111,997	(2)	2,466,037	10
Florida	2,022,284	34	1,369,050	1,553,615	−11.9	23	29	35,442	1	617,791	10
South Atlantic	34,599,051	31	27,133,640	34,493,650	−21.3	24	30	570,875	1	6,894,536	6
Kentucky	6,827,188	26	5,182,577	6,773,958	−23.5	20	25	131,949	1	1,512,602	6
Tennessee	7,574,206	30	6,190,928	7,153,509	−13.5	25	28	112,107	(2)	1,271,171	5
Alabama	7,748,765	32	6,630,831	7,836,064	−15.4	28	31	115,310	(2)	972,624	4
Mississippi	6,057,079	26	5,604,858	6,603,072	−15.1	22	24	158,282	1	893,939	3
East South Central	28,777,238	29	23,609,194	28,366,603	−16.8	23	27	517,648	1	4,650,396	5
Arkansas	7,291,449	33	6,184,251	6,715,048	−7.9	28	29	180,116	1	927,082	4
Louisiana	4,203,690	32	3,464,906	4,022,244	−13.9	26	30	216,038	2	582,746	4
Oklahoma	15,811,578	80	14,501,461	15,339,040	−5.5	74	80	765,087	4	545,030	3
Texas	29,512,202	63	27,112,158	25,467,351	6.5	58	58	1,335,660	3	1,004,384	2
West South Central	56,878,919	56	51,262,776	51,543,683	−.5	50	52	2,496,901	2	3,119,242	3
Montana	8,471,316	181	6,412,079	3,911,989	63.9	137	68	309,984	7	1,749,253	37
Idaho	3,716,066	92	2,581,617	2,784,908	−7.3	64	66	371,980	9	762,469	19
Wyoming	1,880,269	121	1,575,025	1,193,225	32.0	102	76	150,981	10	154,263	10
Colorado	7,200,199	124	5,948,750	5,327,378	11.7	103	89	832,876	14	418,573	7
New Mexico	1,799,151	57	1,345,705	1,179,193	14.1	42	40	264,030	8	189,416	6
Arizona	578,578	54	457,280	458,572	−.3	42	46	29,320	3	91,978	9
Utah	1,425,138	55	1,024,523	1,059,729	−3.3	39	41	100,640	4	299,975	12
Nevada	533,699	136	362,552	392,327	−7.6	93	124	121,576	34	39,571	10
Mountain	25,604,416	110	19,707,531	16,307,321	20.9	84	67	2,191,387	9	3,705,498	16
Washington	6,083,649	83	3,262,824	4,228,636	−22.8	45	64	491,268	7	2,329,557	32
Oregon	4,229,947	76	2,591,829	2,968,458	−12.7	46	59	460,098	8	1,178,020	21
California	8,402,195	62	5,722,454	6,840,656	−16.3	42	58	985,799	7	1,693,942	12
Pacific	18,715,791	70	11,577,107	14,037,750	−17.5	44	60	1,937,165	7	5,201,519	20
United States	391,467,372	61	344,281,147	363,089,933	−5.2	54	56	13,178,509	2	34,007,716	5

Division of Land Economics. Compiled from the Bureau of the Census reports; 1924 figures preliminary.

[1] Acreage of harvested crops for 1919 is the total of the individual crops with allowance for duplication of corn for forage with corn for grain; for 1924 the figures are the results of a direct census inquiry.

[2] Less than one acre.]

TABLE 709.—*Pasture land: Acreage in farms, 1924*

State and division	Total pasture		Pasture land suitable for crops		Woodland pasture		Other pasture	
	Acreage	Acres per farm	Acreage	Acres per farm	Acreage	Acres per farm	Acreage	Acres per farm
	Acres		*Acres*		*Acres*		*Acres*	
Maine	1,744,285	35	195,768	4	975,545	19	572,972	11
New Hampshire	1,087,385	52	89,673	4	779,501	37	218,211	10
Vermont	2,175,653	78	253,015	9	1,030,810	37	891,828	32
Massachusetts	876,892	26	95,162	3	482,453	14	299,277	9
Rhode Island	110,985	28	33,599	9	50,093	13	27,293	7
Connecticut	784,779	34	104,987	5	356,652	15	323,140	14
New England	6,779,979	43	772,204	5	3,675,054	23	2,332,721	15
New York	7,402,578	39	2,080,744	11	2,023,332	11	3,298,502	17
New Jersey	335,057	11	185,477	6	43,610	1	105,970	4
Pennsylvania	4,583,860	23	1,701,866	8	1,397,597	7	1,484,397	7
Middle Atlantic	12,321,495	29	3,968,087	9	3,464,539	8	4,888,869	12
Ohio	8,138,585	33	3,997,087	16	1,854,319	8	2,287,179	9
Indiana	5,693,510	29	2,707,230	14	1,882,395	10	1,103,885	6
Illinois	7,282,964	32	4,008,157	18	1,897,166	8	1,377,641	6
Michigan	5,723,206	30	1,757,004	9	2,407,170	13	1,559,032	8
Wisconsin	8,671,556	45	1,703,243	9	4,431,416	23	2,536,897	13
East North Central	35,509,821	34	14,172,721	13	12,472,466	12	8,864,634	8
Minnesota	7,895,420	42	2,162,216	11	3,549,866	19	2,183,338	12
Iowa	9,486,036	44	5,156,570	24	1,970,588	9	2,358,878	11
Missouri	13,299,394	51	6,859,143	26	4,779,925	18	1,660,326	6
North Dakota	8,940,686	118	3,110,825	41	337,240	4	5,492,621	72
South Dakota	13,795,956	173	6,146,196	77	289,051	4	7,360,709	93
Nebraska	19,482,225	152	4,379,432	34	657,525	5	14,445,268	113
Kansas	17,880,528	108	7,799,091	47	652,047	4	9,429,390	56
West North Central	90,780,245	82	35,613,473	32	12,236,242	11	42,930,530	39
Delaware	101,633	10	78,868	8	10,386	1	12,379	1
Maryland	893,510	18	525,773	11	187,183	4	180,554	4
District of Columbia	503	4	262	2	96	1	145	1
Virginia	5,290,994	27	2,967,815	15	1,331,719	7	991,460	5
West Virginia	4,293,042	47	1,726,431	19	905,394	10	1,661,217	18
North Carolina	2,818,748	10	881,895	3	1,388,459	5	548,394	2
South Carolina	1,637,431	9	310,566	2	1,008,359	6	318,506	2

Georgia	3,813,327	15	812,555	3	2,324,087	9	676,685	3
Florida	1,510,070	25	257,788	4	814,782	14	437,500	7
South Atlantic	20,359,258	18	7,561,953	7	7,970,465	7	4,826,840	4
Kentucky	7,748,288	30	5,501,740	21	1,207,842	5	1,038,706	4
Tennessee	4,692,667	19	2,591,199	10	1,356,867	5	744,601	3
Alabama	3,536,406	15	1,127,672	5	1,921,815	8	486,919	2
Mississippi	4,302,950	17	1,414,421	5	2,036,111	8	852,418	3
East South Central	20,280,311	20	10,635,032	11	6,522,635	6	3,122,644	3
Arkansas	3,065,008	14	956,162	4	1,676,965	8	431,881	2
Louisiana	1,713,731	13	786,003	6	677,327	5	250,401	2
Oklahoma	13,093,221	66	3,877,880	20	3,022,717	15	6,192,624	31
Texas	75,502,350	162	14,668,367	32	17,180,001	37	43,653,982	94
West South Central	93,374,310	92	20,288,412	20	22,557,010	22	50,528,888	50
Montana	22,723,333	484	4,124,850	88	1,311,615	28	17,286,868	369
Idaho	3,576,138	88	362,220	9	647,448	16	2,566,470	63
Wyoming	16,284,832	1,050	2,188,467	141	370,749	24	13,725,616	885
Colorado	15,310,024	264	5,113,475	88	1,146,647	20	9,049,902	156
New Mexico	24,104,360	761	5,358,041	169	2,144,857	68	16,601,462	524
Arizona	10,100,868	935	141,381	13	413,995	38	9,545,492	884
Utah	3,062,648	118	138,512	5	97,357	4	2,826,779	109
Nevada	3,070,899	785	82,079	21	77,371	20	2,911,449	744
Mountain	98,233,102	421	17,509,025	75	6,210,039	27	74,514,038	319
Washington	5,200,686	71	444,060	6	1,317,170	18	3,439,456	47
Oregon	8,790,656	157	599,787	11	2,144,263	38	6,046,606	108
California	16,907,167	124	3,036,845	22	4,227,435	31	9,642,887	71
Pacific	30,898,509	116	4,080,692	15	7,688,868	29	19,128,949	72
United States	408,537,030	64	114,601,599	18	82,797,318	13	211,138,113	33

Division of Land Economics. Compiled from the Bureau of the Census reports; 1924 figures preliminary.

TABLE 710.—*Woodland and other land in farms*

State and division	Woodland						Land, other than crops, pasture or forest land (farmsteads, lanes, waste land, etc.)	
	Acreage			Acres per farm		Per cent pastured 1924	Acreage, 1924	Acres per farm 1924
	1924	1919	Change per cent	1924	1919			
	Acres	*Acres*					*Acres*	
Maine	2,478,888	2,447,597	1.3	50	51	39.4	257,348	5
New Hampshire	1,316,244	1,299,838	1.3	62	63	59.2	95,090	5
Vermont	1,548,179	1,428,309	8.4	56	49	66.6	82,795	3
Massachusetts	1,114,672	1,030,386	8.2	33	32	43.3	175,911	5
Rhode Island	144,924	130,462	11.1	37	32	34.7	29,174	7
Connecticut	729,923	683,719	6.8	31	30	48.9	139,706	6
New England	7,332,830	7,020,311	4.5	46	45	50.1	780,024	5
New York	3,804,412	4,160,567	−8.6	20	22	53.2	998,380	5
New Jersey	297,152	454,768	−34.7	10	15	14.7	209,895	7
Pennsylvania	3,533,978	4,043,902	−12.6	18	20	39.5	1,146,242	6
Middle Atlantic	7,635,542	8,659,237	−11.8	18	20	45.4	2,354,517	6
Ohio	2,827,499	3,198,929	−11.6	12	12	65.6	1,415,194	6
Indiana	2,743,427	3,141,042	−12.7	14	15	68.6	1,373,604	7
Illinois	2,635,808	3,102,579	−15.0	12	13	72.0	1,397,161	6
Michigan	3,301,801	3,217,000	2.6	17	16	72.9	1,747,193	9
Wisconsin	5,648,127	5,401,910	4.6	29	29	78.5	1,834,672	9
East North Central	17,156,572	18,061,460	−5.0	17	16	72.7	7,768,124	7
Minnesota	4,753,933	4,482,656	5.7	25	25	74.9	2,312,526	12
Iowa	2,213,283	2,295,274	−3.6	10	11	89.0	1,564,910	7
Missouri	7,466,009	8,553,857	−13.4	28	33	64.5	1,439,204	6
North Dakota	510,762	679,836	−24.9	7	9	66.0	3,348,576	44
South Dakota	401,775	536,183	−25.1	5	7	71.9	1,667,640	21
Nebraska	883,763	900,933	−1.9	7	7	74.4	1,616,466	13
Kansas	1,006,111	1,313,093	−23.4	6	8	64.8	1,599,530	10
West North Central	17,158,656	18,761,832	−8.5	15	17	71.3	13,548,852	12
Delaware	198,566	222,658	−10.8	19	22	5.2	90,969	9
Maryland	1,136,493	1,327,221	−14.4	23	28	16.5	369,313	8
District of Columbia	276	828	−66.6	2	4	34.8	759	5
Virginia	6,854,617	7,907,352	−13.3	35	42	19.4	1,030,479	5
West Virginia	3,169,025	3,469,444	−8.7	35	40	28.6	506,690	6

North Carolina	8,479,138	10,299,547	−17.7	30	33	16.4	1,856,048	7
South Carolina	3,592,365	5,302,575	−32.3	21	28	28.1	1,412,952	8
Georgia	7,002,160	10,491,848	−32.7	28	34	32.9	2,716,351	11
Florida	2,477,893	2,780,790	−10.9	42	51	32.9	744,764	13
South Atlantic	32,970,563	41,802,263	−21.1	30	36	24.2	8,728,325	8
Kentucky	4,835,768	6,018,280	−19.6	19	22	25.0	1,711,764	7
Tennessee	5,580,047	7,080,169	−21.2	22	28	24.3	1,420,973	6
Alabama	5,786,397	8,301,177	−30.5	24	32	33.3	1,642,819	7
Mississippi	5,485,117	7,014,898	−21.8	21	26	37.1	1,644,427	6
East South Central	21,667,329	28,414,524	−23.7	22	27	30.1	6,419,977	6
Arkansas	5,468,598	7,396,028	−26.1	25	32	30.7	1,533,831	7
Louisiana	2,417,719	3,614,040	−33.1	18	27	28.0	1,119,851	8
Oklahoma	3,480,795	4,206,171	−17.2	18	22	86.8	1,571,016	8
Texas	18,770,251	14,532,913	29.2	40	33	91.5	3,193,445	7
West South Central	30,137,358	29,749,152	1.3	30	30	74.8	7,418,143	7
Montana	1,545,368	1,646,462	−6.1	33	29	84.9	1,312,040	28
Idaho	744,870	820,876	−9.3	18	19	86.9	750,830	18
Wyoming	445,161	421,806	5.5	29	27	83.3	398,111	26
Colorado	1,385,163	1,415,420	−2.1	24	24	82.8	1,419,649	24
New Mexico	2,314,995	1,817,460	27.4	73	61	92.7	1,853,876	58
Arizona	461,392	523,648	−11.9	43	52	89.7	338,287	31
Utah	161,228	212,762	−24.2	6	8	60.4	444,942	17
Nevada	86,584	28,637	202.4	22	9	89.4	578,358	148
Mountain	7,144,761	6,887,071	3.6	31	28	86.9	7,096,093	30
Washington	1,855,583	1,813,061	2.3	25	27	71.0	785,486	11
Oregon	2,663,904	2,309,596	15.3	48	46	80.5	579,799	10
California	4,674,924	4,252,287	9.9	34	36	90.4	1,808,589	13
Pacific	9,194,411	8,374,944	8.9	35	36	83.6	3,173,874	12
United States	150,398,022	167,730,794	−10.3	24	26	55.1	57,287,929	9

Division of Land Economics. Compiled from the Bureau of the Census reports. 1924 figures preliminary.

TABLE 711.—*Bankruptcy among farmers: Cases concluded in fiscal years ended June 30, 1922–1925*

State	1922			1923			1924			1925		
		Farmers			Farmers			Farmers			Farmers	
	Total	Number	Per cent of all cases	Total	Number	Per cent of all cases	Total	Number	Per cent of all cases	Total	Number	Per cent of all cases
Maine	431	51	11.8	658	94	14.3	904	136	15.0	871	103	11.8
New Hampshire	123	7	5.7	76	12	15.8	130	6	4.6	86	5	5.8
Vermont	166	21	12.7	100	20	20.0	101	27	26.7	205	39	19.0
Massachusetts	901	10	1.1	1,592	5	.3	1,476	11	.7	1,378	7	.5
Rhode Island	72	1	1.4	166	------	------	123	1	.8	132	2	1.5
Connecticut	201	2	1.0	399	15	3.8	660	15	2.3	600	13	2.2
New York	2,076	38	1.8	3,128	96	3.1	3,633	105	2.9	5,376	104	1.9
New Jersey	277	4	1.4	502	4	.8	535	14	2.6	719	16	2.2
Pennsylvania	571	35	6.1	1,165	48	4.1	1,218	52	4.3	1,253	70	5.6
Ohio	680	64	9.4	1,279	156	12.2	1,531	209	13.7	1,813	214	11.8
Indiana	245	59	24.1	333	84	25.2	403	101	25.1	360	97	26.9
Illinois	1,012	81	8.0	1,714	192	11.2	1,923	194	10.1	1,596	190	11.9
Michigan	434	11	2.5	909	27	3.0	814	44	5.4	868	46	5.3
Wisconsin	364	32	8.8	696	110	15.8	914	136	14.9	1,055	213	20.2
Minnesota	651	189	29.0	1,023	291	28.5	1,452	430	29.6	1,586	369	23.3
Iowa	704	368	52.3	935	489	52.3	1,317	663	50.3	1,707	861	50.4
Missouri	403	61	15.1	560	105	18.8	1,106	238	21.5	1,482	287	19.4
North Dakota	302	237	78.5	749	615	82.1	1,047	782	74.7	837	629	75.1
South Dakota	73	38	52.1	232	148	63.8	373	236	63.3	556	352	63.3
Nebraska	184	60	32.6	259	132	51.0	515	172	33.4	525	178	33.9
Kansas	328	113	34.5	588	225	38.3	737	264	35.8	670	213	31.8
Delaware	35	3	8.6	29	2	6.9	46	6	13.0	40	8	20.0
Maryland	159	17	10.7	170	37	21.8	307	42	13.7	175	38	21.7
Virginia	726	40	5.5	1,320	87	6.6	1,167	84	7.2	1,407	95	6.8
West Virginia	268	12	4.5	328	7	2.1	348	11	3.2	414	19	4.6
North Carolina	154	13	8.4	215	16	7.4	319	36	11.3	308	45	14.6
South Carolina	115	1	.9	246	24	9.8	416	36	8.7	230	26	11.3
Georgia	2,344	588	25.1	2,918	772	26.5	3,386	848	25.0	3,041	798	26.2
Florida	145	4	2.8	348	14	4.0	365	22	6.0	186	8	4.3
Kentucky	222	43	19.4	587	88	15.0	605	104	17.2	682	108	15.8
Tennessee	1,133	46	4.1	1,600	118	7.4	1,669	112	6.7	1,844	109	5.9
Alabama	2,461	100	4.1	1,977	181	9.2	2,125	218	10.3	2,248	242	10.8
Mississippi	265	12	4.5	462	33	7.1	582	49	8.4	542	58	10.7
Arkansas	266	72	27.1	454	76	16.7	560	104	18.6	338	85	25.1
Louisiana	219	32	14.6	423	129	30.5	488	171	35.0	362	77	21.3
Oklahoma	240	38	15.8	551	81	14.7	956	138	14.4	921	145	15.7
Texas	628	122	19.4	1,208	253	20.9	1,523	375	24.6	1,129	343	30.4
Montana	363	215	59.2	611	366	59.9	855	551	64.4	703	460	65.4
Idaho	169	79	46.8	292	160	54.8	414	231	55.8	468	260	55.6
Wyoming	42	12	28.6	56	14	25.0	102	36	35.3	143	48	33.6
Colorado	249	77	30.9	366	118	32.2	341	128	37.5	686	220	32.1
New Mexico	37	3	8.1	17	3	17.7	144	28	19.4	95	27	28.4
Arizona	40	9	22.5	105	37	35.2	82	31	37.8	62	19	30.6
Utah	177	22	12.4	235	32	13.6	302	35	11.6	382	32	8.4
Nevada	21	2	9.5	2	------	------	5	0	------	24	5	20.8
Washington	377	49	13.0	727	131	18.0	874	213	24.4	824	196	23.8
Oregon	370	33	8.9	717	110	15.3	799	91	11.4	928	100	10.8
California	1,004	110	11.0	1,150	183	15.9	1,760	236	13.4	2,296	293	12.8
United States	22,462	3,236	14.4	34,236	5,940	17.4	41,524	7,772	18.7	44,236	7,872	17.8

Division of Agricultural Finance. Compiled from annual reports of the Attorney General.

TABLE 712.—*Total refrigerated space: All cold storages, including meat-packing establishments reporting to the Bureau of Agricultural Economics, October 1, 1925*

State	Concerns	Cubic feet of space held at temperatures of—				Total space
		10° F. and below	11 to 29° F., inclusive	30 to 44° F., inclusive	45° F. and above	
						Cu. ft.
Alabama	4	30,652	75,258	1,157,945		1,263,855
Alaska	5	56,592	593,872	26,888	2,000	679,352
Arizona	4	15,360	3,900	473,436		492,696
Arkansas	7	33,750		1,396,546	5,823	1,436,119
California	74	1,661,559	2,385,160	17,471,385	304,246	21,822,350
Colorado	17	1,075,091	225,454	4,704,383	402,962	6,407,890
Connecticut	6	160,400	132,544	1,850,837	118,000	2,261,781
District of Columbia	4	252,617	1,822	2,304,931	22,656	2,582,026
Florida	10	48,010	109,695	617,074	12,171	786,950
Georgia	19	122,812	377,003	2,288,556	14,210	2,802,581
Idaho	12	34,451	45,041	404,178	25,900	509,570
Illinois	86	18,652,985	17,397,433	95,301,476	11,027,439	142,379,333
Indiana	42	450,646	1,806,601	13,193,005	1,237,182	16,687,434
Iowa	38	1,912,080	2,718,421	16,918,532	2,156,655	23,705,688
Kansas	31	2,006,940	6,278,598	28,708,375	5,147,951	42,141,864
Kentucky	15	377,400	343,097	4,236,390	72,814	5,029,701
Louisiana	7	140,200	135,363	1,903,470	77,177	2,256,210
Maine	8	540,732	3,606	839,092	4,907	1,388,337
Maryland	21	560,985	288,149	3,389,916	146,438	4,385,488
Massachusetts	39	6,580,939	2,055,231	14,891,725	344,408	23,872,303
Michigan	33	1,196,796	527,222	6,608,145	80,000	8,412,163
Minnesota	27	2,253,127	2,285,557	14,999,603	2,219,072	21,757,359
Missouri	50	3,416,764	1,295,237	29,271,878	1,835,656	35,819,535
Montana	6	31,080	57,488	173,616	9,328	271,512
Nebraska	19	3,653,522	890,862	17,927,664	1,394,654	23,866,702
New Jersey	30	3,260,811	590,116	9,389,060	403,231	13,643,218
New York	180	10,107,787	5,811,300	57,715,051	1,778,273	75,412,411
North Carolina	8	18,000	50,000	640,102	6,600	714,702
Ohio	92	2,148,983	1,120,968	19,270,427	897,600	23,437,978
Oklahoma	13	599,298	595,182	6,716,366	1,043,919	8,954,765
Oregon	29	436,797	1,564,381	3,580,023	136,373	5,717,574
Pennsylvania	108	2,961,267	2,050,607	19,489,301	606,694	25,107,869
Rhode Island	3	330,888	400,000	822,928		1,553,816
South Dakota	7	267,806	442,481	2,600,858	387,961	3,699,106
Tennessee	20	301,090	159,842	5,461,820	125,612	6,048,364
Texas	55	800,583	2,422,448	9,731,594	1,780,463	14,735,088
Utah	7	125,441	87,490	1,243,005	142,000	1,597,936
Virginia	28	318,346	597,827	12,514,706	308,280	13,739,159
Washington	66	1,042,911	2,636,232	16,232,030	838,589	20,749,762
West Virginia	17	7,840	90,176	3,047,771	61,163	3,206,950
Wisconsin	62	695,350	628,593	11,811,390	1,269,029	14,404,362
All other States	14	33,094	134,176	686,920	71,701	925,891
Total	1,323	68,721,782	59,414,433	462,012,398	36,519,137	626,667,750

Cold Storage Report Section.

91044°—26——88

TABLE 713.—*Farmers' business organizations by kinds and States, December, 1925*

State and division	Cotton and cotton products	Dairy products	Forage crops	Fruits and vegetables	Grains	Livestock	Nuts	Poultry and poultry products	Tobacco	Wool	Miscellaneous selling	Merchandise Farmers' stores)	Miscellaneous buying	Total
Maine		7		34				1		1	8	23	8	82
New Hampshire		4			1						2	2	5	14
Vermont		42		1	1	1					12		4	61
Massachusetts		18		5	1				1	2	4		17	48
Rhode Island		2									1		4	7
Connecticut		7		5				2	2		31			47
New England		80		45	3	1		3	3	3	58	25	38	269
New York		86	2	84	4	2		2	1	32	18	12	43	286
New Jersey				5							3	2	10	20
Pennsylvania		57		20	3	1		1	4	8	24	9	89	216
Middle Atlantic		143	2	109	7	3		3	5	40	45	23	142	522
Ohio		29		21	205	74		1	2	3	17	14	19	395
Indiana		25		24	138	91		1		6	13	14	18	330
Illinois	1	39		22	432	273		1		1	22	22	9	822
Michigan		87		60	92	82		1		1	77	18	18	436
Wisconsin		716		26	57	154		1	4	1	61	58	14	1,092
East North Central	1	906		153	924	674		5	6	12	190	126	78	3,075
Minnesota		578		53	301	300		11		5	22	105	8	1,383
Iowa		226		3	368	374		1		1	17	92	12	1,094
Missouri	5	11		31	163	117		8		1	133	62	6	537
North Dakota		16		13	332	60				2	9	26	2	460
South Dakota		25		8	235	94				2	4	25	4	397
Nebraska		11		5	344	37					10	77	4	488
Kansas		7		3	347	23				2	8	73	3	466
West North Central	5	874		116	2,090	1,005		20		13	203	460	39	4,825
Delaware		1		5							2		4	12
Maryland		2		4	2				1		2	1	4	16
District of Columbia		1												1
Virginia		13	1	14	2	12	1			1	13	15	24	96
West Virginia				9		18		1		2	6		6	42
North Carolina	6	5		11	1				2		10	7	8	50
South Carolina	4		1	11							1		1	18

Georgia	15			10			3	1	1		12	2	2	46
Florida		1		98							2	2	1	104
South Atlantic	25	23	2	162	5	30	4	2	4	3	42	27	50	385
Kentucky		6		7	1	8		4	2	3	9	11	5	56
Tennessee	3	25	1	36	2	8	1	2	3	4	19	5	2	111
Alabama	12	3	1	22		6					15		4	63
Mississippi	3	3		17				2			22			47
East South Central	18	37	2	82	3	22	1	8	5	7	65	16	11	277
Arkansas	6			70	2			2			7	11	3	101
Louisiana	2	1		20	5				1		7	1	1	38
Oklahoma	11	2		8	89	4					9	17	3	143
Texas	49	5	2	49	16	3	1	9			22	12	4	172
West South Central	68	8	2	147	112	7	1	11	1		45	41	11	454
Montana		6		4	64	12		2		1	5	7	1	102
Idaho		9		18	12			1		2	9	7	1	59
Wyoming		1		2	6	1		1		1	3	2	1	18
Colorado		6		34	40	7				2	7	4	1	101
New Mexico	1	1	2	2	5	1		1			6		1	20
Arizona	3	1	1	5	1					1	6		2	20
Utah		9		11	3			3		3	5	5	2	41
Nevada					1						1			2
Mountain	4	33	3	76	132	21		8		10	42	25	9	363
Washington		24	1	55	42			2		1	5	38	4	172
Oregon		50	1	37	9	2	3	2		1	8	5	3	121
California		19	3	255	11	5	30	7		1	4	9	6	350
Pacific		93	5	347	62	7	33	11		3	17	52	13	643
United States	121	2,197	16	1,237	3,338	1,770	39	71	24	91	713	795	391	10,803

Division of Agricultural Cooperation.

TABLE 714.—*Associations reporting number of members, by kinds and States, preliminary, 1925*

State and division	Cotton and cotton products		Dairy products		Forage		Fruits and vegetables		Grain		Livestock		Nuts	
	Associations	Members	Associations	Members	Associations	Members	Associations	Members	Associations	Members	Associations	Members	Associations	Members
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Maine			7	4,615			10	413						
New Hampshire			4	398					1	123				
Vermont			34	3,722			1	40	1	12	1	37		
Massachusetts			16	22,417			4	446	1	32				
Rhode Island			2	157										
Connecticut			7	3,201			3	61						
New England			70	34,510			18	960	3	167	1	37		
New York			73	78,859	1	154	40	4,770	4	931	1	50		
New Jersey							6	2,844						
Pennsylvania			54	34,372			18	1,055	3	362				
Middle Atlantic			127	113,231	1	154	64	8,669	7	1,293	1	50		
Ohio			35	25,803			11	1,022	196	31,077	57	24,393		
Indiana			21	4,919			8	591	130	35,269	74	21,317		
Illinois	1	25	38	18,420			9	722	407	46,480	236	43,676		
Michigan			85	26,569			13	1,801	48	9,665	67	14,180		
Wisconsin			580	43,216			18	2,143	55	9,073	120	20,334		
East North Central	1	25	759	118,927			59	6,279	836	131,564	554	123,900		
Minnesota			86	13,971			42	4,495	264	47,632	248	42,177		
Iowa			220	32,766			2	270	315	42,933	302	43,773		
Missouri	5	990	9	1,355			27	4,116	147	19,761	91	83,641		
North Dakota			15	1,318			8	523	309	44,168	46	4,725		
South Dakota			23	7,974			2	156	213	30,447	68	12,519		
Nebraska			11	7,232			5	581	320	40,763	27	4,638		
Kansas			7	1,353			3	140	318	59,914	19	4,868		
West North Central	5	990	371	65,969			89	10,281	1,886	285,618	801	196,341		
Delaware			1	17			5	353						
Maryland			2	3,731			3	1,003	2	760				
District of Columbia			1	1,000										
Virginia			13	2,084	1	80	12	7,867	1	55	10	1,882	1	5,238
West Virginia							7	485			16	1,668		
North Carolina	6	37,527	5	323			9	576	1	20				

South Carolina	4	15,266			1	125	5	731						
Georgia	10	49,735					8	4,155					3	9,164
Florida			1	76			23	1,565						
South Atlantic	20	102,528	23	7,231	2	205	72	16,735	4	835	26	3,550	4	14,402
Kentucky			6	7,068			6	1,700	1	70	6	1,048		
Tennessee	2	9,174	24	3,848	1	200	27	3,300	2	109	7	1,830	1	275
Alabama	11	28,103	3	200	1	255	8	1,494			4	750	1	125
Mississippi	2	21,883	3	126			1	20						
East South Central	15	59,160	36	11,242	2	455	42	6,514	3	179	17	3,628	2	400
Arkansas	4	19,468					40	3,845	2	1,196				
Louisiana	2	6,868	1	20			9	2,306	4	2,011				
Oklahoma	10	57,153	2	174			8	1,277	82	22,831	3	664		
Texas	40	55,881	5	581	1	15	32	1,377	15	6,878	1	100	1	30
West South Central	56	139,370	8	775	1	15	89	8,805	103	32,916	4	764	1	30
Montana			6	337			4	450	60	16,847	10	1,067		
Idaho			9	4,107			15	2,117	12	1,338				
Wyoming			1	66			2	110	4	409	1	18		
Colorado			6	771			14	4,866	38	10,753	4	428		
New Mexico	1	330	1	54	2	220	2	78	3	191				
Arizona	3	242	1	388	1	300	2	150	1	285				
Utah			7	508			11	9,503	3	382				
Nevada									1	44				
Mountain	4	572	31	6,231	3	520	50	17,274	122	30,249	15	1,513		
Washington			16	3,839	1	1,203	28	5,454	40	2,601				
Oregon			22	3,762	1	265	25	3,276	9	546	2	184	2	225
California			18	7,986	3	287	49	42,322	8	1,492	3	1,919	5	3,816
Pacific			56	15,587	5	1,755	102	51,052	57	4,639	5	2,103	7	4,041
United States	101	302,645	1,481	373,703	14	3,104	585	126,569	3,021	487,460	1,424	331,886	14	18,873

TABLE 714.—*Associations reporting number of members, by kinds and States, preliminary, 1925*—Continued

State and division	Poultry and poultry products		Tobacco		Wool and mohair		Miscellaneous selling		Retailing		Miscellaneous buying		Grand total	
	Associations	Members	Associations	Members	Associations	Members	Associations	Members	Associations	Members	Associations	Members	Associations	Members
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Maine	1	530			1	576	6	849	22	5,027	7	771	54	12,781
New Hampshire							1	800	2	140	3	875	11	2,336
Vermont							5	1,264			3	1,126	45	6,201
Massachusetts					1	63	4	256			15	15,745	41	38,959
Rhode Island							1	113			3	197	6	467
Connecticut	2	150	1	4,198							27	1,438	40	9,048
New England	3	680	1	4,198	2	639	17	3,282	24	5,167	58	20,152	197	69,792
New York	1	427	1	280	4	155	15	2,480	11	1,170	37	4,104	188	93,380
New Jersey							3	1,437	2	217	9	1,586	20	6,084
Pennsylvania			3	396	8	909	19	2,200	9	1,576	62	10,421	176	51,291
Middle Atlantic	1	427	4	676	12	1,064	37	6,117	22	2,963	108	16,111	384	150,755
Ohio	1	1,800	1	4,950	3	11,679	17	4,137	12	1,999	15	3,093	348	109,953
Indiana	1	152			5	4,535	10	3,181	12	1,545	15	2,138	276	73,647
Illinois	1	35			1	419	17	5,284	17	2,141	8	2,601	735	119,803
Michigan					1	797	23	2,961	16	3,362	13	41,514	266	100,849
Wisconsin			3	7,990	1	71	49	7,033	56	7,743	12	791	894	98,394
East North Central	3	1,987	4	12,940	11	17,501	116	22,596	113	16,790	63	50,137	2,519	502,646
Minnesota	2	1,042			4	1,841	16	2,505	100	12,599	5	1,156	767	127,418
Iowa	1	33			1	13,400	12	1,534	80	10,616	7	12,560	940	157,885
Missouri	8	13,038			1	152	93	22,077	50	8,907	4	1,023	435	155,060
North Dakota					1	500	7	686	24	2,088	1	85	411	54,093
South Dakota					2	1,796	2	520	23	2,211	3	1,245	336	58,868
Nebraska							6	769	69	7,965	4	7,120	442	69,068
Kansas					2	1,258	7	1,645	62	9,752			418	78,930
West North Central	11	14,113			11	18,947	143	29,736	408	54,138	24	23,189	3,749	699,322
Delaware							2	203			4	730	12	1,303
Maryland			1	4,664			1	150	1	130	4	1,952	14	12,390
District of Columbia													1	1,000
Virginia					1	1,000	13	3,374	11	2,650	17	1,697	80	25,927
West Virginia					2	1,501	5	812			5	661	35	5,127
North Carolina			2	97,688			6	466	5	1,944	5	150	39	138,694

South Carolina											1	89	11	16,211
Georgia	1	50	1	113			5	3,429	2	114	2	236	32	66,996
Florida							2	325	2	310			28	2,276
South Atlantic	1	50	4	102,465	3	2,501	34	8,759	21	5,148	38	5,515	252	269,924
Kentucky	2	66	2	179,418	3	1,260	7	1,164	9	2,659	4	526	46	194,979
Tennessee	1	132	3	411	4	453	15	4,952	4	775	2	5,618	93	31,077
Alabama							12	3,570			4	2,165	44	36,662
Mississippi							15	4,869					21	26,808
East South Central	3	198	5	179,829	7	1,713	49	14,555	13	3,434	10	8,309	204	289,616
Arkansas							5	26,037	11	1,345	3	324	65	52,215
Louisiana			1	60			4	1,984	1	21			22	13,276
Oklahoma							7	8,338	16	2,402			128	92,839
Texas	5	1,458					16	6,108	9	762	3	289	128	73,479
West South Central	5	1,458	1	66			32	42,467	37	4,530	6	613	343	231,809
Montana	2	316			1	194	2	86	5	440	1	34	91	19,771
Idaho	1	950			1	30	9	1,794	5	489	1	46	53	10,871
Wyoming					1	62	2	520	2	618	1	18	14	1,821
Colorado					1	50	5	783	3	234	1	88	72	17,973
New Mexico	1	20					3	719			1	15	14	1,627
Arizona					1	120	4	382			2	212	15	2,079
Utah	2	1,070			3	110	5	969	2	504	2	66	35	13,112
Nevada													1	44
Mountain	6	2,356			8	566	30	5,253	17	2,285	9	479	295	67,298
Washington	2	4,608			1	30	5	719	34	5,260	3	494	130	24,148
Oregon	2	971			1	3,000	7	1,048	4	395	2	48	77	13,720
California	6	5,024			1	1,060	2	268	6	1,418	5	1,439	106	67,031
Pacific	10	10,603			3	4,090	14	2,035	44	7,073	10	1,981	313	104,899
United States	43	31,872	19	300,174	57	47,021	472	134,800	699	101,468	326	126,486	8,256	2,386,061

Division of Agricultural Cooperation.

TABLE 715.—*Total expenditures of funds from all sources for cooperative agricultural extension work, by projects, United States, 1915–1924, by States, 1924*

Year and State	Total	Administration	Printing and distribution of publications	County agent work	Home demonstration work [1]	Boys' and girls' club work	Home economics specialists [2]	Extension schools	Animal husbandry	Poultry	Dairying	Animal diseases	Agronomy
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1915	3,498,815.35	295,308.48	71,597.65	1,902,230.51	319,822.50	162,448.27	----------	198,353.91	42,448.08	19,475.14	106,098.08	4,563.64	20,912.81
1916	4,864,180.94	445,243.67	99,779.68	2,411,539.81	519,866.99	231,227.16	----------	198,045.02	131,937.90	47,328.49	172,557.69	21,936.02	77,859.05
1917	6,149,619.63	512,891.54	137,647.87	3,058,640.94	741,679.89	319,556.91	----------	175,754.15	162,063.74	59,498.54	208,966.83	44,215.50	105,529.87
1918	11,302,764.75	754,175.86	207,478.99	5,604,962.72	2,226,227.97	669,666.18	----------	153,904.15	309,270.72	70,402.84	332,852.55	31,777.11	153,211.24
1919	14,661,560.50	930,658.24	263,616.98	7,124,500.90	2,889,210.50	921,621.38	----------	131,782.14	380,168.56	199,441.89	289,756.98	71,678.74	170,534.71
1920	14,658,079.92	995,051.57	308,629.24	7,665,170.77	2,177,024.52	883,615.86	332,415.38	144,187.62	231,141.57	151,161.93	276,917.62	63,200.89	218,019.26
1921	16,792,248.32	1,147,756.66	382,034.06	8,911,965.32	2,388,473.21	923,982.19	300,146.47	147,183.19	300,270.51	209,454.02	323,182.77	36,532.87	281,547.94
1922	17,181,751.64	1,159,074.59	408,983.22	8,946,340.45	2,400,789.74	1,054,388.85	470,378.09	134,512.53	334,436.03	241,417.41	289,773.00	40,492.07	350,605.55
1923	18,484,845.00	1,226,809.21	332,987.35	9,625,817.43	2,790,419.11	991,179.78	502,968.18	144,970.45	338,874.66	270,060.32	369,724.59	54,798.23	388,279.58
1924	19,082,025.04	1,201,783.43	389,321.11	9,999,271.48	2,831,269.37	991,490.45	575,250.46	170,929.62	355,517.40	284,732.27	395,267.26	36,761.09	417,858.06
1924 STATE													
Alabama	460,641.27	17,285.01	1,709.41	234,520.64	125,823.74	10,441.21	7,665.25	2,391.70	15,482.47	375.86	217.25	----------	5,875.51
Arizona	123,193.38	12,514.75	828.60	58,922.38	17,739.53	----------	----------	----------	5,218.46	2,350.44	2,161.03	----------	2,023.84
Arkansas	433,867.87	33,490.00	5,462.77	206,101.10	147,576.26	----------	10,707.08	661.89	1,718.18	3,949.60	5,717.40	----------	----------
California	605,309.80	16,545.17	----------	373,641.17	113,224.61	28,599.76	----------	----------	----------	8,993.48	9,374.82	----------	800.00
Colorado	215,756.61	16,300.76	8,189.94	108,758.60	7,968.64	20,648.72	9,866.49	----------	6,753.10	6,482.28	770.70	----------	8,216.71
Connecticut	251,146.75	18,393.96	6,580.18	109,050.91	10,025.53	17,506.65	15,372.98	625.48	6,609.22	11,805.59	10,103.68	----------	4,941.87
Delaware	38,123.00	6,232.37	1,137.97	15,878.09	3,497.41	10,114.37	----------	----------	----------	----------	----------	----------	1,018.45
Florida	253,573.41	13,967.25	2,696.32	120,114.38	86,379.10	5,391.05	3,711.56	1,785.20	----------	2,708.58	4,708.66	----------	----------
Georgia	580,498.59	26,478.99	6,986.93	273,305.29	155,519.04	15,929.93	6,279.11	----------	6,793.49	6,901.76	8,669.58	1,596.67	9,844.70
Idaho	183,492.81	10,072.94	697.85	78,637.84	22,188.84	16,061.19	3,352.53	1,557.35	10,120.58	----------	7,297.95	----------	13,601.97
Illinois	1,026,935.47	14,271.52	4,310.22	839,164.77	84,984.68	10,626.28	20,628.38	----------	6,963.12	2,740.02	8,843.76	2,664.66	12,861.00
Indiana	498,551.63	25,451.63	7,018.91	283,620.49	9,411.57	42,518.20	12,047.30	10,578.70	13,684.24	12,249.23	12,886.14	2,611.40	9,558.28
Iowa	992,500.33	60,408.84	20,969.29	630,877.23	50,551.24	30,550.25	37,764.70	6,922.85	13,147.31	15,385.39	25,094.48	4,620.26	20,722.16
Kansas	470,532.99	21,981.94	9,196.71	257,132.91	26,171.15	11,659.60	21,177.17	43,307.36	12,752.03	7,664.50	7,431.57	2,459.95	14,827.25
Kentucky	463,209.51	22,419.50	4,797.79	234,793.25	74,473.04	30,048.70	15,886.89	5,237.81	15,270.41	10,738.65	7,035.24	3,691.45	9,617.65
Louisiana	358,619.16	33,936.15	4,329.33	197,199.23	50,780.01	14,756.05	3,535.38	----------	9,707.67	9,194.07	8,879.22	3,642.47	5,981.36
Maine	160,310.99	13,897.42	1,127.78	64,792.26	47,500.81	6,673.39	5,944.69	633.00	----------	3,534.51	3,382.81	----------	3,882.66
Maryland	259,795.15	23,144.62	2,997.18	114,926.95	66,707.07	8,385.93	----------	5,372.43	3,763.38	3,504.95	4,195.78	----------	4,331.35
Massachusetts	408,814.15	14,515.06	5,898.91	123,931.39	94,905.76	109,772.65	7,952.75	10,602.82	3,709.48	5,194.77	1,605.34	----------	4,774.48
Michigan	599,360.55	21,349.27	6,239.71	350,241.88	29,724.06	65,441.84	12,575.10	3,165.83	4,674.03	8,069.71	20,520.71	----------	17,697.16

Minnesota	441,307.89	28,960.19	10,620.73	291,954.74	15,563.56	28,372.95	10,836.23		8,580.48	7,454.87	15,591.95	4,068.71	3,626.94
Mississippi	481,479.55	20,390.68	4,519.04	227,417.64	138,897.64	24,674.86	9,490.59		4,500.12	4,730.29	14,574.65		
Missouri	421,644.08	20,800.31	7,755.86	220,638.04	32,452.72	11,411.30	39,205.80	642.73	11,539.57	9,150.59	12,816.15		28,694.88
Montana	253,499.16	21,188.59	1,970.58	130,931.88	24,818.34	18,428.04	11,311.43	2,462.03	5,604.62	4,651.06	5,724.78		10,420.88
Nebraska	326,603.22	17,196.67	3,535.24	211,941.71	10,183.38	19,614.47	16,214.67		5,600.02	4,937.58	3,114.70		10,000.58
Nevada	96,681.06	8,804.81		48,304.67	24,071.49	825.00				703.39	2,651.40		5,288.63
New Hampshire	128,357.91	11,170.55	5,606.09	48,052.98	30,945.72	23,527.47		1,336.20			3,666.02		
New Jersey	287,034.98	19,685.22	4,151.42	108,861.98	52,985.57	51,038.90	11,925.08			9,401.83	5,720.05		4,676.76
New Mexico	153,437.70	17,010.83	1,759.76	91,979.26	15,089.65		2,364.10		3,145.01	296.84	839.80		4,185.43
New York	1,214,341.12	91,633.76	121,609.44	457,914.76	184,992.09	92,633.58	51,992.34	53,814.25	18,567.98	17,726.93	18,134.47		18,395.39
North Carolina	579,848.00	19,708.86	12,104.00	342,919.55	119,595.66	1,200.00			32,441.43		5,576.45		15,336.31
North Dakota	244,596.98	14,826.27	2,469.35	145,997.37	13,181.19	9,235.00	16,945.76		4,419.14	4,117.46	5,214.81	4,473.25	
Ohio	635,688.14	46,610.65	13,393.27	295,433.25	41,269.65	60,342.85	24,571.65	7,266.87	14,465.38	9,251.15	11,399.12		29,847.44
Oklahoma	464,007.97	27,752.38	6,584.18	228,144.90	134,880.23	13,552.88	6,850.86		4,404.78	7,075.73	5,283.84		4,068.72
Oregon	275,223.39	32,729.99	5,497.69	112,727.48	19,119.63	38,470.36	3,195.31		4,483.42	4,529.46	4,592.65		8,824.09
Pennsylvania	658,004.23	75,027.65	3,145.14	307,218.99		15,908.22	79,225.24	266.30	21,558.37	19,219.03	29,742.07		24,412.41
Rhode Island	31,838.59	3,613.10	432.00	14,258.51	8,103.50	4,324.26							565.60
South Carolina	414,044.50	30,814.24	7,653.99	166,598.56	118,773.70	8,294.40	6,320.96		8,692.74	5,713.08	12,205.11		13,900.69
South Dakota	333,828.75	25,506.45	1,708.16	212,452.50	20,307.37	3,358.46	13,287.77		8,068.32	4,507.24	4,797.46	5,019.57	13,262.54
Tennessee	427,540.52	30,433.39	8,743.76	215,755.99	89,530.48	4,796.93	9,779.94	6,627.36	13,322.51	4,221.47	18,440.91		9,090.53
Texas	954,370.74	43,403.63	13,095.61	535,298.47	272,360.98	9,076.00	14,100.80		10,196.40	7,523.90	6,036.58		6,282.03
Utah	143,649.09	9,143.48	421.22	68,833.21	19,282.03		7,251.28	1,500.00	2,107.98	1,905.75	6,736.66		9,473.94
Vermont	122,521.92	10,819.50	6,255.78	47,002.15	18,512.54	22,305.29	3,181.74			1,641.80	4,425.75		2,828.28
Virginia	525,443.09	71,394.99	14,127.92	244,888.39	106,008.32	9,474.23	7,787.75		8,941.19	12,841.29	10,658.86		8,148.13
Washington	253,634.49	23,756.52	6,889.59	120,746.53	20,529.06	18,291.50	10,113.94	2,043.45	4,054.50	4,284.30	10,056.54		4,055.49
West Virginia	301,808.55	22,711.32	8,292.97	137,253.75	48,632.47	30,897.24			7,755.28	7,766.31	5,542.84	1,912.70	4,920.04
Wisconsin	385,758.75	19,771.77	14,252.30	219,042.43	6,104.31	12,279.29	21,239.56	2,108.01	11,337.50	5,258.65	22,067.62		18,690.76
Wyoming	141,597.25	14,260.48	1,550.22	71,001.03	19,926.00	4,031.20	3,590.30		5,363.49	3,978.88	759.90		8,285.17

[1] Prior to 1920, included home-economics specialists.
[2] Prior to 1920, included under home demonstration work.

TABLE 715.—*Total expenditures of funds from all sources for cooperative agricultural extension work, by projects, United States, 1915–1924, by States, 1924*—Continued

Year and State	Horticulture	Botany and plant pathology	Entomology apiculture ornithology	Rodent pests	Forestry	Agricultural engineering	Farm management	Rural organization	Marketing	Exhibits and fairs	Farmers' institutes	Publicity	Miscellaneous specialists	Correspondence courses
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1915	29,927.89	4,923.17	3,940.00		3,965.44	13,041.60	51,531.27	5,060.34	2,298.60	14,019.21	92,379.09		126,027.03	8,442.64
1916	73,745.13	14,014.12	8,510.74		3,638.84	36,680.32	88,469.26	39,447.36	20,493.57	12,650.06	93,815.11		78,528.28	30,866.67
1917	84,069.57	32,596.15	14,826.22	16,435.68	9,558.50	50,600.78	102,033.20	46,194.46	50,237.47	12,482.49	94,521.08		58,813.72	50,804.53
1918	125,604.52	61,591.37	100,783.02	58,670.91	5,099.82	64,517.11	102,302.00	42,152.51	104,268.49	13,159.98	62,259.03		27,224.06	21,201.60
1919	163,788.79	286,997.69	112,474.45	151,373.85	9,499.45	97,295.29	125,614.03	49,575.14	163,927.62	10,529.41	65,035.46		27,388.93	26,089.37
1920	190,600.55	196,723.24	88,679.73	129,141.12	10,694.57	125,161.36	116,381.31	30,025.75	179,620.88	23,245.03	70,267.43		26,004.41	24,998.26
1921	244,885.75	246,405.00	98,490.86	158,167.12	10,936.54	124,742.98	146,080.43	22,518.19	259,041.53	20,078.60	66,851.69		12,071.76	29,648.66
1922	272,175.98	106,683.99	103,562.22	154,067.62	13,201.60	128,178.32	152,623.81	21,318.83	204,185.86	10,311.31	76,063.84		99,549.81	8,636.92
1923	316,237.49	84,167.35	111,120.36	176,222.78	14,187.56	177,600.66	163,830.70	37,049.51	171,271.52	18,521.48	74,096.45		68,328.25	35,322.00
1924	315,353.61	95,242.00	106,905.73	143,737.33	18,928.99	167,832.95	156,455.94	50,843.31	177,435.75	24,888.34	75,479.04	13,070.96	86,399.09	
1924 STATE														
Alabama	5,073.71	1,913.14	2,688.45			11,120.29	958.36		10,655.93	475.47		5,967.87		
Arizona	4,447.35			16,912.00					75.00					
Arkansas	4,335.33			2,643.68		151.96	1,746.94		9,605.68					
California	8,791.38			9,621.00		11,873.07	2,856.07		375.00	3,637.81			16,976.46	
Colorado				9,977.54		3,122.38	4,528.05		2,196.05	343.50			1,639.15	
Connecticut	12,432.16		2,422.23			2,441.84	6,482.01		8,767.64				7,584.82	
Delaware		244.34												
Florida		7,479.16				7.15			2,625.00	2,000.00				
Georgia	2,978.43					5,919.86			5,899.01	3,145.80			37,250.00	
Idaho	4,417.55		2,111.16	13,370.06		5.00								
Illinois	7,636.72					3,850.71	7,179.63		210.00					
Indiana	8,934.35	7,297.20	480.81			1,617.43	6,261.13		435.00		31,899.59			
Iowa	11,107.69	1,514.28	8,155.86		3,193.45	6,563.00	10,972.13	3,819.82	9,742.45	3,141.26			17,176.39	
Kansas	5,765.21	4,336.95	4,298.63	6,193.86		9,487.75	4,512.98		175.57					
Kentucky	8,479.88					5,089.53	5,246.30		9,783.40					
Louisiana	9,959.29		3,642.46		150.00				2,926.47					
Maine					2,876.97		6,044.89							
Maryland	8,951.41	4,449.60	6,423.81			10.85			2,620.84					
Massachusetts	15,490.69	15.35	17.08		.60		4,088.40		5,084.88	1,303.74				
Michigan	20,927.97		5,800.98			13,719.27	25.01		19,188.02					

Minnesota	260.57	3,680.41	259.28		318.17		3,616.99		3,174.43	1,000.00	3,366.69		
Mississippi	11,493.47					5,685.08			15,105.49				
Missouri	9,471.29		5,445.22			1,690.43		2,948.62	6,980.57				
Montana		696.63		6,238.00		875.00	8,077.30						
Nebraska	3,776.33					8,778.05	4,006.48	3,582.83	4,120.51				
Nevada				5,500.00					441.67				
New Hampshire							4,052.88						
New Jersey	13,727.83					14.95	4,530.39		315.00				
New Mexico	1,516.62			12,646.00					2,460.78			153.62	
New York	19,025.06	19,077.11	10,709.44		3,732.41	10,528.90	16,581.88	7,171.33	100.00				
North Carolina	10,295.32	3,647.90	6,328.62			5,425.99			5,267.91				
North Dakota		1,290.34		5,486.00		444.68	8,952.91		86.60	354.36		7,103.09	
Ohio	13,562.77	766.34	5,469.52			11,318.55	13,330.27		5,773.15		31,616.26		
Oklahoma	4,415.73		4,316.65	6,903.33		4,593.10			5,180.66				
Oregon	5,008.41			12,649.17		4,311.11	5,444.21		6,278.57	7,361.84			
Pennsylvania	15,909.44	15,566.36	19,194.43		8,657.39		10,173.56	12,779.63					
Rhode Island							541.62						
South Carolina	8,776.78	4,258.61	4,812.41					1,458.58	15,770.65				
South Dakota			4,264.35	5,185.00		4,879.19	3,961.81	1,848.14	1,414.72				
Tennessee	1,039.25					4,713.15			11,044.85				
Texas	10,402.46		4,856.03	6,583.00		5,137.90		10,016.95					
Utah	2,022.41	1,653.80	748.34	4,982.00		1,929.01			33.33			5,624.65	
Vermont	805.09					32.50	4,501.50		210.00				
Virginia	16,922.57	3,778.36				7,604.46	.29		2,866.34				
Washington	3,736.41	3,470.82	2,021.62	10,013.00		3,919.24	3,647.31			2,007.67			
West Virginia	7,233.05	2,927.69				23.98		7,217.41	125.00		8,596.50		
Wisconsin	9,226.63	7,077.61	2,438.32			10,347.57	4,195.24		321.18				
Wyoming				8,733.69						116.89			

Office of Cooperative Extension Work.

TABLE 716.—*Total expenditures of funds from all sources for cooperative agricultural extension work, by sources of funds, 1915–1924*

Year	Total	United States Department of Agriculture		Smith-Lever		State and college	County	Other
		Farmers' cooperative demonstration work	Other bureaus	Federal	State			
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1915	3,597,235.85	905,782.00	105,168.40	474,934.73		1,044,270.38	780,331.79	286,748.55
1916	4,864,180.94	900,389.92	165,172.01	1,077,923.73	597,923.73	872,733.90	973,251.56	276,786.09
1917	6,149,619.63	958,333.87	185,893.15	1,575,054.38	1,095,054.38	832,114.16	1,258,296.14	244,873.55
1918	11,302,764.75	[1] 3,900,406.30	507,282.95	2,068,066.29	1,588,066.29	881,031.25	1,863,632.29	494,219.38
1919	14,661,560.50	[2] 5,564,839.70	935,373.64	2,538,828.04	2,058,828.04	901,828.49	2,291,209.30	370,653.29
1920	14,658,079.92	1,021,091.39	406,020.96	4,464,344.36	3,984,344.36	1,244,465.72	2,865,739.87	672,073.26
1921	16,792,248.32	1,025,083.33	435,046.70	4,974,048.50	4,494,048.50	1,549,897.30	3,293,566.38	1,020,557.61
1922	17,181,751.64	1,007,263.48	209,540.93	5,510,349.45	5,030,349.45	1,497,379.71	2,972,740.71	954,127.91
1923	18,484,845.00	1,004,729.29	275,532.24	5,820,816.89	5,340,816.89	1,712,766.53	3,420,000.81	910,182.35
1924	19,082,025.04	991,900.82	234,320.98	5,859,605.01	5,379,605.01	1,696,878.21	3,883,185.02	1,036,529.99
1924, BY STATES								
Alabama	460,641.27	32,996.05	1,966.72	203,201.83	193,201.83	15,120.07	14,154.77	
Arizona	123,193.38	11,385.63	17,113.25	32,761.23	22,761.23	18,555.18	20,616.86	
Arkansas	433,867.87	30,942.97	2,498.77	163,576.10	153,576.10	9,663.30	54,386.82	19,223.81
California	605,309.80	23,434.20	15,774.78	125,061.46	115,061.46	172,416.90	153,561.00	
Colorado	215,756.61	23,494.78	14,578.43	61,101.07	51,101.07	12,004.62	52,355.06	1,121.58
Connecticut	251,146.75	13,664.13	84.15	56,680.09	46,680.09	35,803.91	98,234.38	
Delaware	38,123.00	6,639.88		20,741.56	10,741.56			
Florida	253,573.41	22,052.78	2,632.15	74,368.33	64,368.33	16,200.00	73,951.82	
Georgia	580,498.59	38,529.13	1,157.94	237,780.76	227,780.76	37,250.00	38,000.00	
Idaho	183,492.81	20,696.68	17,186.28	42,867.74	32,867.74	16,875.92	51,442.32	1,556.13
Illinois	1,026,935.47	632.13	210.00	228,495.98	218,495.98	13,400.00	21,989.22	543,712.16
Indiana	498,551.63	12,175.27	435.00	162,087.09	152,087.09	52,255.97	75,350.54	44,160.67
Iowa	992,500.33	13,800.82	351.30	170,596.43	160,596.43	221,487.72	141,500.00	284,167.63
Kansas	470,532.99	10,740.23	5,637.55	130,962.06	120,962.06	57,983.93	104,555.97	39,691.19
Kentucky	463,209.51	31,102.80	1,181.20	197,342.23	187,342.23		37,903.54	8,337.51
Louisiana	358,619.16	34,251.68	252.55	132,963.83	122,963.83	2,009.21	61,180.12	4,997.94
Maine	160,310.99	18,859.65		59,217.76	49,217.76	653.00	25,788.77	6,574.05
Maryland	259,795.15	19,389.35	10.85	70,963.51	60,963.51	64,096.93	44,371.00	
Massachusetts	408,814.15	25,643.91		31,234.75	21,234.75	78,540.74	252,160.00	
Michigan	599,360.55	9,060.74	652.40	159,913.95	149,913.95	72,615.51	207,204.00	

Minnesota	441,307.89	13,646.98	235.00	150,319.33	140,319.33	31,609.66	81,555.21	23,622.38
Mississippi	481,479.55	38,712.48	1,799.40	172,904.83	162,904.83	8,017.70	97,140.31	
Missouri	421,644.08	12,512.22	1,226.25	200,921.32	190,921.32	3,638.07	12,424.90	
Montana	253,499.16	26,018.15	12,348.52	49,597.13	39,597.13	39,080.87	86,857.36	
Nebraska	326,603.22	12,954.42	3,386.62	103,620.98	93,620.98	25,556.36	87,463.86	
Nevada	96,681.06	12,362.53	12,231.25	16,530.11	6,530.11	694.39	48,332.67	
New Hampshire	128,357.91	18,197.12		27,159.69	17,159.69	10,470.96	39,905.76	15,464.69
New Jersey	287,034.98	14,806.04	329.95	80,773.81	70,773.81		120,351.37	
New Mexico	153,437.70	20,441.01	13,485.80	41,035.53	31,035.53		47,145.17	294.66
New York	1,214,341.12	11,118.39	478.15	196,113.14	186,113.14	287,129.71	529,595.58	3,793.01
North Carolina	579,848.00	33,279.81	6,877.45	227,356.06	217,356.06	10,642.72	84,335.90	
North Dakota	244,596.98	27,126.97	5,572.00	68,694.01	58,694.01	1,807.38	32,702.61	
Ohio	635,688.14	9,838.32	2,865.40	228,775.06	218,775.06	55,672.20	118,478.82	1,283.28
Oklahoma	464,007.97	30,502.62	6,304.17	164,375.95	154,375.95		108,449,28.	
Oregon	275,223.39	23,971.94	14,388.24	51,224.89	41,224.89	75,263.57	67,873.79	1,276.07
Pennsylvania	658,004.23	70.25		323,777.88	313,777.88	20,378.22		
Rhode Island	31,838.59	7,722.36		11,580.21	1,580.21	135.81	10,820.00	
South Carolina	414,044.50	32,401.05	1,892.25	156,014.49	146,014.49	7,000.00	70,722.22	
South Dakota	333,828.75	22,765.14	8,845.67	66,176.30	56,176.30	67,449.45	112,415.89	
Tennessee	427,540.52	35,926.71	9,471.70	191,413.63	181,413.63	3,346.66	5,968.19	
Texas	954,370.74	55,117.58	6,707.50	341,015.26	331,015.26		220,515.14	
Utah	143,649.09	16,488.28	15,699.75	34,565.68	24,565.68	21,448.58	29,573.72	1,307.40
Vermont	122,521.92	16,834.53	242.50	35,473.53	25,473.53	6,424.71	14,816.99	23,256.13
Virginia	525,443.09	31,741.52	304.10	181,804.66	171,804.66	56,220.34	71,106.90	12,460.91
Washington	253,634.49	25,142.13	11,367.30	73,868.29	63,868.29	4,365.55	74,794.14	228.79
West Virginia	301,808.55	18,131.17	148.98	125,015.45	115,015.45	25,523.01	17,974.49	
Wisconsin	385,758.75	7,640.62	3,613.35	153,180.29	143,180.29	97.02	78,047.18	
Wyoming	141,597.25	16,937.67	12,776.36	24,399.74	14,399.74	37,972.36	35,111.38	

Office of Cooperative Extension Work.

[1] Includes $2,949,072.48 emergency funds

[2] Includes $4,598,243.13 emergency funds.

TABLE 717.—*Number of counties with county extension agents, 1914–1925*

State	Number of counties	1914		1915		1916		1917		1918		1919		1920		1921		1922		1923		1924		1925	
		Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Alabama	67	67	18	67	19	65	27	62	28	66	67	65	54	55	32	55	36	55	34	54	34	59	35	59	37
Arizona	14			3		6		7		11	3	11	6	10	6	9	8	11	10	11	9	10	11	12	9
Arkansas	75	45	15	52	20	53	31	61	47	68	65	66	58	58	42	44	34	40	32	47	38	45	42	50	39
California	58	4		11		13		17		33	24	35	8	35	10	37	10	40	16	41	21	40	23	43	22
Colorado	63	13		13		19	2	16		29	7	27	3	24	2	24	1	26	2	23	2	28	4	20	2
Connecticut	8	1		6		7		8	5	8	8	8	6	8	6	8	3	8	5	7	6	8	6	8	7
Delaware	3			3		3		2	1	3	3	3	2	3		3		3		3		3		3	
Florida	63	25	24	36	27	38	28	37	35	53	54	47	42	32	29	31	28	33	29	37	24	33	31	36	30
Georgia	161	80	29	81	48	83	45	117	57	120	125	134	93	97	66	85	66	98	70	88	68	89	64	121	61
Idaho	44	2		3		7		11		27	24	32	4	34	5	32	5	28	21	21	30	19	30	16	27
Illinois	102	14		18		20	1	22		53	88	63	17	81	11	85	11	85	11	94	16	95	21	95	21
Indiana	92	27		31		32		40		83	22	76	8	68	5	82	3	85	2	86	2	82	1	79	1
Iowa	99	9		11		16		26		97	96	99	23	99	19	99	21	99	18	99	17	98	13	99	15
Kansas	105	9		39		56		53		67	14	53	8	51	9	59	7	56	8	58	9	57	10	63	15
Kentucky	119	28	9	39	19	47	24	45	27	90	96	71	74	53	18	61	19	61	26	59	24	67	24	72	24
Louisiana	64	41	13	43	13	43	18	42	20	58	33	55	32	41	24	38	25	45	26	45	28	46	28	48	24
Maine	16			3		4		9		16	14	16	2	16	5	16	10	16	14	16	15	16	15	16	15
Maryland	23	8	5	13	6	16	10	23	13	22	22	23	23	22	21	23	17	22	16	23	17	23	18	23	19
Massachusetts	14	1		10		9	1	11	6	13	12	13	10	11	9	11	9	11	11	11	9	12	10	11	11
Michigan	83	11		17		22	1	30	1	71	24	63	13	60	12	64	10	69	8	64	7	57	7	57	5
Minnesota	87	27		23		19		10		85	39	86	8	82	8	83	7	77	4	67	3	62	8	53	8
Mississippi	82	48	33	49	33	44	32	53	49	79	71	75	64	71	53	50	55	56	48	56	51	56	45	54	44
Missouri	114	13		15		14		15		71	48	52	20	47	11	53	14	55	13	54	8	53	11	50	9
Montana	55	4		8		7		12		23	18	24	11	27	9	26	7	26	11	24	7	23	5	23	6
Nebraska	93	5		8		9		8	2	79	30	54	10	39	7	46	7	42	3	42	3	41	2	43	2
Nevada	17						1	6		8	10	4	5	6	5	7	6	9	4	11	4	11	4	8	9
New Hampshire	10	1		5		8		9	2	10	9	10	6	9	3	10	5	10	6	10	8	10	7	10	8
New Jersey	21	4		7		11	1	10		17	8	18	5	18	8	18	7	18	9	18	8	19	12	18	11
New Mexico	31			8		9		11		25	11	26	5	22	4	19	4	18	2	22	4	20	4	21	5
New York	60	25		29		36	1	41	3	56	38	55	24	55	22	55	28	55	31	55	32	56	35	55	38
North Carolina	100	51	27	64	34	65	44	69	48	91	72	87	66	77	59	59	47	66	49	73	50	76	48	74	49
North Dakota	53	17		15		15		17	2	38	33	32	5	28	4	36	2	36	6	33	2	34	2	33	1
Ohio	88	8		10		12	1	20		63	13	65	5	63	2	80	7	83	10	85	8	81	11	85	15
Oklahoma	77	40	19	56	24	59	22	62	23	77	50	70	46	73	40	71	36	74	37	67	42	61	50	65	44
Oregon	36	10		12		13		14		24	15	23	5	26	5	26	6	24	4	22	4	21	3	28	3

Pennsylvania	67	10	----	14	----	22	1	45	----	53	48	40	----	54	----	57	----	63	----	60	28	63	28	63	28
Rhode Island	5	----	----	----	----	4	----	4	----	5	4	4	----	4	2	4	3	4	5	4	2	4	2	5	2
South Carolina	46	43	21	43	24	42	31	40	36	43	44	45	45	45	45	42	36	42	36	38	36	39	38	40	38
South Dakota	69	3	----	5	----	11	----	13	----	59	42	36	3	39	3	43	1	48	1	43	15	36	19	34	32
Tennessee	95	36	18	38	24	48	31	57	49	91	94	76	77	45	41	38	26	41	25	48	28	54	27	50	26
Texas	254	98	26	99	27	90	38	92	31	178	67	168	69	127	55	128	38	143	52	148	79	149	91	155	88
Utah	29	8	----	10	----	8	2	15	2	28	14	22	4	21	6	19	3	19	15	22	4	21	5	18	11
Vermont	14	7	----	9	----	11	----	13	----	13	7	13	5	12	4	13	6	13	9	11	10	13	9	12	7
Virginia	100	53	17	55	22	51	26	53	38	75	52	71	36	57	28	61	23	67	30	70	34	65	36	65	35
Washington	39	7	----	10	----	13	----	22	----	34	22	29	6	32	8	31	7	28	7	24	6	25	5	26	5
West Virginia	55	13	5	27	10	29	12	45	12	48	33	48	22	40	12	31	8	40	18	39	15	39	23	36	15
Wisconsin	71	9	----	12	----	13	----	22	----	50	17	41	4	42	2	50	1	50	1	47	1	47	1	48	1
Wyoming	23	3	----	6	----	8	----	13	----	15	5	13	7	14	7	16	6	16	6	16	6	18	6	16	5
Total	[1] 3,064	928	279	1,136	350	1,225	430	1,436	537	2,435	1,715	2,247	1,049	2,033	784	2,043	699	2,114	801	2,096	874	2,084	930	2,124	929

Office of Cooperative Extension Work.

[1] Number of counties reporting agricultural products.

TABLE 718.—*Farm population and total population, by race, nativity, and parentage, by States, 1920*

State	Farm population										Total population			
	Native white				Foreign-born white	Colored (nonwhite)				Total	Native white	Foreign-born white	Colored	Total
	Native parentage	Foreign parentage	Mixed parentage	Total		Negro	Indian	Chinese	Japanese	Total [1]				
Maine	155,418	10,561	17,354	183,333	14,131	124	12	1		137	197,601	658,346	107,349	2,319	768,014
New Hampshire	55,746	6,231	6,460	68,437	7,498	81	1	1	3	86	76,021	351,098	91,233	752	443,083
Vermont	90,996	9,957	11,716	112,669	12,431	152	9	2		163	125,263	307,291	44,526	611	352,428
Massachusetts	61,453	24,491	9,727	95,671	22,246	608	23	5	1	637	118,554	2,725,990	1,077,534	48,832	3,852,356
Rhode Island	9,191	2,636	924	12,751	2,173	209			3	212	15,136	420,481	173,499	10,417	604,397
Connecticut	44,943	22,311	6,063	73,317	19,365	579	35	1	3	620	93,302	982,219	376,513	21,899	1,380,631
New York	561,749	100,534	62,838	725,121	71,276	2,333	1,978	5	26	4,350	800,747	7,385,915	2,786,112	213,200	10,385,227
New Jersey	89,132	22,693	7,138	118,963	19,393	5,334	2	5	11	5,352	143,708	2,298,474	738,613	118,813	3,155,900
Pennsylvania	818,106	56,981	30,711	906,098	36,894	5,320	17	1	4	5,342	948,334	7,044,876	1,387,850	287,291	8,720,017
Ohio	957,414	76,671	57,903	1,091,988	37,765	9,556	8	3	7	9,576	1,139,329	4,893,196	678,697	187,501	5,759,394
Indiana	810,444	41,513	35,514	887,471	16,271	3,513	35		5	3,553	907,295	2,698,203	150,868	81,319	2,930,390
Illinois	827,593	123,331	86,820	1,037,744	54,390	6,119	6	1	1	6,128	1,098,262	5,092,382	1,206,951	185,947	6,485,280
Michigan	464,785	159,560	108,052	732,397	112,358	2,291	1,654	2	6	3,955	848,710	2,874,992	726,635	66,785	3,668,412
Wisconsin	397,586	253,407	135,200	786,193	129,728	394	3,711	7	4	4,116	920,037	2,156,810	460,128	15,129	2,632,067
Minnesota	308,505	282,194	148,222	738,921	155,846	236	2,176	1		2,414	897,181	1,882,772	486,164	18,189	2,387,125
Iowa	622,832	166,350	116,870	905,752	78,385	647	14	1		662	984,799	2,158,534	225,647	19,840	2,404,021
Missouri	1,076,260	47,903	46,919	1,171,082	20,131	20,113	14		6	20,133	1,211,346	3,039,018	186,026	179,011	3,404,055
North Dakota	111,357	136,862	58,762	306,981	82,859	94	4,564	2		4,660	394,500	508,451	131,503	6,918	646,872
South Dakota	162,247	89,687	52,497	304,431	47,221	303	10,262	1	3	10,569	362,221	536,756	82,391	17,400	636,547
Nebraska	334,066	117,580	74,169	525,815	56,084	429	1,522	1	321	2,273	584,172	1,129,567	149,652	17,153	1,296,372
Kansas	546,950	82,163	62,577	691,690	39,391	5,468	825			6,296	737,377	1,598,328	110,578	60,351	1,769,257
Delaware	38,950	1,361	789	41,100	1,150	8,961			1	8,962	51,212	172,805	19,810	30,388	223,003
Maryland	200,356	6,697	4,806	211,859	4,372	62,989	3	2		62,994	279,225	1,102,560	102,177	244,924	1,449,661
District of Columbia	516	73	33	622	54	218				218	894	298,312	28,548	110,711	437,571
Virginia	742,497	4,289	3,959	750,745	4,445	308,590	630	4	1	309,227	1,064,417	1,587,124	30,785	691,278	2,309,187
West Virginia	465,789	3,044	3,378	472,211	1,661	4,049	2	1		4,052	477,924	1,315,329	61,906	86,466	1,463,701
North Carolina	1,020,406	847	961	1,022,214	897	467,648	10,465	2	1	478,116	1,501,227	1,776,680	7,099	775,344	2,559,123
South Carolina	432,816	360	599	433,775	356	640,357	194	2	9	640,562	1,074,693	812,137	6,401	865,186	1,683,724
Georgia	924,637	732	1,702	927,071	838	757,205	98		1	757,304	1,685,213	1,672,928	16,186	1,206,718	2,895,832
Florida	182,068	3,471	3,302	188,841	4,632	88,326	14	20	56	88,420	281,893	595,145	43,008	330,317	968,470

Kentucky	1,215,435	6,751	6,583	1,228,769	2,665	73,413	13		2	73,428	1,304,862	2,149,780	30,780	236,070	2,416,630
Tennessee	1,061,037	2,420	2,917	1,066,374	1,650	203,653	24	1		203,678	1,271,708	1,870,515	15,478	451,892	2,337,885
Alabama	812,282	2,612	2,749	817,643	2,379	515,594	235		14	515,863	1,335,885	1,429,370	17,662	901,142	2,348,174
Mississippi	541,088	1,966	2,334	545,388	1,699	722,379	1,002	14		723,395	1,270,482	845,943	8,019	936,656	1,790,618
Arkansas	792,613	7,246	8,033	807,892	4,939	334,162	49	7		334,218	1,147,049	1,265,782	13,975	472,447	1,752,204
Louisiana	405,345	8,789	4,193	418,327	5,813	361,661	234	5	7	361,910	786,050	1,051,740	44,871	701,898	1,798,509
Oklahoma	842,893	23,783	20,939	887,615	13,362	78,189	38,137	4	16	116,350	1,017,327	1,781,226	39,968	207,089	2,028,283
Texas	1,545,766	125,709	73,502	1,744,977	114,507	417,095	966	18	206	418,289	2,277,773	3,557,646	360,519	745,063	4,663,228
Montana	119,891	39,737	25,064	184,692	33,642	156	6,971	71	127	7,333	225,667	440,640	93,620	14,629	548,889
Idaho	139,747	22,739	20,601	183,087	14,705	128	2,263	81	622	3,110	200,902	386,705	38,963	6,198	431,866
Wyoming	47,562	7,258	5,988	60,808	5,594	118	683		88	904	67,306	164,891	25,255	4,256	194,402
Colorado	187,995	32,992	18,469	239,456	24,357	556	371	1	1,327	2,260	266,073	807,149	116,954	15,526	939,629
New Mexico	134,730	4,611	4,366	143,707	5,360	289	12,042	1	47	12,379	161,446	305,596	29,077	25,677	360,350
Arizona	42,206	5,683	4,262	52,151	13,711	399	25,953	46	267	24,698	90,560	213,350	78,099	42,713	334,162
Utah	88,160	20,461	19,752	128,373	9,540	69	1,471	11	753	2,336	140,249	385,446	56,455	7,495	449,396
Nevada	7,397	2,460	1,571	11,428	2,779	16	1,856	45	39	1,957	16,164	55,897	14,802	6,708	77,407
Washington	155,559	47,092	28,793	231,444	44,064	357	4,291	117	3,079	7,874	283,382	1,069,722	250,055	36,844	1,356,621
Oregon	145,729	23,718	19,511	188,958	21,117	121	2,665	177	966	3,951	214,021	666,995	102,151	14,243	783,389
California	245,593	85,654	45,020	376,267	94,910	1,652	7,164	3,617	31,471	45,593	516,770	2,583,049	681,662	162,150	3,426,861
United States	21,045,836	2,326,166	1,470,612	24,842,614	1,471,040	5,112,253	142,714	4,287	39,504	5,300,615	31,614,269	81,108,161	13,712,754	10,889,705	105,710,620

Division of Farm Population and Rural Life. Compiled from reports of Bureau of the Census.
See footnotes to Table 719.

[1] Includes 1,857 nonwhites other than Negroes, Indians, Chinese, or Japanese, of which 1,689 were reported from California.

TABLE 719.—*Farm population and other population, by race, nativity, parentage, and age group, United States, 1920*

BY RACE, ETC.

Race, nativity, parentage, and age group	Farm population[1]	Rural population[2]	Urban population[3]	Total population	Percentage distribution			
					Farm population	Rural population	Urban population	Total population
White:								
Native	24,842,614	40,845,060	40,263,101	81,106,161	78.6	79.5	74.1	76.7
Native parentage	21,045,836	33,865,223	24,556,729	58,421,957	66.6	65.9	45.2	55.3
Foreign parentage	2,326,166	4,389,653	11,304,886	15,694,539	7.4	8.5	20.8	14.8
Mixed parentage	1,470,612	2,590,179	4,401,486	8,992,665	4.7	5.0	8.1	6.6
Foreign born	1,471,040	3,355,771	10,356,983	13,712,754	4.7	6.5	19.1	13.0
Total	26,313,654	44,200,831	50,620,084	94,820,915	83.2	86.0	93.2	89.7
Colored (nonwhite):								
Negro	5,112,253	6,908,658	3,559,473	10,468,131	16.2	13.4	6.6	9.9
Indian	142,714	228,218	15,219	244,437	0.5	0.4	(4)	0.2
Chinese	4,287	11,631	50,008	61,639	(4)	(4)	0.1	0.1
Japanese	39,504	57,180	53,850	111,030	0.1	0.1	0.1	0.1
All other	1,857	3,499	5,989	9,488	(4)	(4)	(4)	(4)
Total	5,300,615	7,205,186	3,684,519	10,889,705	16.8	14.0	6.8	10.3
Total white and colored	31,614,269	51,406,017	54,304,603	105,710,620	100.0	100.0	100.0	100.0

BY AGE

Under 10 years	8,138,070	12,645,278	10,326,027	22,971,305	25.7	24.6	19.0	21.7
10 to 20 years	7,824,106	11,813,311	10,089,484	21,852,795	24.7	23.0	18.5	20.7
21 years and over	15,652,093	26,947,428	33,939,092	60,896,520	49.5	52.4	62.5	57.6
All ages	31,614,269	51,406,017	54,304,603	105,710,620	100.0	100.0	100.0	100.0

Division of Farm Population and Rural Life. Compiled from reports of Bureau of the Census.

[1] Definition of farm population as used in these tables: (1) All persons living on farms, without regard to occupation; (2) all those farm laborers (and their families) who, while not living on farms, nevertheless live in strictly rural territory, outside the limits of any incorporated place.

[2] Definition of rural population: All persons other than those who are urban.

[3] Definition of urban population: All persons living in places of 2,500 population and more.

[4] Less than one-tenth of 1 per cent.

TABLE 720.—*Farm population and other population, summary, United States, 1920*

Item	Number	Percentage of total population
Farm population	31,614,269	29.9
Farm population in rural territory	31,358,640	29.66
Farm population in urban territory	255,629	.24
In cities and other incorporated places of 25,000 and over	52,955	.05
In cities and other incorporated places of 10,000 to 25,000	36,131	.03
In cities and other incorporated places of 2,500 to 10,000	166,543	.16
Rural population	51,406,017	48.6
In incorporated places of less than 2,500 inhabitants	8,963,241	8.5
In unincorporated territory	42,436,776	40.1
Urban population (living in cities and other incorporated places of 2,500 inhabitants and over)	54,304,603	51.4
Total population	105,710,620	100.0

Division of Farm Population and Rural Life. Compiled from Bureau of the Census reports.
See footnotes to Table 719.

TABLE 721.—*Farm population and other population, by place of residence, by States, 1920*

State	Farm population					Urban population (in cities and other incorporated places of 2,500 and over)	Total population
	In rural territory		In cities and other incorporated places of 2,500 and over	Total			
	Number	Per cent of rural population		Number	Per cent of total population		
Maine	189,026	46.4	8,575	197,601	25.7	299,569	768,014
New Hampshire	64,607	39.6	11,414	76,021	17.2	279,761	443,083
Vermont	124,445	51.3	813	125,263	35.5	100,976	352,428
Massachusetts	61,732	30.5	56,822	118,554	3.1	3,650,248	3,852,356
Rhode Island	5,315	34.9	9,821	15,136	2.5	589,180	604,397
Connecticut	90,297	20.3	3,005	93,302	6.8	936,369	1,380,631
New York	782,954	43.6	17,793	800,747	7.7	8,589,844	10,385,227
New Jersey	136,847	20.1	6,861	143,708	4.6	2,474,936	3,155,900
Pennsylvania	941,350	30.2	6,974	948,334	10.9	5,607,815	8,720,017
Ohio	1,133,912	54.5	5,417	1,139,329	19.8	3,677,136	5,759,394
Indiana	902,820	62.4	4,475	907,295	31.0	1,482,855	2,930,390
Illinois	1,090,736	52.4	7,526	1,098,262	16.9	4,403,153	6,485,280
Michigan	844,499	59.2	4,211	848,710	23.1	2,241,560	3,668,412
Wisconsin	915,257	66.0	4,800	920,057	35.0	1,244,568	2,632,067
Minnesota	893,460	66.9	3,721	897,181	37.6	1,051,596	2,387,125
Iowa	977,694	64.0	7,105	984,799	41.0	875,496	2,404,021
Missouri	1,207,899	68.5	3,447	1,211,346	35.6	1,586,903	3,404,055
North Dakota	393,622	79.5	878	394,500	61.0	88,239	646,872
South Dakota	361,886	67.7	335	362,221	56.9	101,872	636,547
Nebraska	582,738	65.4	1,434	584,172	45.1	406,306	1,296,372
Kansas	735,884	63.9	1,493	737,377	41.7	617,984	1,769,257
Delaware	51,151	50.0	61	51,212	23.0	120,787	223,003
Maryland	277,655	47.9	1,569	279,225	19.3	869,422	1,449,661
District of Columbia			894	894	0.2	437,571	437,571
Virginia	1,059,913	64.8	4,504	1,064,417	46.1	673,984	2,309,187
West Virginia	476,631	43.5	1,293	477,924	32.7	360,007	1,463,701
North Carolina	1,499,946	72.5	1,281	1,501,227	68.7	490,370	2,559,123
South Carolina	1,073,479	77.2	2,214	1,074,693	63.8	293,987	1,683,724
Georgia	1,680,611	77.5	4,602	1,685,213	58.2	727,859	2,895,832
Florida	279,370	45.6	2,523	281,893	29.1	355,825	968,470
Kentucky	1,302,342	73.0	2,520	1,304,862	54.0	633,543	2,416,630
Tennessee	1,269,179	73.5	2,529	1,271,708	54.4	611,226	2,337,885
Alabama	1,334,513	72.6	1,372	1,335,885	56.9	509,317	2,348,174
Mississippi	1,268,772	81.8	1,710	1,270,482	71.0	240,121	1,790,618
Arkansas	1,144,482	78.3	2,567	1,147,049	65.5	290,497	1,752,204
Louisiana	784,455	67.0	1,595	786,050	43.7	628,163	1,798,509
Oklahoma	1,015,899	68.2	1,428	1,017,327	50.2	539,480	2,028,283
Texas	2,265,734	71.9	12,039	2,277,773	48.8	1,512,689	4,663,228
Montana	225,389	59.8	278	225,667	41.1	172,011	548,889
Idaho	196,563	62.8	4,339	200,902	46.5	119,037	431,866
Wyoming	67,076	48.9	230	67,306	34.6	57,348	194,402
Colorado	265,281	54.5	792	266,073	28.3	453,259	939,629
New Mexico	160,542	54.3	904	161,446	44.8	64,960	360,350
Arizona	90,167	41.6	393	90,560	27.1	117,527	334,162
Utah	131,872	56.4	8,377	140,249	31.2	215,584	449,396
Nevada	16,103	25.9	61	16,164	20.9	15,254	77,407
Washington	280,022	46.1	3,360	283,382	20.9	748,736	1,356,621
Oregon	212,609	54.0	2,012	214,021	27.3	391,019	783,389
California	493,513	45.1	23,257	516,770	15.1	2,331,729	3,426,861
United States	31,358,640	61.0	255,629	31,614,269	29.9	54,304,603	105,710,620

Division of Farm Population and Rural Life. Compiled from reports of Bureau of the Census.
See foot notes to Table 719.

TABLE 722.—*Farm population and other population, by age groups, by States, 1920*

State	Percentage of total											
	Farm population			Rural population			Urban population			Total population		
	Under 10 years	10 to 20 years	21 years and over	Under 10 years	10 to 20 years	21 years and over	Under 10 years	10 to 20 years	21 years and over	Under 10 years	10 to 20 years	21 years and over
Maine	19.0	20.4	60.6	19.9	19.4	60.7	17.9	18.5	63.6	19.1	19.0	61.9
New Hampshire	16.7	18.1	65.2	17.5	17.3	65.3	18.8	18.8	62.4	18.3	18.3	63.4
Vermont	19.8	20.8	59.4	19.7	19.3	61.0	18.3	18.8	62.9	19.3	19.1	61.6
Massachusetts	18.3	19.5	62.2	18.2	18.1	63.7	19.4	18.0	62.5	19.4	18.0	62.6
Rhode Island	17.5	19.2	63.4	17.6	18.2	64.2	20.0	19.1	60.9	20.0	19.1	61.0
Connecticut	19.4	19.4	61.2	21.2	18.2	60.6	21.2	18.0	60.7	21.2	18.1	60.7
New York	18.4	19.2	62.3	18.5	18.0	63.5	19.2	18.2	62.6	19.1	18.2	62.7
New Jersey	19.2	20.9	59.9	20.6	19.1	60.2	21.1	18.8	60.1	21.0	18.9	60.1
Pennsylvania	21.7	23.3	55.0	24.7	21.3	54.0	21.1	19.1	59.9	22.4	19.8	57.8
Ohio	21.2	21.9	56.9	21.3	20.4	58.3	18.8	17.5	63.7	19.7	18.5	61.8
Indiana	21.4	22.2	56.4	20.8	21.1	58.1	18.4	18.3	63.3	19.6	19.7	60.7
Illinois	22.7	23.0	54.2	21.7	21.5	56.8	19.3	18.0	62.7	20.1	19.1	60.8
Michigan	22.9	21.9	55.1	22.6	20.5	56.9	20.1	17.3	62.6	21.1	18.5	60.4
Wisconsin	24.3	23.7	52.1	23.1	22.0	54.9	19.4	19.0	61.5	21.4	20.6	58.0
Minnesota	24.4	24.7	50.9	23.4	23.0	53.6	18.8	18.0	63.2	21.4	20.8	57.8
Iowa	24.4	22.8	52.8	22.3	21.3	56.5	17.2	18.2	64.6	20.4	20.2	59.4
Missouri	23.6	23.7	52.7	22.8	22.7	54.6	15.9	18.1	66.0	19.6	20.5	59.9
North Dakota	29.4	24.2	46.4	28.3	23.2	48.5	21.3	19.9	58.8	27.3	22.8	49.9
South Dakota	27.0	23.0	50.0	25.2	22.0	52.7	19.1	19.2	61.8	24.2	21.6	54.2
Nebraska	25.9	23.6	50.5	23.7	22.4	53.9	18.0	18.4	63.6	21.9	21.2	57.0
Kansas	24.1	23.4	52.5	22.6	22.0	55.4	18.2	19.2	62.6	21.1	21.1	57.9
Delaware	22.5	23.5	54.0	20.5	20.8	58.7	19.2	17.5	63.3	19.8	19.0	61.2
Maryland	23.4	24.4	52.1	22.6	22.7	54.7	18.4	19.0	62.7	20.1	20.5	59.5
Dist. of Columbia	8.5	51.9	39.6				13.8	16.5	69.8	13.8	16.5	69.8
Virginia	26.9	25.9	47.2	26.5	24.8	48.6	18.8	20.2	61.1	24.3	23.5	52.3
West Virginia	26.2	26.3	47.5	27.8	23.5	48.7	20.6	20.1	59.4	26.0	22.6	51.4
North Carolina	30.1	26.3	43.7	29.4	25.4	45.3	21.8	22.3	56.0	27.9	24.8	47.3
South Carolina	30.3	27.9	41.8	29.1	27.0	43.9	20.2	21.9	57.9	27.6	26.1	46.3
Georgia	29.4	27.6	43.0	28.2	26.5	45.4	18.5	21.2	60.2	25.7	25.2	49.1
Florida	26.4	26.7	46.9	24.6	23.8	51.6	18.5	19.6	61.9	22.4	22.2	55.4
Kentucky	26.9	25.1	48.0	26.4	24.0	49.6	17.0	18.9	64.1	24.0	22.7	53.4
Tennessee	26.9	25.7	47.4	26.5	24.9	48.6	17.9	20.6	61.5	24.3	23.8	52.0
Alabama	29.1	27.2	43.7	28.1	26.0	45.9	19.8	21.4	58.8	26.3	25.0	48.7
Mississippi	27.0	27.3	45.7	26.3	26.4	47.3	18.5	22.1	59.4	25.2	25.8	48.9
Arkansas	27.8	26.7	45.5	27.0	25.6	47.4	18.9	21.0	60.1	25.6	24.9	49.5
Louisiana	28.3	27.9	43.9	27.1	26.3	46.6	18.4	21.3	60.3	24.0	24.6	51.4
Oklahoma	28.6	27.0	44.4	27.5	25.6	46.9	19.4	20.7	59.9	25.4	24.3	50.4
Texas	27.4	27.0	45.6	26.2	25.8	48.0	18.5	20.8	60.7	23.7	24.1	52.1
Montana	26.2	19.4	54.4	25.1	18.7	56.1	19.0	17.6	63.4	23.2	18.4	58.4
Idaho	27.4	23.5	49.1	25.9	21.7	52.4	20.9	20.1	58.9	24.5	21.3	54.2
Wyoming	25.6	20.9	53.5	23.7	18.8	57.5	19.0	16.6	64.4	22.3	18.1	59.5
Colorado	25.9	22.6	51.5	24.6	21.3	54.2	16.0	17.5	66.4	20.4	19.5	60.1
New Mexico	27.4	24.6	48.1	26.7	23.1	50.2	21.4	21.6	57.0	25.7	22.9	51.4
Arizona	27.5	24.2	48.3	28.2	21.2	53.7	20.6	18.4	61.0	23.6	20.2	56.2
Utah	29.5	27.0	43.6	29.4	24.0	46.6	22.8	21.6	55.5	26.2	22.9	50.9
Nevada	21.8	18.7	59.5	18.1	15.1	66.9	14.9	15.2	69.9	17.4	15.1	67.5
Washington	22.2	22.1	55.7	21.5	19.9	58.6	16.6	16.6	66.9	18.8	18.0	63.2
Oregon	21.3	21.3	57.4	20.8	20.0	59.2	16.1	16.8	67.2	18.4	18.4	63.2
California	20.5	18.6	60.9	19.4	17.3	63.3	14.7	15.6	69.7	16.2	16.1	67.6
United States	25.7	24.7	49.5	24.6	23.0	52.4	19.0	18.5	62.5	21.7	20.7	57.6

Division of Farm Population and Rural Life. Compiled from reports of Bureau of the Census.
See footnotes to Table 719.

TABLE 723.—*Average weight per carload of freight originating on Class I railroads in the United States, 1920–1924*

Commodity	1920	1921	1922	1923	1924	1925 [1]
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Wheat	40.21	39.89	40.17	40.35	40.78	40.93
Corn	36.45	38.07	38.38	37.88	37.57	37.31
Oats	31.20	30.55	30.07	31.04	31.52	32.00
Flour and meal	30.27	25.63	24.94	25.02	24.37	24.42
Hay, straw, and alfalfa	12.38	12.46	12.35	12.33	12.45	12.54
Tobacco	12.14	10.92	11.09	10.84	10.67	10.68
Cotton	12.17	11.57	11.50	11.29	11.25	11.15
Citrus fruits	16.68	16.22	15.40	15.04	15.63	16.00
Potatoes	18.77	18.24	18.20	17.87	17.96	17.71
Horses and mules	11.47	11.39	11.30	11.26	11.45	11.53
Cattle and calves	11.59	11.62	11.56	11.53	11.54	11.55
Sheep and goats	9.93	9.75	9.79	9.73	9.69	9.68
Hogs	9.61	9.51	9.61	9.55	9.50	9.55
Poultry	11.51	10.95	11.02	11.15	11.09	11.05
Eggs	11.58	11.18	11.19	11.27	11.22	11.22
Butter and cheese	12.90	12.18	12.37	12.65	12.49	12.61
Wool	12.48	12.20	11.63	12.37	12.53	12.78
Sugar, sirup, glucose, and molasses	28.98	27.68	27.54	27.53	27.87	28.00
Canned goods	24.78	23.13	23.09	22.92	22.88	23.02
Anthracite coal	48.28	47.53	47.85	48.45	49.06	49.17
Bituminous coal	49.27	50.45	50.80	51.28	51.72	52.37
Textiles	13.20	11.82	11.72	11.61	11.56	11.74
Lumber, timber, box shooks, staves, and headings	27.04	26.08	26.31	26.76	26.30	26.29

Division of Statistical and Historical Research. Compiled from reports of the Interstate Commerce Commission.

[1] Subject to revision.

TABLE 724.—*Freight tonnage originating on railways in the United States, 1920–1925*

Commodity	Calendar year					
	1920	1921	1922	1923	1924	1925 [1]
FARM PRODUCTS						
Animal products:	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*
Animals, live—						
Horses and mules	936	428	491	603	531	544
Cattle and calves	9,809	8,522	9,567	0,400	9,316	9,331
Sheep and goats	1,344	1,175	1,159	1,159	1,215	1,224
Hogs	5,421	5,504	5,795	6,944	6,707	5,501
Packing-house products—						
Fresh meats	2,770	2,578	2,614	3,023	3,001	2,904
Hides and leather	1,051	972	1,081	1,090	1,025	1,026
Other packing-house products	2,206	2,094	2,049	2,397	2,395	2,139
Total packing-house products	6,027	5,644	5,744	6,510	6,421	6,069
Eggs	536	551	565	597	572	591
Butter and cheese	425	434	507	571	649	686
Poultry	264	276	292	366	376	357
Wool	292	400	360	291	294	263
Other animals and products	1,540	1,329	1,750	1,814	1,668	1,758
Total animal products	26,594	24,263	26,230	28,255	27,749	26,324
Vegetable products:						
Cotton	3,379	3,191	3,074	2,887	3,261	4,127
Fruits and vegetables	10,045	9,255	9,683	10,398	10,868	11,586
Potatoes	4,118	4,639	4,829	4,698	4,590	4,614

[1] Subject to revision.

TABLE 724.—*Freight tonnage originating on railways in the United States, 1920–1925*—Continued

Commodity	Calendar year					
	1920	1921	1922	1923	1924	1925 [1]
FARM PRODUCTS—continued						
Vegetable products—Continued.						
Grain and grain products—						
Grain—						
Wheat	*1,000 short tons* 23,131	*1,000 short tons* 29,039	*1,000 short tons* 24,805	*1,000 short tons* 23,091	*1,000 short tons* 27,442	*1,000 short tons* 21,548
Corn	12,689	17,218	19,275	15,151	14,883	12,680
Oats	8,615	7,542	7,646	8,332	8,507	8,450
Other grain	5,669	4,568	5,245	4,739	5,616	4,564
Grain products—						
Flour and meal	10,952	10,553	10,694	10,518	10,330	9,901
Other mill products	8,891	7,881	9,000	10,002	10,083	9,578
Total grain and grain products	69,947	76,801	76,665	71,833	76,861	66,721
Hay, straw and alfalfa	7,957	5,154	5,723	5,965	5,802	5,567
Sugar, sirup glucose and molasses	5,564	4,757	5,061	4,891	5,356	5,069
Tobacco	1,081	927	882	1,099	1,069	1,038
Other vegetable products	15,251	15,786	11,868	13,406	15,277	17,120
Total vegetable products	117,442	119,920	117,815	115,177	123,984	116,382
Canned goods (food products)	3,674	2,627	3,106	3,435	3,731	4,143
Total farm products	147,110	146,810	147,151	146,867	154,564	146,849
OTHER FREIGHT						
Products of mines	712,154	511,271	532,998	713,735	638,590	678,335
Products of forests	100,766	76,419	89,059	115,618	108,090	107,387
Manufactures	242,189	163,691	211,308	258,471	246,132	273,986
Merchandise, all l. c. l. freight	53,202	41,992	43,229	44,339	40,551	40,580
Total tonnage	1,255,421	940,183	1,023,745	1,279,030	1,188,157	1,247,137

Division of Statistical and Historical Research. Compiled from reports of the Interstate Commerce Commission.

[1] Subject to revision.

TABLE 725.—*Index numbers showing changes in freight rates of 50 representative agricultural products, by months, 1909–1925*

[Average for year 1913=100]

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
1909	100.0	100.0	99.9	99.9	99.9	99.9	99.9	100.0	100.1	100.1	99.9	99.9	100.0
1910	99.9	100.3	100.3	100.3	100.3	100.5	100.5	100.5	100.5	100.5	100.5	100.4	100.4
1911	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.5	100.4
1912	100.5	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.5	100.5	100.5	100.4
1913	100.5	100.5	100.5	100.5	100.5	100.5	100.2	99.5	99.3	99.3	99.3	99.3	100.0
1914	99.3	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.4	99.5	99.6	99.4
1915	99.7	100.0	100.2	100.2	100.3	100.3	100.3	100.3	100.3	100.5	100.4	100.4	100.2
1916	100.6	100.6	100.6	100.6	100.6	100.6	100.6	100.6	100.7	100.7	100.7	100.7	100.6
1917	100.7	100.7	100.8	100.8	100.8	100.8	100.8	101.6	101.9	102.2	102.4	102.4	101.3
1918	102.4	102.4	102.4	103.2	103.3	108.8	130.7	130.7	130.7	130.5	130.3	130.3	117.1
1919	130.3	130.3	130.4	130.5	130.5	130.8	130.8	130.5	130.7	131.4	131.4	131.6	130.8
1920	131.8	131.8	132.1	132.1	132.1	131.9	131.7	140.2	176.1	176.1	176.1	176.3	147.4
1921	176.8	176.8	177.3	177.8	177.8	177.8	177.7	177.4	177.2	176.1	175.8	175.8	177.0
1922	160.5	160.5	160.5	160.7	160.3	159.4	157.2	157.2	157.5	157.9	157.9	157.9	159.0
1923	157.9	157.9	157.9	157.9	157.9	157.9	157.9	157.9	157.9	157.9	157.9	157.9	157.9
1924	157.9	157.9	157.9	157.9	157.9	157.9	157.7	157.5	157.5	157.5	157.5	157.5	157.7
1925	157.5	157.5	157.5	157.5	157.5	157.5	157.5	157.5	157.5	157.5	157.5	157.5	157.5

Division of Statistical and Historical Research.

TABLE 726.—*Wheat: Index numbers of freight rates, from representative points in producing regions in the United States to their terminal markets, 1913–1925*

Wheat areas	Year beginning July 1—												
	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925 [1]
Spring [2]	100	100	101	101	101	127	127	161	160	149	149	149	150
Western [3]	100	100	100	100	100	126	126	154	148	140	140	140	140
Winter [4]	100	101	100	101	101	129	128	166	162	152	152	152	152
Hard winter [5]	100	100	100	100	100	128	128	165	160	150	150	150	150
Hard winter, excluding export rates [6]	100	100	99	99	99	124	123	158	154	143	143	143	143

Division of Statistical and Historical Research.

These relatives are based on the average of the monthly rates in effect during the crop year. Rates in effect in 1913 equal 100.

[1] These rates in effect up to Dec. 1.

[2] Based on local rates from Larimore, Leal, Makota, N. Dak., Groton, S. Dak., Scobey, Mont., and Osakis, Minn., to Minneapolis, Minn. The same rates apply to Duluth except from Groton, S. Dak., and Osakis, Minn. No proportional rates available.

[3] Based on local rates from Colfax, Wash., to Portland, Oreg., Moscow, Idaho, to Seattle, Wash., and Pendleton, Oreg., to Portland, Oreg. No export rates available.

[4] Based on local rates from Minden, Nebr., Wray, Colo., Brewster, Kans., Great Bend, Kans., Hutchinson, Kans., and Cherokee, Okla., to Kansas City, Mo.; Marshall, Mo., to St. Louis, Mo.; LaPrairie, Ill., to St. Louis, Mo.; and export rates from Wichita, Kans., to Galveston, Tex.; and Enid, Okla., to New Orleans, La.

[5] Based on all rates named in note 4 except the rate from LaPrairie, Ill., to St. Louis, Mo.

[6] Based on all rates named in note 4 except rate from LaPrairie, Ill., to St. Louis, Mo., and the export rates from Wichita, Kans., to Galveston, Tex., and Enid, Okla., to New Orleans, La.

TABLE 727.—*Wheat: Freight rates to specified destinations from selected points of origin, 1913–1925*

Producing region, destination, and point of origin	Date effective	Rate per 100 pounds
Spring-wheat region: [1]		
Minneapolis and Duluth—		*Cents*
From Larimore, N. Dak.	Jan. 1, 1913	12
	June 25, 1918	15
	Aug. 26, 1920	20.5
	Jan. 1, 1922	17.5
	Nov. 27, 1925	17.5
From Leal, N. Dak.	Jan. 1, 1913	13
	Oct. 5, 1915	13.5
	June 25, 1918	17
	Aug. 26, 1920	23
	Jan. 1, 1922	20
	Aug. 10, 1925	21
	Nov. 27, 1925	21
From Makoti, N. Dak.	Jan. 1, 1913	17
	June 25, 1918	21.5
	Aug. 26, 1920	29
	Jan. 1, 1922	25.5
	Nov. 27, 1925	25.5
From Groton, S. Dak. [2]	Jan. 1, 1913	14.5
	June 25, 1918	18
	Aug. 26, 1920	24.5
	Jan. 1, 1922	21
	Oct. 23, 1924	20.5
	Nov. 27, 1925	20.5
From Scobey, Mont. [3]	Jan. 1, 1913	26
	June 25, 1918	32
	Aug. 26, 1920	43
	Nov. 22, 1920	42.5
	Jan. 1, 1922	37.5
	Nov. 27, 1925	37.5
From Osakis, Minn. [2]	Jan. 1, 1913	8
	Mar. 25, 1914	8.2
	June 25, 1918	10.5
	Aug. 26, 1920	14
	Jan. 1, 1922	12.5
	Nov. 27, 1925	12.5
Pacific coast region: [4]		
Portland, Oreg.—		*Cents*
From Colfax, Wash.	Jan. 1, 1913	17
	June 25, 1918	21.5
	Aug. 26, 1920	27
	Jan. 7, 1922	24
	Nov. 27, 1925	24
From Pendleton, Oreg.	Jan. 1, 1913	13.5
	June 25, 1918	17
	Aug. 26, 1920	21.5
	July 1, 1921	20.5
	Jan. 7, 1922	18.5
	Nov. 27, 1925	18.5
Seattle, Wash.—		
From Moscow, Idaho.	Jan. 1, 1913	17
	June 25, 1918	21.5
	Aug. 26, 1920	27
	Jan. 7, 1922	24
	Nov. 27, 1925	24
Winter-wheat region: [5]		
Kansas City, Mo.—		
From Brewster, Kans.	Jan. 1, 1913	14.5
	June 25, 1918	18
	Dec. 1, 1919	17.5
	Aug. 26, 1920	23.5
	Jan. 1, 1922	20.5
	Nov. 27, 1925	20.5
From Great Bend, Kans.	Jan. 1, 1913	13.25
	June 25, 1918	16.5
	Aug. 26, 1920	22.5
	Dec. 27, 1921	19.5
	Nov. 27, 1925	19.5
From Hutchinson, Kans.	Jan. 1, 1913	13
	June 25, 1918	16.5
	Dec. 1, 1919	16
	Aug. 26, 1920	21.5
	Dec. 27, 1921	19
	Nov. 27, 1925	19

[1] These are local rates. No reshipping rate available.

[2] This rate applies only to Minneapolis.

[3] This station not established until Nov. 20, 1913.

[4] These are domestic rates. No export rates available.

[5] Local rates are used except as otherwise stated.

TABLE 727.—*Wheat: Freight rates to specified destinations from selected points of origin, 1913–1925*—Continued

Producing region, destination, and point of origin	Date effective	Rate per 100 pounds
Winter-wheat region—Con.		
Kansas City, Mo.—Continued.		
From Cherokee, Okla.		*Cents*
	Jan. 1, 1913	15
	June 25, 1918	19
	Aug. 26, 1920	25.5
	Dec. 27, 1921	22.5
	Nov. 27, 1925	22.5
From Beatrice, Nebr.		
	Jan. 1, 1913	11.3
	June 25, 1918	14
	Dec. 1, 1919	14.5
	Aug. 26, 1920	19.5
	Jan. 1, 1922	17
	Nov. 27, 1925	17
From Minden, Nebr.	Jan 1, 1913	15.6
	June 25, 1918	19.5
	Dec. 1, 1919	18.5
	Aug. 26, 1920	25
	Jan. 2, 1922	21.5
	Nov. 27, 1925	21.5
From Wray, Colo.	Jan. 1, 1913	16.5
	June 25, 1918	20.5
	Dec. 1, 1919	19.5
	Aug. 26, 1920	26.5
	Jan. 2, 1922	23
	Nov. 27, 1925	23
St. Louis, Mo.—		
From Marshall, Mo.	Jan. 1, 1913	13
	July 30, 1915	12
	June 25, 1918	15
	Aug. 26, 1920	20.5
Winter-wheat region—Con.		
St. Louis, Mo.—Con.		
From Marshall, Mo.		*Cents*
	Jan. 1, 1922	17.5
	Nov. 27, 1925	17.5
From LaPrairie, Ill.	Jan. 1, 1913	8
	Jan. 8, 1914	9
	June 25, 1918	11.5
	Aug. 26, 1920	16
	Jan. 1, 1922	14
	Nov. 15, 1922	14.5
	Nov. 27, 1925	14.5
Galveston, Tex.—		
From Wichita, Kans.[6]	Jan. 1, 1913	25
	Feb. 10, 1915	25.7
	Mar. 12, 1917	26.5
	June 25, 1918	36.5
	Dec. 30, 1919	37.5
	Aug. 26, 1920	50.5
	Sept. 12, 1921	47.5
	Dec. 27, 1921	44
	Nov. 27, 1925	44
New Orleans, La.—		
From Enid, Okla.[6]	Jan. 1, 1913	24.5
	Feb. 5, 1916	25.5
	Mar. 12, 1917	26
	June 25, 1918	35
	Dec. 30, 1919	37
	Aug. 26, 1920	50
	Sept. 12, 1921	47.5
	Jan. 1, 1922	41
	Apr. 5, 1922	43.5
	Nov. 27, 1925	45.5

Division of Statistical and Historical Research. Rates furnished by the Interstate Commerce Commission.

[6] Export rate.

TABLE 728.—*Wheat: Weighted average freight rates to Duluth from points in the spring wheat region, December 1925*

Point of origin [1]	Rate per bushel
Minnesota:	*Cents*
Winger	9.9
Dawson	12.3
Fairfax	11.4
Lambertson	11.7
Waseca	11.1
Dodge Center	11.4
State average [2]	12.4
Montana:	
Teton	25.2
Scobey	22.5
Harlowton	25.2
Glendive	18.6
Bozeman	25.2
State average	23.20
North Dakota:	
Stanley	15.9
Rugby	13.5
Lakota	11.7
North Dakota—Continued	
Dodge	17.7
Jamestown	12
Walden	11.7
Dickinson	16.8
Bismarck	14.1
LaMoure	12.6
State average [2]	13.69
South Dakota:	
Lemmon	18.6
Faulkton	18.9
Watertown	13.8
Rapid City	25.5
Miller	17.7
Madison	15.3
Melvin	27.9
Murdo-Mackenzie	23.7
Parker	15.9
State average [2]	17.01

Division of Statistical and Historical Research.
Compiled from rates furnished by the Interstate Commerce Commission.

[1] One point of origin, within each crop-reporting district, was chosen as representative for that district.
[2] State average rates are weighted by the 1919 acreages for each crop-reporting district.

TABLE 729.—*Wheat: Comparative freight rates to Liverpool from producing regions in the United States, Canada, Argentina, Australia, and India, 1925*

Producing region and route	Rate per bushel [1]
Summary, by countries:	
United States—	
Spring wheat via Lakes and New York	*Cents* 36.9
Winter wheat via Chicago, Lakes and New York	40.1
Wichita, Kans., via Gulf	37.5
Canada via Lakes and Montreal	33.1
Argentina	26.6
Australia	31.3
India	34.7
United States:	
Spring wheat region—	
1. Average rate to Duluth [2]	16.0
2. Duluth to Buffalo (via Lakes) [3]	2.7
3. Buffalo to New York (rail) [4]	9.1
4. New York to Liverpool [5]	9.1
Total	36.9
Winter wheat region—	
1. Average Kansas rate to Kansas City [6]	9.6
2. Kansas City to Chicago [4]	10.5
3. Chicago to Buffalo (Lake) [7]	1.8
4. Buffalo to New York [4]	9.1
5. New York to Liverpool [5]	9.1
6. Chicago to New York (all rail) 13.5 [4]	
Total	40.1
1. Wichita, Kans., to Galveston [4]	26.4
2. Galveston to Liverpool [5]	11.1
Total	37.5
Canada:	
1. Average rate from wheat area to Port Arthur [2]	*Cents* 13.4
2. Port Arthur to Montreal (all water) [8]	9.0
3. Montreal to Liverpool [5]	10.7
Total	33.1
1. Average rate from wheat area to Port Arthur [2]	13.4
2. Port Arthur to Georgian Bay [8]	3.4
3. Georgian Bay to Montreal (rail) [9]	8.6
4. Montreal to Liverpool [5]	10.7
Total	36.1
Argentina:	
1. Average freight rate to Rosario [10]	11.3
2. Average rate Rosario to Liverpool [5]	15.3
Total	26.6
Australia:	
1. Average rate to seaport [11]	8.0
2. Average ocean rate to Liverpool [5]	23.3
Total	31.3
India:	
1. Average rate to Karachi [12]	20.1
2. Karachi to Liverpool [5]	14.6
Total	34.7

Division of Statistical and Historical Research.

[1] Exclusive of handling charges.
[2] Compiled from 1925 rates furnished by the Interstate Commerce Commission.
[3] Compiled from 1924 report of Duluth Board of Trade. Average monthly rates weighted by shipments.
[4] Interstate Commerce Commission.
[5] Rates from 1924 Agricultural Year book, Table 739, weighted by exports.
[6] Average of rates from typical points in crop-reporting districts, weighted by acreage. Rates from Interstate Commerce Commission.
[7] 1924 report of Chicago Board of Trade.
[8] Compiled from 1924 report on the Grain Trade of Canada. Rates weighted by shipments.
[9] Board of Railway Commissioners of Canada.
[10] Report No. 188898 of American Consul at Rosario, Argentina, Oct. 14, 1925.
[11] Report No. 189859 of American Consul at Newcastle, N. S. W., Australia, Oct. 19, 1925.
[12] Report No. 187675 of American Consul at Karachi, India, Oct. 2, 1925.

TABLE 730.—*Apples: Car-lot freight rates to specified destinations from selected points of origin, 1913–1925*

Destination and point of origin	Date effective	Rate per 100 pounds
		Cents
Chicago, New York, Philadelphia, and Boston:		
From Yakima, Wash., Hood River, Oreg., Medford, Oreg., and Watsonville, Calif.	Jan. 1, 1913	100.0
	June 25, 1918	125.0
	Oct. 23, 1918	110.0
	May 13, 1919	125.0
	Aug. 26, 1920	166.5
	July 21, 1921 and present.	150.0
Chicago:		
From Marionville, Mo.	Jan. 1, 1913	35.0
	Oct. 16, 1917	35.2
	June 25, 1918	44.0
	Aug. 26, 1920	60.0
	Jan. 1, 1922	54.0
	Nov. 1, 1924 and present.	55.0
From Winchester, Va.	Jan. 1, 1913	27.0
	June 1, 1915	28.5
	July 16, 1917	33.0
	June 25, 1918	42.0
	Aug. 26, 1920	59.0
	June 20, 1921	60.0
	July 1, 1922 and present.	53.5
From Rochester, N. Y.	Jan. 1, 1913	21.0
	Jan. 15, 1915	22.5
	July 16, 1917	21.0
	Jan. 5, 1918	25.0
	June 25, 1918	31.5
	Aug. 26, 1920	44.0
	July 1, 1922 and present.	39.5
New York:		
From Marionville, Mo.	Jan. 1, 1913	57.0
	Jan. 15, 1915	58.5
	July 16, 1917	64.0
	July 28, 1917	63.0
	June 25, 1918	79.0
	Feb. 15, 1919	80.0
	Aug. 26, 1920	110.5
	Jan. 1, 1922	107.0
	July 1, 1922 and present.	99.5
From Winchester, Va.	Jan. 1, 1913	18.0
	Feb. 23, 1915	18.9
	Aug. 1, 1917	21.5
	June 25, 1918	27.0
	Aug. 26, 1920	38.0
	Jan. 1, 1922 and present.	34.0
From Rochester, N. Y.	Jan. 1, 1913	15.0
	Feb. 23, 1915	15.8
	Aug. 1, 1917	18.0
	June 25, 1918	22.5
	Aug. 26, 1920	31.5
	Jan. 1, 1922 and present.	28.5
Philadelphia, Pa.:		
From Marionville, Mo.	Jan. 1, 1913	55.0
	Jan. 15, 1915	56.5
	July 16, 1917	62.0
	July 28, 1917	61.0
	June 25, 1918	76.5
	Feb. 15, 1919	78.0
	Aug. 26, 1920	108.5
	Jan. 1, 1922	105.0
	July 1, 1922 and present.	97.5
From Winchester, Va.	Jan. 1, 1913	16.0
	Feb. 23, 1915	16.8
	Aug. 1, 1917	19.5
	June 25, 1918	24.5
	Dec. 31, 1919	25.0
	Aug. 26, 1920	35.0
	Jan. 3, 1922	36.0
	July 1, 1922	32.5
	Mar. 1, 1923 and present	32.0
From Rochester, N. Y.	Jan. 1, 1913	15.0
	Feb. 23, 1915	15.8
	Aug. 1, 1917	18.0
	June 25, 1918	22.5
	Aug. 26, 1920	31.5
	Jan. 1, 1922 and present.	28.5
Boston, Mass.:		
From Marionville, Mo.	Jan. 1, 1913	60.0
	Jan. 15, 1915	61.5
	July 16, 1917	67.0
	July 28, 1917	66.0
	June 25, 1918	82.5
	Feb. 15, 1919	83.0
	Aug. 26, 1920	113.5
	Jan. 1, 1922	110.0
	July 1, 1922 and present.	102.5
From Winchester, Va.	Jan. 1, 1913	20.5
	Feb. 5, 1915	21.4
	Aug. 13, 1917	24.0
	June 25, 1918	30.0
	Dec. 29, 1919	29.5
	Aug. 26, 1920	41.5
	Jan. 3, 1922	40.5
	July 1, 1922 and present.	36.5
From Rochester, N. Y.	Jan. 1, 1913	17.5
	Feb. 23, 1915	18.4
	Aug. 1, 1917	20.5
	June 25, 1918	25.5
	Dec. 31, 1919	25.0
	Aug. 26, 1920	35.0
	Jan. 1, 1922	31.5
	Oct. 15, 1922	30.5
	June 1, 1923 and present.	33.5

Division of Statistical and Historical Research. Compiled from rates furnished by the Interstate Commerce Commission.

TABLE 731.—*Freight rates, ocean: Wheat per bushel to the United Kingdom from the United States, Canada, Argentina, India, and Australia, 1913, 1924, and 1925*

Month	United States										Canada		Argentina			India			Australia		
	North Atlantic ports [1]			New York [2]			New Orleans [3]		North Pacific ports [4]												
	1913	1924	1925	1913	1924	1925	1924	1925	1924	1925	1924	1925	1913	1924	1925	1913	1924	1925	1913	1924	1925
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Jan.	10	9	10	9	8	8	8	12	23	22	9	9	14	15	15	12	16	17	24	25	30
Feb.	10	11	10	6	10	7	8	12	23	23	11	10	16	17	13	12	17	17	22	27	31
Mar.	9	10	9	6	9	6	9	12	21	22	11	9	14	17	10	12	16	16	22	25	26
Apr.	8	9	9	6	7	5	9	12	20	22	10	9	12	16	10	11	15	15	20	20	23
May	8	9	9	7	8	5	11	12	20	22	10	9	11	16	10	11	15	13	20	19	23
June	7	8	6	5	5	5	11	12	19	21	9	7	8	14	8	11	14	12	20	18	20
July	8	7	7	5	4	5	11	12	19	20	8	8	9	12	9	12	13	12	20	19	18
Aug.	9	8	7	5	5	5	11	13	18	21	9	8	10	13	11	12	13	14	19	19	23
Sept.	8	9	8	4	6	7	11	12	19	21	11	8	8	14	8	11	15	16	19	25	25
Oct.	7	9	9	5	8	9	11	12	22	20	11	10	6	14	9	10	16	15	21	27	26
Nov.	7	10	9	5	9	9	11	12	22	21	11	11	6	13	12	11	16	15	21	29	26
Dec.	6	9	10	4	8	10	12	12	22	23	10	10	6	15	13	10	16	14	20	28	27
Average	8	9	9	6	7	7	10	12	21	22	10	9	10	15	11	11	15	15	21	23	25

Division of Statistical and Historical Research. Compiled from Reports of the International Institute of Agriculture, except as otherwise indicated. The above rates were originally quoted in shillings; conversions made on the basis of the average monthly rate of exchange, except in 1913, when exchange was at par.

[1] Average of principal North Atlantic ports, including New York.
[2] New York to Liverpool.
[3] From U. S. Shipping Board.
[4] Average of principal North Pacific ports.

FERTILIZER MATERIALS AND FERTILIZER

TABLE 732.—*Pyrites: Production and price, by States, 1918–1924*

PRODUCTION

State	1918	1919	1920	1921	1922	1923	1924
	Long tons	*Long tons*	*Long tons*	*Long tons*	*Long tons*	*Long tons*	*Long tons*
Colorado	18,817	17,474	25,523	7,290	----------	----------	----------
Georgia	31,315	34,412	----------	----------	----------	----------	----------
California	111,861	128,803	128,114	98,252	----------	(1)	(1)
Illinois	24,369	13,353	----------	----------	----------	----------	----------
New York	63,982	60,544	30,753	----------	5,900	11,060	7,593
Missouri	7,674	----------	----------	----------	----------	----------	----------
Ohio	9,845	4,609	----------	----------	----------	138	73
Virginia	143,427	119,164	100,545	----------	----------	(1)	(1)
Wisconsin	----------	26,053	----------	----------	600	190	121
Other States	53,204	16,235	25,842	----------	----------	----------	----------
Total	464,494	420,647	310,777	[1] 157,118	[1] 169,043	[1] 181,628	[1] 160,096

[1] Totals include production for States not separately reported. The combined production of California and Virginia was 170,300 long tons in 1923 and 152,309 long tons in 1924.

TABLE 732.—*Pyrites: Production and price, by States, 1918–1924*—Continued

AVERAGE PRICE PER TON

State	1918	1919	1920	1921	1922	1923	1924
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Colorado	6.15	4.88	4.84	2.53			
Georgia	8.58	10.16					
California	4.48	4.12	4.05	4.76			
Illinois	3.52	3.49					
New York	6.61	7.73	8.51				
Missouri	9.02						
Ohio	4.08	3.66				3.66	
Virginia	5.86	7.48	6.07				
Wisconsin		.74			2.75		
Other States	5.62	9.24	3.19				
Average	5.69	6.08	5.14	4.53	3.97	3.64	4.03

Division of Statistical and Historical Research. Compiled from reports of the Geological Survey. Figures for 1904–1917 are published in the Yearbook for 1923.

TABLE 733.—*Phosphate rock: Production, and value per ton, based on the quantity marketed, by States, 1921–1924*

State and item	1921		1922		1923		1924	
	Quantity	Value per ton	Quantity	Value per ton	Quantity	Value per ton	Quantity	Value per ton
Florida:	*Long tons*	*Dolls.*	*Long tons*	*Dolls.*	*Long tons*	*Dolls.*	*Long tons*	*Dolls.*
Hard rock	175,774	10.28	188,084	6.96	199,516	5.37	143,115	4.40
Soft rock	4,419	4.56	446	7.85				
Land pebble	1,599,835	5.38	1,870,063	3.76	2,348,137	3.40	2,289,466	3.23
Total	1,780,028	5.86	2,058,593	4.05	2,547,653	3.56	2,432,581	3.30
South Carolina:								
Land rock			1,500	5.50				
Tennessee:								
Brown rock	252,543	6.60	344,231	5.97	[1] 427,799	5.46	[1] 375,260	5.22
Blue rock	25,163	5.81	9,078	5.71	919	6.14	21,378	3.82
Total	277,706	6.53	353,309	5.96	[1] 428,718	5.46	[1] 396,638	5.14
Other States	6,291	4.11	4,481	4.39	30,335	5.79	38,570	5.04
Grand total	2,064,025	5.95	2,417,883	4.34	3,006,706	3.85	2,867,789	3.57

Division of Statistical and Historical Research. Compiled from reports of Geological Survey. Figures for 1891–1920 are published in the Yearbook for 1923.

[1] Includes brown rock from Kentucky.

TABLE 734.—*Lime, for agricultural purposes: Production and value, by States, 1917–1924*

PRODUCTION

State	1917	1918	1919	1920	1921	1922	1923	1924
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Alabama	1,791	1,947					(1)	
California	6,196	850			559	2,756		3,251
Connecticut							(1)	(1)
Indiana	2,297	1,303	5,868	3,475	1,182	5,017	4,926	5,157
Kentucky							(1)	
Maine	10,243	8,017	8,763	7,810	8,207	8,912	7,678	8,166
Maryland	85,633	68,807	76,770	64,193	50,543	44,053	41,109	40,628
Massachusetts	5,073	3,089	4,673	4,552	2,902	4,628	3,960	4,928
Missouri	4,317	193	1,123	1,891		1,081	1,014	
New Jersey	5,002	2,208	4,154	2,997		2,078	(1)	
New York	9,588	5,931	6,206	3,323	3,917	2,751	3,668	3,988
Ohio	29,997	40,001	27,696	11,195	16,969	25,332	17,497	19,686
Pennsylvania	246,608	200,073	232,831	202,830	152,667	137,460	112,011	116,966
Tennessee	1,904	3,311	730	377	614	1,392	1,325	791
Vermont	502	2,201	2,072	752	1,278	1,111	1,571	829
Virginia	44,335	34,444	35,712	26,974	21,793	16,420	21,294	19,906
West Virginia	21,999	16,053	25,253	17,449	17,746	15,287	16,719	18,289
Wisconsin	954	241	433	356	145	657		(3)
Other States	10,931	1,555	4,698	2,280	5,768	3,192	5,329	4,095
Total	487,370	390,224	436,982	350,454	284,290	272,127	238,101	[2] 248,336
Hawaii				475	75			
Porto Rico	927	823	1,650	922	357	599	1,466	
Total	488,297	391,047	438,632	351,851	284,722	272,726	[3] 240,551	[2] 248,336

VALUE

	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Alabama	9,816	17,436						
California	32,447	8,304			4,988	35,774		44,992
Connecticut								(1)
Indiana	12,143	6,122	49,461	33,210	11,328	39,741	42,889	35,622
Kentucky							(1)	
Maine	35,216	46,168	59,558	39,157	51,978	48,283	38,256	40,424
Maryland	468,081	534,852	655,704	614,097	441,085	351,482	374,125	355,776
Massachusetts	18,185	35,450	25,532	26,096	15,082	19,163	14,042	17,995
Missouri	26,844	1,706	8,540	20,770		11,736	10,978	
New Jersey	18,978	12,268	21,997	23,920		18,382	(1)	
New York	40,540	27,868	34,574	23,912	30,334	22,613	25,559	30,215
Ohio	161,205	275,561	212,156	99,219	125,844	177,571	127,758	134,943
Pennsylvania	1,218,316	1,343,636	1,706,627	1,792,948	1,183,361	1,021,092	838,010	883,225
Tennessee	9,835	15,333	6,020	2,465	5,217	11,752	11,591	5,407
Vermont	1,380	8,288	15,474	5,157	7,687	6,262	10,784	4,277
Virginia	235,568	232,204	290,032	208,190	161,653	109,968	153,152	130,571
West Virginia	106,892	116,554	191,125	160,091	136,982	101,075	112,374	122,594
Wisconsin	5,024	502	4,754	1,824	666	4,523		(2)
Other States	74,938	10,267	49,495	25,944	54,154	21,814	49,010	47,824
Total	2,470,408	2,692,519	3,330,449	3,077,000	2,230,359	2,001,231	1,808,528	[2] 1,864,514
Hawaii				8,313	1,500			
Porto Rico	5,323	6,329	14,590	11,392	5,651	3,851	9,493	
Total	2,475,731	2,698,848	3,345,039	3,096,705	2,237,510	2,005,082	[3] 1,825,519	[2] 1,864,514

Division of Statistical and Historical Research. Compiled from reports of Geological Survey.

[1] Included in other States.
[2] Totals include some chemical lime in Wisconsin and nonspecified States.
[3] Totals include Texas production of 984 tons, valued at $7,498.

TABLE 735.—*Lime and peat, for fertilizer: Production and value, United States, 1909–1924*

Year	Quantity			Value		
	Hydrated lime	Limestone pulverized	Peat	Hydrated lime	Limestone pulverized	Peat
	Short tons	*Short tons*	*Short tons*	*Dollars*	*Dollars*	*Dollars*
1909	----------	----------	26,768	----------	----------	118,891
1910	----------	----------	37,924	----------	----------	140,209
1911	----------	174,290	51,733	----------	205,006	257,204
1912	----------	290,690	41,086	----------	311,762	186,922
1913	----------	408,627	28,460	----------	493,718	169,600
1914	126,136	615,197	37,729	548,692	688,961	249,899
1915	----------	810,399	38,304	----------	893,530	258,447
1916	184,944	1,066,376	48,106	869,654	1,146,582	345,004
1917	177,815	1,040,248	92,263	1,114,359	1,352,397	658,590
1918	181,890	1,091,918	79,573	1,452,436	1,626,252	776,313
1919	198,165	1,392,914	54,690	1,784,110	2,409,460	557,240
1920	148,981	1,364,260	63,272	1,525,958	2,724,209	773,635
1921	142,582	1,311,520	29,460	1,297,192	2,355,339	284,046
1922	150,423	1,196,000	57,747	1,254,894	2,150,435	369,145
1923	131,443	1,278,770	57,907	1,176,637	2,160,249	351,841
1924	128,410	----------	55,196	1,160,822	----------	387,349

Division of Statistical and Historical Research. Compiled from reports of Geological Survey.

TABLE 736.—*Phosphate rock, pyrites, and marl: Production and value for fertilizer, United States, 1909–1924*

Year	Quantity			Value		
	Phosphate rock	Pyrites	Calcareous marl	Phosphate rock	Pyrites	Calcareous marl
	Long tons	*Long tons*	*Short tons*	*Dollars*	*Dollars*	*Dollars*
1909	2,330,152	247,070	[1] 21,814	10,772,120	1,028,157	[1] 45,053
1910	2,654,988	241,612	----------	10,917,600	977,978	----------
1911	3,053,279	301,458	----------	11,900,685	1,164,871	----------
1912	2,973,332	350,928	----------	11,675,774	1,334,250	----------
1913	3,111,221	341,338	----------	11,796,231	1,286,084	----------
1914	2,734,043	336,662	----------	9,608,041	1,282,346	----------
1915	1,835,067	391,124	----------	5,413,449	1,674,933	----------
1916	1,982,385	459,132	58,088	5,896,993	2,038,892	144,768
1917	2,584,257	482,062	73,906	7,771,084	2,592,035	165,223
1918	2,490,760	464,494	98,694	8,214,463	2,644,515	251,082
1919	2,271,983	420,647	91,437	11,594,268	2,558,172	327,294
1920	4,103,982	310,777	97,487	25,079,572	1,596,961	322,319
1921	2,094,025	157,118	59,730	12,370,070	711,432	195,743
1922	2,417,883	169,043	67,777	10,482,846	674,241	233,196
1923	3,006,766	181,628	99,410	11,576,049	661,000	328,932
1924	2,867,789	163,096	72,710	10,252,083	645,262	225,383

Division of Statistical and Historical Research. Compiled from report of Geological Survey. Figures for 1880–1908 are published in Yearbook for 1925.

[1] Reported as "marl."

TABLE 737.—*Fish scrap (acidulated): Production in Atlantic and Gulf coast districts, 1912–1923*

Year	The North	North Carolina	Florida	Texas	Georgia	Total, five districts
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
1912	12,838	----------	----------	----------	----------	12,838
1913	31,548	2,039	----------	----------	----------	33,587
1914	12,162	3,089	1,190	1,544	----------	17,985
1915	5,268	3,045	788	1,273	----------	10,374
1916	5,218	5,110	2,400	1,800	----------	14,528
1917	5,637	7,478	2,336	865	1,345	17,661
1918	19,412	6,524	2,700	2,646	1,905	33,187
1919	30,086	6,784	5,030	4,420	750	47,070
1920	33,900	3,900	3,800	3,000	5,000	49,600
1921	----------	16,800	1,200	----------	----------	[1] 55,558
1922	37,100	5,600	2,120	----------	1,890	46,710
1923	38,995	7,650	3,265	770	1,925	52,605

Division of Statistical and Historical Research. Compiled from The American Fertilizer Handbook; 1924 not separately reported, included with "Fish, scrap, dried."

[1] Includes 37,558 tons produced in Chesapeake district.

TABLE 738.—*Fish scrap (dried): Production in Atlantic coast districts, 1912–1924*

Year	Chesapeake	The North	North Carolina	Florida	Total, four districts
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*
1912	51,060	6,655	7,250	160	[1] 65,660
1913	29,358	2,744	2,175	245	34,522
1914	21,936	1,604	665	----------	24,205
1915	19,301	824	1,289	----------	21,414
1916	21,258	----------	----------	1,200	22,458
1917	14,584	292	5,187	762	20,825
1918	12,221	----------	3,460	366	16,047
1919	12,340	----------	2,763	----------	15,103
1920	18,750	----------	1,240	----------	19,990
1921	2,200	22,898	2,112	----------	27,210
1922	24,650	1,500	1,757	1,320	29,227
1923	30,780	3,750	2,500	1,750	38,780
1924	9,565	12,975	12,790	5,588	[2] 45,951

Division of Statistical and Historical Research. Compiled from The American Fertilizer Handbook.

[1] Includes 595 tons produced in Texas district.
[2] Dried and acidulated combined, not separately reported.
[3] Includes 4,000 tons produced in Georgia and 1,033 tons produced in Texas.

TABLE 739.—*Fertilizers: Production, value, and average value per ton of specified kinds, by States, census years, 1914, 1919, 1921, 1923* [1]

PRODUCTION

State	Complete and ammoniated				Complete		Ammoniated	
	1914	1919	1921	1923	1921	1923	1921	1923
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Maine	50,554	52,980	92,819	60,700	92,819	60,700	----------	----------
Connecticut	49,533	55,445	47,541	62,495	46,874	61,881	667	614
New York	8,519	----------	----------	----------	----------	----------	----------	----------
New Jersey	353,310	256,403	244,199	267,027	236,387	264,143	7,812	2,884
Pennsylvania	171,461	152,529	110,742	103,130	88,149	96,898	22,593	6,232
Ohio	218,601	206,084	122,119	133,447	100,229	130,121	21,890	3,326
Indiana	41,318	87,065	57,341	67,268	44,782	65,004	12,559	2,264
Illinois	251,674	156,057	82,244	99,212	65,334	86,255	16,910	12,957
Missouri	10,375	----------	----------	----------	----------	----------	----------	----------
Delaware	21,898	12,175	14,290	9,391	13,825	9,266	465	125
Maryland	516,956	486,104	397,020	482,631	364,878	437,579	32,142	45,052
Virginia	375,256	361,802	347,600	427,892	319,401	404,373	28,199	23,519
North Carolina	458,245	463,161	387,812	514,985	361,148	500,474	26,664	14,511
South Carolina	491,676	545,042	251,864	377,179	191,633	336,285	60,231	40,894
Georgia	1,155,559	1,004,717	448,475	595,658	387,363	581,794	61,112	13,864
Florida	200,663	175,746	196,295	256,283	192,959	255,222	3,336	1,061
Kentucky	14,926	3,794	17,192	19,442	14,332	18,335	2,860	1,107
Tennessee	164,109	75,458	39,237	62,679	33,719	61,081	5,518	1,598
Alabama	463,135	208,874	85,985	167,152	76,032	161,245	9,653	3,907
Mississippi	95,359	51,898	23,764	67,138	20,473	66,543	3,291	1,595
Louisiana	132,287	94,259	34,746	114,235	28,720	107,415	6,026	6,820
Texas	32,897	12,866	3,756	12,673	2,427	12,673	1,329	----------
Washington	----------	----------	1,630	4,133	1,630	4,133	----------	----------
California	44,456	45,433	46,351	57,897	42,277	51,681	4,074	6,216
Other States	259,322	247,868	271,765	261,753	259,874	260,405	11,891	1,348
Total	5,612,421	4,756,440	3,324,487	4,222,400	2,985,265	4,032,506	339,222	189,894

[1] Data for establishments with products under $5,000 in value excluded in 1913, but included in other years.

TABLE 739.—*Fertilizers: Production, value, and average value per ton of specified kinds, by States, census years, 1914, 1919, 1921, 1923*—Continued

PRODUCTION—Continued

State	Superphosphates and concentrated phosphates				Other fertilizer			
	1914	1919	1921	1923	1914	1919	1921 [2]	1923 [2]
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Maine			137	73			5,386	9,680
Connecticut			406	831	9,503	1,732	2,085	2,161
New York					54,022			
New Jersey	82,674	93,350	91,929	78,251	39,837	55,799	20,193	42,543
Pennsylvania	23,899	12,054	54,052	44,959	80,728	59,569	39,478	30,298
Ohio	69,927	187,164	149,805	172,190	50,825	105,128	49,738	70,812
Indiana	(3)	41,467	43,321	55,806	10,094	14,230	17,918	23,773
Illinois	(3)	43,003	57,841	58,357	32,961	76,266	53,536	50,061
Missouri					11,077			
Delaware			2,396	1,974			5,250	3,363
Maryland	228,045	635,856	530,765	528,533	130,993	87,716	63,453	75,182
Virginia	76,130	152,305	132,444	165,606	90,304	18,730	47,627	65,316
North Carolina	147,694	206,231	121,276	182,526	29,241	124,743	41,118	58,081
South Carolina	182,407	249,145	104,034	180,501	60,270	51,015	42,375	50,431
Georgia	459,783	341,515	278,559	330,368	134,123	77,480	157,983	133,842
Florida	36,701	68,902	36,789	93,119	9,142	9,908	3,018	20,159
Kentucky			9,557	9,385	52,453	25,726	13,765	13,260
Tennessee	47,327	121,122	125,918	153,608	118,021	46,918	8,372	22,625
Alabama	230,494	146,677	61,534	143,507	53,414	28,472	16,340	60,029
Mississippi	62,518	51,159	36,911	74,099	(4)	19,669	303	918
Louisiana	52,713	59,856	35,329	67,057	36,434	8,711	1,614	6,729
Texas			4,615	14,399			3,426	4,922
Washington				850			1,368	3,029
California			15,027	12,525	9,749	15,403	16,048	16,666
Other States	59,978	105,475	84,097	89,594	46,304	138,075	82,556	104,890
Total	1,760,290	2,515,281	1,976,742	2,458,118	1,059,495	965,290	692,950	868,770

VALUE

	Complete and ammoniated				Complete		Ammoniated	
	1914	1919	1921	1923	1921	1923	1921	1923
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	1,574,590	3,934,620	6,556,483	2,053,083	6,556,483	2,053,083		
Connecticut	1,661,626	3,471,617	2,795,066	3,018,731	2,778,674	2,985,077	16,392	33,654
New York	2,072,730							
New Jersey	8,723,747	11,990,054	10,152,955	9,072,372	9,902,934	8,933,360	250,021	139,012
Pennsylvania	3,818,919	5,226,781	4,231,698	3,065,564	3,444,396	2,922,886	787,302	142,678
Ohio	4,496,321	6,496,781	3,649,212	3,289,624	3,019,486	3,217,402	629,726	72,222
Indiana	787,466	2,707,669	1,613,687	1,808,784	1,301,018	1,747,254	312,669	61,530
Illinois	4,095,958	5,173,346	2,458,663	3,590,721	1,966,978	3,253,389	491,685	337,332
Missouri	267,059							
Delaware	471,093	465,965	501,289	278,899	486,311	275,224	14,978	3,675
Maryland	10,013,331	20,937,554	13,447,832	12,907,303	12,021,849	11,646,692	825,983	1,260,611
Virginia	7,576,028	16,329,418	11,261,973	11,910,522	10,442,676	11,229,270	819,297	681,252
North Carolina	9,999,225	21,096,283	12,084,319	13,834,321	11,944,649	13,443,994	739,670	390,327
South Carolina	11,199,158	24,218,733	8,984,364	9,418,125	7,017,127	8,168,200	1,967,237	1,249,925
Georgia	24,387,229	39,855,409	14,153,625	16,026,636	12,467,834	15,598,455	1,685,791	428,181
Florida	5,720,326	8,618,976	9,010,209	9,519,278	8,892,692	9,480,155	117,517	39,123
Kentucky	316,786	135,227	523,679	566,655	438,495	535,715	85,184	30,940
Tennessee	2,871,655	2,816,787	1,291,750	1,559,749	1,116,685	1,518,903	175,065	40,846
Alabama	8,111,405	7,704,149	2,283,885	4,524,044	2,086,838	4,434,785	197,047	89,259
Mississippi	1,867,251	2,120,381	801,120	1,883,042	703,023	1,840,523	98,097	42,519
Louisiana	2,558,982	3,556,830	1,227,565	3,665,582	1,015,335	3,406,233	212,230	259,349
Texas	794,488	507,612	162,710	402,038	107,104	402,038	55,606	
Washington			92,095	202,817	92,095	202,817		
California	1,639,686	2,600,055	2,630,591	3,072,753	2,409,522	2,738,948	221,069	333,805
Other States	6,651,327	10,142,172	12,411,763	8,464,761	11,974,444	8,426,050	437,319	38,711
Total	121,676,386	200,106,419	122,926,533	124,135,404	112,786,648	118,460,453	10,139,885	5,674,951

[2] Includes those reported as commercial fertilizers.

[3] Included in all other States.

TABLE 739.—*Fertilizers: Production, value and average value per ton of specified kinds, by States, census years, 1914, 1919, 1921, 1923*—Continued

VALUE—Continued

State	Superphosphates and concentrated phosphates				Other fertilizer			
	1914	1919	1921	1923	1914	1919	1921 [2]	1923 [2]
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine			5,690	920			201,582	477,843
Connecticut			9,714	15,441	284,888	94,794	100,763	112,391
New York					691,478			
New Jersey	941,738	1,827,494	1,935,039	1,158,565	615,962	1,407,897	470,799	1,146,758
Pennsylvania	242,935	310,611	915,196	520,191	1,235,063	1,655,734	1,627,731	897,554
Ohio	969,903	4,719,899	3,204,865	2,915,057	846,851	2,377,681	1,211,380	1,577,163
Indiana	[3]	1,019,089	948,751	929,797	186,036	658,348	512,826	636,255
Illinois	[3]	835,494	1,254,834	1,140,786	402,360	3,059,099	1,378,559	913,803
Missouri					242,735			
Delaware			42,960	30,269			123,308	73,315
Maryland	2,006,040	10,661,824	7,474,125	5,757,653	1,469,613	3,406,432	1,548,489	1,567,691
Virginia	669,654	3,416,931	2,450,737	2,297,708	1,278,431	612,477	946,577	1,117,521
North Carolina	1,285,889	5,210,407	2,142,462	2,448,357	417,643	5,595,856	1,216,659	1,331,951
South Carolina	1,642,797	4,899,295	1,993,800	2,055,505	1,163,903	2,249,809	1,270,691	1,297,937
Georgia	4,138,243	6,228,256	4,268,828	4,283,910	1,883,315	3,136,121	4,183,028	3,114,434
Florida	307,272	1,127,428	579,600	1,209,542	262,469	217,651	71,351	745,774
Kentucky			154,227	144,620	642,580	784,965	239,767	250,612
Tennessee	444,664	2,572,765	2,018,829	2,245,694	1,092,603	1,332,012	170,696	308,925
Alabama	1,948,594	2,947,952	999,344	1,815,098	923,529	1,024,952	373,358	1,086,858
Mississippi	477,818	995,700	481,062	1,053,183	[4]	793,900	21,084	18,087
Louisiana	469,070	1,309,030	676,286	1,154,921	668,372	362,453	56,429	251,949
Texas			108,009	277,685			103,925	139,356
Washington				22,700			61,044	84,594
California			299,285	212,840	312,584	1,042,519	497,107	490,126
Other States	601,042	1,968,172	1,634,721	1,513,997	817,752	4,575,057	1,966,814	2,246,227
Total	16,145,659	50,050,347	33,598,364	33,204,439	15,438,167	34,387,757	18,353,967	19,887,124

AVERAGE VALUE PER TON

State	Complete and ammoniated				Complete		Ammoniated	
	1914	1919	1921	1923	1921	1923	1921	1923
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	31.15	74.27	70.64	33.82	70.64	33.82		
Connecticut	33.55	62.61	58.79	48.30	59.28	48.24	24.58	54.81
New York	20.83							
New Jersey	24.69	46.76	41.58	33.98	41.89	33.82	32.00	48.20
Pennsylvania	22.27	34.27	38.21	29.73	39.07	30.16	34.85	22.89
Ohio	20.57	31.52	29.88	24.65	30.13	24.73	28.77	21.71
Indiana	19.06	31.10	28.14	26.89	29.05	26.88	24.90	27.18
Illinois	16.28	33.15	29.89	36.19	30.11	37.72	29.08	26.03
Missouri	25.74							
Delaware	21.52	38.27	35.08	29.70	35.18	29.70	32.21	29.40
Maryland	19.37	43.07	33.87	26.74	34.59	26.62	25.70	27.98
Virginia	20.19	45.13	32.40	27.84	32.69	27.77	29.05	28.97
North Carolina	21.82	40.86	32.71	26.86	33.07	26.86		
South Carolina	22.81	44.39	35.67	24.97	36.62	24.29	32.66	30.56
Georgia	21.10	39.67	31.56	26.91	32.19	26.81	27.59	30.88
Florida	28.51	49.04	45.90	37.14	46.09	37.14	35.23	36.87
Kentucky	21.22	35.64	30.46	29.15	30.60	29.22	29.78	27.95
Tennessee	17.50	37.33	32.92	24.88	33.12	24.87	31.73	25.56
Alabama	20.12	36.88	26.65	27.39	27.45	27.50	20.41	22.85
Mississippi	19.58	40.86	33.71	28.05	34.34	28.08		
Louisiana	19.34	37.69	35.33	32.09	35.35	31.71	35.22	38.03
Texas	24.22	39.51	43.32	31.72	44.13	31.72	41.84	
Washington			56.50	49.07	56.50	49.07		
California	36.88	57.23	56.75	53.07	56.99	53.00	54.26	53.70
Other States	25.65	40.92	45.67	32.34	46.08	32.36	36.78	28.72
Total	21.68	42.07	36.98	29.40	37.78	29.38	29.89	29.88

[2] Includes those reported as commercial fertilizer.
[3] Included in all other States.

TABLE 739.—*Fertilizers: Production, value and average value per ton of specified kinds, by States, census years, 1914, 1919, 1921, 1923*—Continued

AVERAGE VALUE PER TON—Continued

State	Superphosphates and concentrated phosphates				Other fertilizer			
	1914	1919	1921	1923	1914	1919	1921 [2]	1923 [2]
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Maine	----------	----------	41.53	12.60	----------	----------	37.43	49.36
Connecticut	----------	----------	23.93	18.58	29.98	----------	48.33	52.01
New York	----------	----------	----------	----------	12.80	----------	----------	----------
New Jersey	11.39	19.59	21.05	14.81	15.46	25.28	23.31	26.96
Pennsylvania	10.16	25.77	16.93	11.57	15.30	27.80	41.23	29.62
Ohio	13.87	25.22	21.39	16.93	16.66	22.62	24.36	22.27
Indiana	----------	24.58	21.90	16.66	18.43	46.26	28.62	26.76
Illinois	----------	19.43	21.69	19.55	12.21	40.11	26.75	18.25
Missouri	----------	----------	----------	----------	21.91	----------	----------	----------
Delaware	----------	----------	17.93	15.33	----------	----------	23.48	21.80
Maryland	8.80	16.87	14.08	10.89	11.22	38.83	24.40	20.85
Virginia	8.80	22.43	18.50	13.87	14.16	32.76	19.87	17.11
North Carolina	8.71	25.26	17.67	13.41	14.28	44.86	29.59	22.93
South Carolina	9.01	19.66	19.17	11.39	19.31	44.10	29.99	25.74
Georgia	9.00	18.24	15.32	12.97	14.04	40.48	26.48	23.27
Florida	8.37	16.36	15.75	12.99	28.71	21.97	23.64	36.99
Kentucky	----------	----------	16.14	15.41	12.25	30.51	17.42	18.90
Tennessee	9.40	21.24	16.03	14.62	9.26	28.39	20.39	13.65
Alabama	8.45	20.10	16.24	12.65	17.29	36.00	22.85	18.12
Mississippi	7.64	19.46	13.03	14.21	----------	40.36	69.58	19.70
Louisiana	8.90	21.87	19.14	17.22	18.34	41.61	34.96	37.44
Texas	----------	----------	23.40	19.29	----------	----------	30.33	28.31
Washington	----------	----------	----------	26.71	----------	----------	44.62	27.93
California	----------	----------	19.92	16.99	32.06	67.68	30.98	29.41
Other States	10.02	18.66	19.44	16.90	17.66	33.13	23.82	21.42
Total	9.17	19.90	17.00	13.51	14.57	35.62	26.49	22.89

Division of Statistical and Historical Research. Compiled from reports of the Bureau of the Census.

[2] Includes those reported as commercial fertilizer.

TABLE 740.—*Specified fertilizer materials produced and consumed, 1909–1924*

Year	Production [1]		Consumption of sulphate of ammonia [4]	Sulphuric acid					
	Sulphate of ammonia [2]	Potash, crude [3]		Production [5]	Consumption [5]	Year beginning July 1			
						Imports for consumption [6]		Exports, domestic [6]	
						Quantity	Value	Quantity	Value
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Dollars*	*Short tons*	*Dollars*
1909	106,500	----------	149,415	995,384	841,935	18	1,063	2,541	61,890
1910	116,000	----------	208,343	----------	----------	19	526	2,889	66,537
1911	127,000	----------	221,633	----------	----------	24	639	3,501	71,877
1912	165,000	----------	224,542	----------	----------	72	2,291	4,895	89,783
1913	195,000	----------	269,775	----------	----------	3,362	40,559	6,066	125,892
1914	183,000	----------	286,016	1,405,768	1,276,715	3,691	44,608	23,386	516,436
1915	250,049	4,374	286,423	----------	----------	3,143	61,352	41,010	1,990,532
1916	288,265	35,739	302,782	----------	----------	334	6,617	29,302	961,888
1917	325,670	126,961	333,805	----------	----------	14,113	358,904	33,827	1,119,907
1918	379,278	207,686	382,630	----------	----------	5,670	109,489	23,707	805,430
1919	403,223	116,684	405,859	1,877,394	1,568,577	4,611	79,204	16,167	778,287
1920	499,163	166,884	434,944	----------	----------	5,183	96,937	9,300	446,389
1921	358,500	25,485	248,583	1,319,382	1,143,850	2,458	54,717	6,990	265,560
1922	476,761	25,176	317,227	1,423,917	1,589,809	9,072	156,440	3,631	156,204
1923	603,363	39,029	435,209	1,680,235	1,820,278	8,598	144,376	5,182	184,335
1924	569,622	43,719	443,771	1,576,544	1,782,816	[7] 10,077	[7] 146,841	----------	173,120

Division of Statistical and Historical Research.

[1] Production for all purposes.

[2] The American Fertilizer Handbook.

[3] Geological Survey.

[4] Computed from production figures as quoted by the American Fertilizer Handbook, plus imports, 1909–1919, and net imports, 1920–1924, as reported by the Bureau of Foreign and Domestic Commerce.

[5] Bureau of the Census. In fertilizer manufacturing plants only.

[6] Bureau of Foreign and Domestic Commerce.

[7] General imports.

TABLE 741.—*Fertilizer materials: Imports into the United States, 1912–1925*

Year ended June 30—	Bone dust and bone ash[2]		Kainit		Manure salts[3]	
	Quantity	Value	Quantity	Value	Quantity	Value
	Tons	*Dollars*	*Tons*	*Dollars*	*Tons*	*Dollars*
1912	33,864	830,616	485,132	2,399,761	192,738	1,814,071
1913	33,337	801,713	466,795	2,154,977	171,802	1,794,058
1914	41,450	1,034,636	541,846	2,579,619	261,342	2,767,241
1915	23,428	584,748	79,004	444,760	66,062	760,699
1916	20,466	524,153	64	1,795	2,271	41,825
1917	14,305	385,541			324	7,794
1918	8,511	286,764			190	8,872
1919	4,138	117,690				
1920	7,340	306,301	274,761	5,655,660	249,348	8,319,620
1921	27,413	1,317,876	204,834	4,882,974	123,273	4,164,817
1922	18,234	495,445	83,571	585,338	81,442	957,443
1923	52,933	1,380,413	168,514	1,048,054	[1] 244,760	2,398,098
1924	66,820	1,783,534	181,288	1,080,132	268,203	2,988,634
1925	35,908	730,880	142,888	855,277	344,260	3,293,254

Year ended June 30—	Ammonia sulphate		Potash			
			Muriate		Sulphate	
	Quantity	Value	Quantity	Value	Quantity	Value
	Tons	*Dollars*	*Tons*	*Dollars*	*Tons*	*Dollars*
1912	65,906	4,143,417	215,957	7,235,718	44,476	1,826,836
1913	54,089	3,655,413	201,220	6,782,056	42,745	1,753,485
1914	74,444	4,888,563	237,886	7,915,523	45,139	1,897,740
1915	57,018	3,208,152	102,732	3,666,118	21,852	1,071,761
1916	19,610	1,371,007	2,130	461,431	2,423	197,808
1917	8,176	647,271	606	174,806	661	20,538
1918	3,983	467,999	723	195,154	135	19,837
1919	1,964	278,469	1,677	201,307	137	23,304
1920	2,587	343,107	110,324	11,038,173	6,356	1,973,322
1921	2,537	226,300	49,911	5,290,196	12,081	1,659,998
1922	6,356	314,286	131,423	5,549,580	45,280	2,085,348
1923	1,785	116,686	150,461	4,759,134	51,776	2,109,966
1924	5,848	337,032	119,605	3,828,891	68,399	2,685,129
1925	21,158	1,198,428	154,447	4,737,224	67,292	2,553,248

Division of Statistical and Historical Research. Compiled from the Monthly Summary of Foreign Commerce of the United States, June issues, 1921–1925.

[1] Includes "Other potash-bearing substances" amounting to 20,734 tons and valued at $258,651.
[2] Classified in 1924 and 1925 as "Bone phosphate and other phosphate material."
[3] Classified as "Manure salts and other potash-bearing substances."

TABLE 742.—*Guano: Imports into the United States, 1909–1925*

Year ended June 30—	Quantity	Value	Year ended June 30—	Quantity	Value
	Tons	*Dollars*		*Tons*	*Dollars*
1909	36,999	580,334	1919	6,218	293,425
1910	52,330	845,765	1920	18,796	1,550,098
1911	29,516	593,306	1921	37,570	3,158,064
1912	34,706	684,658	1922	1,305	48,875
1913	19,075	340,915	1923	[1]	[1]
1914	21,887	755,833	1924	[2] 4,982	[2] 191,659
1915	20,945	534,391	1925	24,556	737,896
1916	15,837	425,377			
1917	3,563	73,398			
1918	10,096	287,446			

Division of Statistical and Historical Research. Compiled from Monthly Summary of Foreign Commerce of the United States, June issues, 1921–1925.

[1] Included in all other fertilizers. [2] Beginning Jan. 1, 1924.

TABLE 743.—*Fertilizer materials: Average wholesale price 1913–1925*

AMMONIATES

Year	Ammonia sulphate, domestic, spot, per 100 pounds	Blood, dried, 12 per cent ammonia, f. o. b., per short ton [1]		Fish scrap, dried, 11 per cent ammonia, 14 per cent bone phosphate, f. o. b. fish factory, per short ton [1]	Fish, wet, acidulated, 6 per cent ammonia, 3 per cent phosphoric acid, f. o. b. fish factory, per short ton	Soda, nitrate, spot, 95 per cent, per 100 pounds	Cottonseed meal, 7 per cent ammonia f. o. b. mill, per short ton	Concentrated tankage, 14 per cent, f. o. b. Chicago, per short ton [1]
		New York	Chicago					
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1913	3.03	34.56	32.76	29.12	16.11	2.46	----------	----------
1914	2.73	38.52	37.08	38.14	----------	2.10	----------	----------
1915	3.34	34.08	31.68	36.82	----------	2.43	----------	----------
1916	3.82	38.76	36.84	42.21	25.26	3.21	----------	----------
1917	5.99	67.20	63.96	60.14	33.70	4.13	----------	----------
1918	5.70	83.40	Nominal.	81.23	43.12	4.74	----------	----------
1919	4.58	74.76	Nominal.	73.12	36.00	3.53	----------	----------
1920	5.01	90.84	Nominal.	74.77	36.12	3.52	41.00	----------
1921	2.42	39.84	Nominal.	36.16	17.10	2.50	32.67	31.64
1922	3.01	49.68	50.64	40.12	19.26	2.54	39.50	45.36
1923	3.18	50.28	50.64	45.18	22.74	2.51	39.67	45.36
1924	2.71	41.76	42.12	46.94	23.34	2.49	37.33	40.60
1925	2.89	44.88	----------	49.91	24.78	2.59	34.46	43.12

Division of Statistical and Historical Research. Compiled from Oil, Paint, and Drug Reporter, average of weekly prices.

[1] Converted from price per unit. Unit equals 1 per cent in a ton, or 20 pounds of pure ammonia.

TABLE 744.—*Phosphate rock: Average wholesale price per long ton, 1913-1925*

Year	Tennessee phosphate rock, f. o. b. Mount Pleasant			South Carolina phosphate rock kiln dried, f. o. b. Ashley River	Florida land pebble phosphate rock, 68 per cent, f. o. b. Florida points	Florida high-grade phosphate hard rock	
	Domestic, 78 to 80 per cent	75 per cent guaranteed	68 to 72 per cent [1]			77 per cent, f. o. b. Florida points	75 per cent, Tampa
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1913	5.25	4.88	4.38	3.62	3.49	6.00	----------
1914	5.25	4.88	4.38	3.62	3.12	6.00	----------
1915	5.25	4.88	4.38	3.62	3.01	5.60	----------
1916	5.25	4.88	4.38	3.62	2.84	5.12	----------
1917	5.48	4.99	4.65	3.89	2.63	5.42	----------
1918	6.56	6.71	6.81	Nominal.	4.22	7.25	----------
1919	10.50	9.52	[2] 7.46	Nominal.	5.00	9.39	7.75
1920	13.42	10.82	----------	----------	8.48	13.02	10.35
1921	15.25	8.90	----------	----------	5.90	12.02	8.74
1922	Nominal.	6.90	5.54	----------	3.11	8.58	6.23
1923	Nominal.	7.50	5.50	----------	3.05	7.60	5.17
1924	Nominal.	6.65	4.65	----------	2.34	6.75	4.18
1925	Nominal.	6.19	5.19	----------	2.45	6.05	----------

Division of Statistical and Historical Research. Compiled from Oil, Paint and Drug Reporter, average of weekly prices.

[1] Grade changed to 70 per cent 1922–1924, and 72 per cent in 1925.
[2] Three months, January–March.

TABLE 745.—*Fertilizer, commercial: Sold in cotton States, based on sale of fertilizer tags, 1919–1925*

State	1919	1920	1921	1922	1923	1924	1925
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Virginia	421, 436	465, 227	369, 490	449, 942	302, 211	343, 793	342, 386
North Carolina	1, 109, 070	1, 222, 103	831, 684	1, 035, 430	1, 190, 583	1, 189, 315	1, 217, 467
South Carolina	1, 033. 887	1, 253. 890	615. 488	504. 000	678, 612	879, 093	863, 928
Georgia	1, 063, 841	1, 039, 048	556, 573	535, 084	677, 040	690, 075	789, 621
Florida	250, 613	272, 316	289, 857	329, 668	379, 000	386, 521	361, 849
Alabama	[1] 298. 007	391. 171	180, 248	295, 429	436, 786	472, 240	579, 149
Mississippi	126, 377	166, 903	94, 572	169, 937	253, 811	213, 516	257, 113
Louisiana	97, 724	95, 863	38, 760	66, 470	107, 368	129, 288	103, 699
Texas	46, 000	56, 700	19, 204	33, 420	76, 000	120, 000	103, 000
Arkansas	53, 373	69, 036	14, 550	40, 325	74, 774	84, 995	130, 000
Tennessee	108, 430	112, 102	84, 044	96, 992	112, 656	117, 137	135, 270
Missouri	70, 000	77, 888	8, 022	7, 900			
Total	4, 678, 758	5, 222, 247	3, 102, 492	3, 564, 597	4, 288, 841	4, 625, 973	4, 883, 482

Division of Statistical and Historical Research. Compiled from reports of the Division of Crop and Livestock Estimates. Figures for 1914–1919 are published in Yearbook, 1923.

[1] Cottonseed meal not included.

TABLE 746.—*Fertilizer used on cotton, 1924–1925*

State	Acreage in cotton				Fertilizers used				Value					
	June 25		Fertilized		Average per acre		Total		Average price per ton		Total		Average per acre	
	1924	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924	1925	1924	1925
	1,000 acres	*1,000 acres*	*1,000 acres*	*1,000 acres*	*Lbs.*	*Lbs.*	*Tons*	*Tons*	*Dols.*	*Dols.*	*1,000 Dols.*	*1,000 Dols.*	*Dols.*	*Dols.*
Virginia	107	96	105	92	440	390	23, 100	17, 940	27. 40	31. 50	633	565	6. 03	6. 14
North Carolina	2, 099	2, 183	2, 078	2, 139	450	450	467, 550	481, 275	26. 70	30. 50	12, 484	14, 679	6. 01	6. 86
South Carolina	2, 491	2, 740	2, 366	2, 576	345	350	408, 135	450, 800	25. 40	29. 50	10, 367	13, 299	4. 38	5. 16
Georgia	3, 099	3, 564	2, 944	3, 386	270	265	397, 440	448, 646	27. 00	31. 60	10, 731	14, 177	3. 65	4. 19
Florida	82	115	75	104	200	232	7, 500	12, 064	28. 00	31. 00	210	374	2. 80	3. 60
Alabama	3, 114	3, 425	2, 740	3, 082	238	245	326, 060	377, 545	29. 20	32. 70	9, 521	12, 346	3. 47	4. 01
Mississippi	3, 057	3, 424	1, 406	1, 712	200	213	140, 600	182, 328	35. 00	37. 00	4, 921	6, 746	3. 50	3. 94
Louisiana	1, 666	1, 916	833	805	175	171	72, 888	68, 828	38. 50	41. 00	2, 806	2, 822	3. 37	3. 51
Texas	17, 706	18, 237	1, 239	1, 694	175	175	108, 412	95, 725	35. 20	37. 00	3, 816	3, 542	3. 08	3. 24
Arkansas [1]	3, 173	3, 649	1, 111	1, 277	177	185	98, 324	118, 122	35. 60	37. 00	3, 500	4, 371	3. 15	3. 42
Tennessee	1, 016	1, 219	457	634	205	219	46, 842	69, 423	27. 50	32. 50	1, 288	2, 256	2. 82	3. 56
Missouri	524	503	21	25	170	120	1, 785	1, 500	34. 00	35. 00	61	52	2. 90	2. 08
Oklahoma	4, 022	4, 867	201	49	150	150	15, 075	3, 675	29. 50	30. 00	445	110	2. 21	2. 24
California	130	170												
Arizona	183	163												
New Mexico	126	139	6	7	150	180	450	630	33. 00	30. 00	15	19	2. 50	2. 71
All other [2]	46	38												
Total	42, 641	46, 448	15, 582	16, 982	272	274	2, 114, 161	2, 328, 500	28. 76	32. 36	60, 798	75, 358	3. 90	4. 44

Division of Statistical and Historical Research. Compiled from reports of the Division of Crop and Livestock Estimates.

[1] Cottonseed meal and nitrate of soda are not included in the report for this State.
[2] Includes Illinois, Kansas, and Kentucky.

FOREIGN EXCHANGE

TABLE 747.—*Foreign exchange: Average rates at New York*

ARGENTINE PESO, PAPER[1]

(Par=42.4512 cents)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
1912	42.460	42.500	42.604	42.655	42.526	42.510	42.510	42.510	42.510	42.510	42.478	42.495
1913	42.510	42.878	42.720	42.535	42.470	42.395	42.260	42.110	42.110	42.110	42.110	42.110
1914	42.158	42.522	42.540	42.365	42.230	42.240	42.246	43.465	44.683	43.042	43.428	43.720
1915	43.348	43.332	42.925	42.580	42.005	42.018	42.236	41.385	41.712	42.080	42.212	42.560
1916	42.652	42.858	43.158	43.058	42.525	42.182	41.592	41.402	42.126	42.900	43.240	43.824
1917	44.170	43.960	43.402	42.642	43.262	43.918	43.525	43.104	42.900	43.768	45.600	46.650
1918	44.820	43.895	44.062	44.472	45.192	44.820	44.388	44.413	44.632	44.712	44.828	45.018
1919	44.804	44.748	44.328	44.045	44.100	43.220	42.588	42.138	42.315	42.324	42.945	43.110
1920	43.976	43.108	43.320	42.957	42.485	42.058	40.496	37.657	36.808	35.807	34.650	34.368
1921	34.792	35.078	34.122	32.476	31.585	30.782	28.952	29.284	30.637	32.154	32.329	32.914
1922	33.963	36.334	36.423	35.529	36.269	36.016	36.013	36.117	35.677	35.822	36.180	37.650
1923	37.284	37.055	37.024	36.585	35.939	35.485	34.205	32.762	32.935	32.410	31.804	31.826
1924	32.468	33.639	33.683	32.913	32.838	32.512	32.612	33.729	35.212	36.762	37.616	38.860
1925	40.075	39.745	39.472	38.227	39.706	40.185	40.370	40.348	40.352	41.078	41.554	41.452

EGYPTIAN TALARI[3]

(Par=98.862 cents)

1912	100.345	100.398	100.310	99.980	100.606	99.992	99.972	100.690	100.642	100.412	99.980	100.005
1913	100.144	99.928	99.845	99.832	99.862	99.690	99.662	99.952	100.120	100.244	99.912	99.768
1914	99.965	99.855	99.685	99.828	99.912	99.912	100.158	103.630	103.292	102.552	100.962	100.236
1915	99.582	99.138	98.708	98.372	98.320	97.955	97.738	96.335	96.232	96.114	95.865	96.840
1916	97.505	97.652	97.740	97.770	97.648	97.575	97.592	97.590	97.612	97.698	97.698	97.644
1917	97.605	97.538	97.576	97.670	97.578	97.526	97.608	97.580	97.628	97.572	97.576	98.080
1918	97.585	97.580	97.552	97.598	97.600	97.570	97.560	97.618	97.630	97.675	97.712	97.710
1919	97.726	97.702	96.480	95.525	95.808	94.586	91.395	88.036	95.518	85.560	84.344	78.442
1920	75.864	68.660	74.123	80.088	78.934	79.642	78.362	73.498	72.510	70.876	70.565	72.482
1921	76.915	79.482	80.405	80.780	82.390	78.298	75.126	75.128	76.840	79.536	81.428	84.630
1922	86.725	89.163	87.592	89.970	91.120	91.377	91.118	91.955	90.828	91.275	91.558	93.842
1923	95.070	96.730	96.850	95.528	95.382	94.880	94.417	94.315	93.794	93.635	89.808	89.234
1924	87.295	88.410	88.340	88.852	88.960	88.750	89.623	92.150	91.900	92.140	94.478	96.560
1925	98.136	97.950	98.226	98.440	99.672	99.880	99.626	99.382	99.491	99.310	99.356	99.446

INDIAN RUPEE, GOLD[4]

(Par=48.665 cents)

1919	35.650	35.650	35.875	35.650	42.500	42.500	43.000	43.500	45.000	43.000	43.375	45.000
1920	44.125	45.500	47.250	46.500	43.500	40.875	37.875	35.750	33.788	30.625	29.375	27.250
1921	28.574	28.938	26.906	26.100	26.344	25.422	23.059	24.224	26.390	27.419	26.874	27.449
1922	27.810	28.143	27.822	27.810	28.751	28.911	28.891	29.014	28.741	28.842	29.511	30.649
1923	31.726	31.850	31.566	31.346	31.081	30.992	30.859	30.461	30.602	31.063	30.860	31.005
1924	30.447	30.324	29.862	30.404	30.580	30.488	31.254	32.260	32.519	33.694	34.392	35.324
1925	35.710	35.730	35.670	35.600	36.230	36.480	36.610	36.620	36.630	36.600	36.62	36.640

[1] Compiled from International Yearbook of Agricultural Statistics, 1921, page 505, through June, 1921; average of weekly quotations. Federal Reserve Bulletin, July, 1921, to date; average monthly rate of exchange.

[2] Interpolation, no quotation.

[3] International Yearbook of Agricultural Statistics, 1921, page 505, and 1922, page 342.

[4] Federal Reserve Bulletins. January-September, 1919, highest rate for month. October, 1919-December, 1920, average of high and low quotations for month. January, 1921-June, 1921, average of weekly high and low quotations for month. July, 1921 to date, average rate of exchange.

TABLE 747.—*Foreign exchange: Average rates at New York*—Continued

POUND STERLING [5]

(Par=$4.8665)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1912	$4.8699	$4.3728	$4.8721	$4.8710	$4.8720	$4.8756	$4.8752	$4.8725	$4.8604	$4.8574	$4.8506	$4.8502
1913	4.8688	4.8746	4.8729	4.8688	4.8651	4.8670	4.8678	4.8640	4.8568	4.8580	4.8526	4.8535
1914	4.8623	4.8570	4.8628	4.8698	4.8831	4.8849	4.8878	5.0000	4.9812	4.9530	4.9031	4.8715
1915	4.8422	4.8206	4.8018	4.7945	4.7925	4.7755	4.7648	4.7062	4.6912	4.6858	4.6706	4.7208
1916	4.7506	4.7591	4.7641	4.7648	4.7581	4.7579	4.7577	4.7575	4.7574	4.7567	4.7567	4.7479
1917	4.7567	4.7550	4.7544	4.7567	4.7555	4.7544	4.7553	4.7545	4.7548	4.7522	4.7520	4.7517
1918	4.7525	4.7525	4.7525	4.7550	4.7550	4.7538	4.7525	4.7562	4.7550	4.7550	4.7575	4.7575
1919	4.7575	4.7575	4.7000	4.6512	4.6562	4.6125	4.4275	4.2725	4.1800	4.1712	4.0812	3.7688
1920	3.6700	3.3762	3.7712	3.9130	3.8500	3.9475	3.8525	3.6200	3.5125	3.4730	3.4250	3.4912
1921	3.7562	3.8712	3.9150	3.9300	3.9775	3.7725	3.6321	3.6536	3.7240	3.8729	3.9702	4.1561
1922	4.2248	4.3620	4.3757	4.4134	4.4461	4.4519	4.4464	4.4647	4.4307	4.4385	4.4799	4.6098
1923	4.6546	4.6908	4.6957	4.6555	4.6257	4.6147	4.5834	4.5603	4.5422	4.5237	4.3822	4.3602
1924	4.2591	4.3077	4.2906	4.3513	4.3608	4.3199	4.3704	4.4995	4.4605	4.4870	4.6097	4.6958
1925	4.7817	4.7724	4.7763	4.7953	4.8547	4.8604	4.8596	4.8569	4.8465	4.8428	4.8459	4.8498

DANISH KRONE [6]

(Par=26.8 cents)

1914							26.63	26.58	26.25	25.74	25.25	24.98
1915	24.72	24.48	24.48	25.13	25.61	26.08	25.64	25.41	25.28	25.71	25.53	26.70
1916	26.77	27.40	28.09	29.07	29.81	28.69	28.05	27.59	27.10	27.10	26.92	27.03
1917	27.25	27.43	28.17	28.41	28.49	28.74	29.28	30.08	30.63	32.41	33.61	31.35
1918	30.72	30.49	30.63	31.06	31.25	30.96	31.15	31.10	29.67	27.89	26.67	26.81
1919	26.74	26.02	25.53	25.69	24.17	23.89	22.75	21.88	21.91	21.52	20.81	18.67
1920	17.60	14.90	17.23	18.01	16.83	16.87	16.42	14.96	14.01	13.87	13.41	14.85
1921	18.06	18.54	17.31	18.09	18.07	17.21	15.78	16.19	17.67	18.92	18.47	19.52
1922	19.97	20.64	21.11	21.22	21.40	21.66	21.54	21.53	21.06	20.19	20.21	20.67
1923	19.79	19.09	19.20	18.92	18.65	17.96	17.54	18.46	18.16	17.53	17.20	17.82
1924	16.94	16.00	15.63	15.64	16.92	16.78	16.05	16.21	16.95	17.33	17.55	17.64
1925	17.81	17.81	17.07	18.44	18.81	19.11	21.37	23.30	24.52	24.58	24.86	24.86

Division of Statistical and Historical Research.

[5] International Yearbook of Agricultural Statistics, 1921, pages 504 and 498. Federal Reserve Bulletins, July, 1921, to date. Sight drafts 1912–1920; cables 1921 to date.

[6] Federal Reserve Board Bulletins, quoting Statistisk Aarbog, July, 1914, to December, 1919, and their own monthly averages since January, 1920. Quotations at New York on Copenhagen are not available throughout the period, but the shift in sources does not result in any considerable discrepancy. For the calendar year 1926, for example, the Copenhagen quotations on New York show the krone as equivalent to 15.43 cents while the New York quotations on Copenhagen average 15.63 cents per krone.

FEDERAL-AID HIGHWAYS

TABLE 748.—*Apportionment of Federal aid to States, year ended June 30*

State	1917	1918	1919	1920	1921	1922
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Alabama	104, 148. 90	208, 297. 80	1, 363, 720. 57	1, 995, 501. 80	2, 104, 883. 51	1, 553, 420. 67
Arizona	68, 513. 52	137, 027. 04	890, 584. 16	1, 301, 582. 81	1, 373, 644. 16	1, 053, 281. 44
Arkansas	82, 689. 10	165, 378. 20	1, 090, 247. 99	1, 596, 436. 09	1, 685, 178. 09	1, 254, 142. 20
California	151, 063. 92	302, 127. 84	1, 980, 415. 53	2, 896, 071. 77	3, 054, 675. 51	2, 462, 098. 53
Colorado	83, 690. 14	167, 380. 28	1, 124, 849. 83	1, 648, 384. 72	1, 755, 759. 17	1, 341, 175. 69
Connecticut	31, 090. 44	62, 180. 88	399, 281. 11	583, 422. 84	613, 349. 43	480, 897. 78
Delaware	8, 184. 37	16, 368. 74	105, 796. 45	154, 630. 46	162, 674. 81	365, 625. 00
Florida	55, 976. 27	111, 952. 54	744, 521. 08	1, 090, 214. 67	1, 147, 447. 92	886, 825. 69
Georgia	134, 329. 48	268, 658. 96	1, 749, 954. 20	2, 557, 485. 02	2, 697, 150. 96	1, 997, 957. 58
Idaho	60, 463. 50	120, 927. 00	792, 980. 82	1, 159, 967. 61	1, 226, 049. 93	938, 536. 68
Illinois	220, 926. 23	441, 852. 46	2, 843, 874. 13	4, 152, 546. 24	4, 365, 067. 91	3, 246, 281. 07
Indiana	135, 747. 62	271, 495. 24	1, 756, 149. 60	2, 564, 846. 88	2, 687, 053. 27	1, 958, 855. 41
Iowa	146, 175. 60	292, 351. 20	1, 877, 699. 81	2, 741, 787. 79	2, 881, 328. 74	2, 102, 872. 74
Kansas	143, 207. 40	286, 414. 80	1, 865, 445. 80	2, 728, 996. 45	2, 871, 244. 62	2, 102, 281. 51
Kentucky	97, 471. 91	194, 943. 82	1, 269, 849. 80	1, 856, 043. 83	1, 951, 755. 43	1, 417, 178. 68
Louisiana	67, 474. 66	134, 949. 32	884, 484. 31	1, 293. 385. 15	1, 362, 231. 13	996, 989. 64
Maine	48, 451. 50	96, 903. 00	626, 038. 97	914. 339. 94	960. 230. 16	695, 160. 25
Maryland	44, 047. 22	88, 094. 44	565, 608. 45	826. 000. 35	866, 998. 61	640. 629. 01
Massachusetts	73, 850. 95	147, 701. 90	958, 145. 15	1, 400, 678. 26	1, 472, 788. 83	1, 096, 176. 04
Michigan	145, 783. 72	291, 567. 44	1, 882, 570. 18	2, 749, 706. 24	2, 891, 667. 97	2, 249, 532. 43
Minnesota	142, 394. 06	284, 788. 12	1, 846, 639. 92	2, 699, 471. 59	2, 842, 089. 33	2, 123, 597. 07
Mississippi	88, 905. 84	177, 811. 68	1, 168, 239. 88	1, 709, 027. 72	1, 807, 557. 17	1, 294, 906. 22
Missouri	169, 720. 41	339, 440. 82	2, 203, 918. 08	3, 221, 096. 80	3, 387, 899. 60	2, 448, 128. 62
Montana	98, 287. 19	196, 574. 38	1, 297, 988. 03	1, 898, 987. 58	2, 006, 990. 13	1, 546, 885. 82
Nebraska	106, 770. 81	213, 541. 62	1, 386, 087. 32	2, 026, 619. 93	2, 133, 741. 98	1, 581, 189. 50
Nevada	64, 398. 30	128, 796. 60	836, 163. 28	1, 221, 573. 57	1, 276, 344. 43	953, 436. 78
New Hampshire	20, 996. 62	41, 993. 24	270, 420. 49	394, 839. 71	414, 838. 93	365, 625. 00
New Jersey	59, 212. 68	118, 425. 36	771, 408. 02	1, 128, 696. 51	1, 187, 556. 45	942, 870. 95
New Mexico	78, 737. 81	157, 475. 62	1, 037, 420. 34	1, 517. 692. 99	1, 598, 467. 85	1, 189, 823. 34
New York	250, 720. 27	501, 440. 54	3, 237, 630. 60	4, 727, 117. 15	4, 971, 893. 11	3, 696, 447. 97
North Carolina	114, 381. 92	228, 763. 84	1, 482, 533. 93	2, 165, 957. 19	2, 279. 053. 80	1, 709, 333. 90
North Dakota	76, 143. 06	152, 286. 12	997, 946. 19	1, 459, 884. 53	1, 536. 227. 80	1, 164, 714. 42
Ohio	186, 905. 42	373, 810. 84	2, 412, 505. 91	3. 523, 478. 73	3, 706, 246. 81	2, 823, 004. 05
Oklahoma	115, 139. 00	230, 278. 00	1, 499, 544. 83	2, 190. 805. 44	2, 302. 478. 33	1, 752, 339. 44
Oregon	78, 687. 37	157, 374. 74	1, 023, 791. 84	1, 496, 172. 28	1, 576, 152. 03	1, 182, 663. 90
Pennsylvania	230, 644. 17	461, 288. 34	2, 986, 221. 62	4, 362, 544. 11	4, 591, 946. 05	3, 398, 953. 97
Rhode Island	11, 665. 71	23, 331. 42	151, 503. 33	221, 408. 80	233, 256. 87	365, 625. 00
South Carolina	71, 807. 64	143, 615. 28	932, 311. 14	1, 362, 864. 40	1. 436. 019. 04	1, 061, 237. 34
South Dakota	80, 946. 02	161, 892. 04	1, 053, 896. 27	1, 540, 369. 27	1. 615. 779. 44	1, 204, 060. 31
Tennessee	114, 153. 48	228, 306. 96	1, 472, 767. 00	2, 150, 996. 64	2. 261, 913. 90	1, 647, 692. 24
Texas	291, 927. 81	583, 855. 62	3, 803, 206. 07	5, 559, 816. 81	5, 861, 598. 46	4, 425, 172. 41
Utah	56, 950. 15	113, 900. 30	738, 355. 27	1, 078, 425. 00	1, 129, 575. 66	849, 417. 21
Vermont	22, 844. 47	45, 688. 94	294, 116. 61	429, 376. 62	450. 077. 09	365, 625. 00
Virginia	99, 660. 71	199, 321. 42	1, 290, 173. 72	1, 884, 900. 60	1, 977. 673. 83	1, 456, 828. 47
Washington	71, 884. 28	143, 768. 56	938, 897. 43	1. 372, 497. 77	1, 444. 627. 79	1, 103, 709. 77
West Virginia	53, 270. 46	106, 540. 92	691, 723. 00	1. 010, 817. 30	1, 060. 152. 77	802, 359. 77
Wisconsin	128, 361. 07	256, 722. 14	1, 655, 653. 72	2, 418, 598. 39	2, 544. 945. 35	1, 894, 815. 86
Wyoming	61, 196. 82	122, 393. 64	796, 718. 22	1, 164, 533. 65	1, 233, 715. 84	934, 617. 63
Hawaii						
Total	4, 850, 000. 00	9, 700, 000. 00	63, 050, 000. 00	92, 150, 000. 00	97, 000. 000. 00	73, 125, 000. 00

TABLE 748.—*Apportionment of Federal aid to States, year ended June 30*—Cont.

State	1923	1924	1925	1926	1927	Total apportionment 1917–1927
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Alabama	1,035,613.78	1,345,323.41	1,542,052.56	1,541,870.00	1,540,799.00	14,349,455.00
Arizona	702,187.63	915,876.68	1,053,003.56	1,056,171.00	1,055,908.00	9,617,249.00
Arkansas	836,094.80	1,093,376.46	1,258,857.07	1,264,164.00	1,267,907.00	11,605,804.00
California	1,641,399.02	2,140,463.10	2,464,990.78	2,472,636.00	2,484,706.00	22,072,815.00
Colorado	894,117.13	1,183,041.98	1,361,482.06	1,373,237.00	1,380,384.00	12,325,812.00
Connecticut	320,598.52	414,860.09	475,513.91	474,801.00	473,428.00	4,333,681.00
Delaware	243,750.00	316,875.00	365,625.17	365,625.00	365,625.00	2,474,058.00
Florida	591,217.13	771,395.18	887,336.52	892,878.00	897,185.00	8,084,954.00
Georgia	1,331,971.72	1,729,366.09	1,983,022.99	1,983,089.00	1,981,189.00	18,431,953.00
Idaho	625,691.12	816,397.33	936,698.01	936,927.00	936,589.00	8,559,627.00
Illinois	2,164,187.38	2,797,888.59	3,203,867.99	3,191,479.00	3,175,616.00	29,832,198.00
Indiana	1,305,903.61	1,692,437.05	1,939,903.32	1,938,693.00	1,935,890.00	18,204,355.00
Iowa	1,401,915.16	1,813,757.63	2,078,248.33	2,070,396.00	2,060,469.00	19,485,563.00
Kansas	1,401,521.01	1,818,947.37	2,081,230.04	2,074,360.00	2,072,166.00	19,464,411.00
Kentucky	944,785.79	1,228,125.29	1,411,584.45	1,411,607.00	1,416,809.00	13,212,809.00
Louisiana	664,659.76	865,966.44	995,301.59	997,262.00	1,000,764.00	9,272,408.00
Maine	463,440.17	598,954.65	686,453.36	685,140.00	683,574.00	6,464,828.00
Maryland	427,086.01	554,540.90	635,945.01	635,783.00	634,624.00	5,925,057.00
Massachusetts	730,784.03	950,448.62	1,089,806.22	1,090,118.00	1,089,055.00	10,108,726.00
Michigan	1,499,688.29	1,942,431.00	2,226,824.73	2,225,227.00	2,217,418.00	20,342,365.00
Minnesota	1,415,731.38	1,842,800.97	2,120,906.56	2,124,151.00	2,130,168.00	19,591,780.00
Mississippi	863,270.81	1,127,182.03	1,294,371.65	1,291,960.00	1,293,203.00	12,128,018.00
Missouri	1,632,085.75	2,114,412.17	2,423,485.75	2,417,727.00	2,406,847.00	22,786,436.00
Montana	1,031,257.21	1,344,963.47	1,544,483.19	1,548,473.00	1,551,660.00	13,424,885.00
Nebraska	1,054,126.33	1,371,713.17	1,577,155.34	1,581,969.00	1,588,138.00	14,635,235.00
Nevada	635,624.52	826,360.27	947,623.25	948,076.00	948,318.00	8,795,215.00
New Hampshire	243,750.00	316,875.00	365,625.01	365,625.00	365,625.00	3,169,492.00
New Jersey	628,580.63	816,083.37	936,413.03	935,082.00	934,708.00	8,467,420.00
New Mexico	793,215.56	1,030,969.61	1,185,528.88	1,185,166.00	1,187,264.00	10,972,386.00
New York	2,464,298.65	3,195,493.85	3,663,105.86	3,657,096.00	3,647,166.00	34,045,195.00
North Carolina	1,139,555.93	1,477,424.33	1,697,246.16	1,699,168.00	1,708,554.00	15,717,206.00
North Dakota	776,476.28	1,021,269.47	1,178,708.13	1,180,699.00	1,193,720.00	10,748,659.00
Ohio	1,882,002.70	2,436,404.85	2,795,804.69	2,789,588.00	2,777,037.00	25,731,796.00
Oklahoma	1,168,226.29	1,524,701.96	1,753,189.71	1,755,105.00	1,752,245.00	16,059,787.00
Oregon	788,442.60	1,026,044.09	1,176,830.15	1,179,668.00	1,182,945.00	10,879,347.00
Pennsylvania	2,265,969.31	2,938,092.22	3,365,956.21	3,360,123.00	3,346,920.00	31,338,781.00
Rhode Island	243,750.00	316,875.00	365,624.87	365,625.00	365,625.00	2,667,569.00
South Carolina	707,491.56	918,171.43	1,054,028.17	1,052,549.00	1,051,993.00	9,801,524.00
South Dakota	802,706.87	1,049,885.60	1,209,144.18	1,215,020.00	1,222,198.00	11,166,790.00
Tennessee	1,098,461.49	1,421,604.32	1,628,740.97	1,622,985.00	1,618,419.00	15,280,591.00
Texas	2,950,114.94	3,838,351.12	4,410,169.76	4,415,715.00	4,426,917.00	40,606,431.00
Utah	566,278.14	735,829.37	847,741.90	846,467.00	848,251.00	7,818,779.00
Vermont	243,750.00	316,875.00	365,625.27	365,625.00	365,625.00	3,268,507.00
Virginia	971,218.98	1,264,612.72	1,448,562.55	1,449,713.00	1,445,852.00	13,501,514.00
Washington	735,806.51	962,177.72	1,113,308.17	1,118,987.00	1,130,080.00	10,145,776.00
West Virginia	534,906.51	696,085.80	798,275.47	797,295.00	793,936.00	7,352,511.00
Wisconsin	1,263,210.57	1,636,543.58	1,877,600.32	1,873,308.00	1,870,262.00	17,438,815.00
Wyoming	623,078.42	814,724.65	936,372.13	934,947.00	935,594.00	8,566,274.00
Hawaii			365,625.00	365,625.00	365,625.00	1,100,153.00
Total	48,750,000.00	63,375,000.00	73,125,000.00	73,125,000.00	73,125,000.00	671,375,000.00

Bureau of Public Roads.

TABLE 749.—*Federal-aid highways completed and under construction*

State	Highways completed and final payment made, year ended June 30, 1925			Projects under construction June 30, 1925 [1]		
	Miles	Total cost	Federal aid	Miles	Estimated cost	Federal aid allotted
		Dollars	*Dollars*		*Dollars*	*Dollars*
Alabama	147.7	1,371,376.08	676,950.32	804.8	15,450,912.60	7,494,856.47
Arizona	86.0	1,241,768.02	728,436.06	158.1	2,186,015.75	1,346,463.82
Arkansas	104.5	2,215,438.77	955,836.10	387.4	7,175,728.71	3,252,163.54
California	361.1	9,347,100.96	5,072,101.44	230.4	9,322,361.01	4,412,288.58
Colorado	148.6	3,768,633.63	2,037,915.37	158.9	3,555,355.79	1,844,058.78
Connecticut	28.0	1,495,767.27	549,810.06	30.9	1,993,218.91	605,847.75
Delaware	34.6	1,224,727.59	488,475.82	12.3	489,503.74	213,581.10
Florida	47.5	1,998,139.65	944,017.05	251.8	8,787,223.95	4,279,762.51
Georgia	264.1	2,988,629.05	1,450,561.26	740.9	11,245,752.26	5,544,980.07
Idaho	93.3	1,212,978.88	722,936.74	154.9	2,454,035.02	1,535,581.67
Illinois	431.5	13,045,775.04	6,360,529.95	270.4	7,979,727.96	3,863,458.50
Indiana	196.4	6,061,728.49	2,906,914.71	432.9	14,852,730.92	7,195,558.57
Iowa	314.0	4,076,507.02	1,870,461.13	434.6	7,505,888.60	3,315,441.22
Kansas	328.7	9,315,559.29	3,742,096.52	600.3	12,808,547.40	5,388,167.91
Kentucky	155.5	4,009,343.97	1,592,047.31	299.0	8,298,279.66	3,724,887.09
Louisiana	266.4	3,459,961.79	1,643,727.50	170.0	3,571,757.27	1,724,822.29
Maine	50.7	1,263,222.53	607,934.95	42.1	1,151,207.40	544,027.42
Maryland	51.2	1,372,462.48	636,061.37	57.1	1,932,936.76	815,245.52
Massachusetts	67.8	3,856,454.20	1,361,934.06	84.2	5,501,324.46	1,424,297.34
Michigan	118.1	2,799,865.73	1,267,704.68	475.2	14,787,520.89	6,990,273.05
Minnesota	429.2	6,378,124.65	2,852,798.97	683.9	6,706,509.32	3,182,300.00
Mississippi	148.4	2,404,091.90	1,159,761.34	491.3	8,854,700.33	4,421,094.52
Missouri	315.4	6,016,128.87	2,973,512.25	869.2	27,236,575.44	11,406,009.15
Montana	130.2	1,289,321.25	933,188.03	182.8	2,112,322.39	1,550,333.81
Nebraska	130.2	1,430,037.20	674,831.91	929.3	8,523,180.75	4,126,635.19
Nevada	131.7	1,457,220.17	1,234,674.80	449.9	5,116,444.07	4,329,875.30
New Hampshire	36.8	1,088,937.67	498,359.29	28.9	882,156.80	426,087.09
New Jersey	70.4	4,337,562.33	1,159,148.50	63.8	9,090,363.22	3,246,713.23
New Mexico	367.0	3,411,712.73	2,155,220.93	394.6	4,353,981.22	2,887,782.68
New York	258.8	9,735,027.18	3,971,232.09	621.0	30,005,625.87	10,225,242.60
North Carolina	235.1	8,446,717.44	3,069,696.93	217.1	8,280,397.44	3,553,613.80
North Dakota	329.6	1,740,290.71	850,425.05	467.1	3,344,335.51	1,672,819.67
Ohio	228.6	8,419,501.38	3,365,075.94	285.1	9,141,395.75	3,397,125.05
Oklahoma	354.9	7,800,159.68	3,784,048.31	311.9	7,080,055.22	3,324,602.25
Oregon	139.0	2,305,315.53	1,323,270.84	136.9	3,016,966.63	1,745,532.24
Pennsylvania	120.6	6,229,586.21	2,107,329.18	529.2	30,880,520.14	8,168,048.18
Rhode Island	18.8	854,098.95	340,460.13	26.3	1,798,608.99	548,589.59
South Carolina	311.5	2,146,871.11	997,222.32	373.3	6,546,967.82	2,938,981.67
South Dakota	458.1	3,416,836.81	1,745,242.73	1,011.4	7,593,468.47	3,742,326.64
Tennessee	238.3	6,983,457.63	3,418,143.70	422.7	12,364,278.08	5,587,754.44
Texas	784.3	11,778,972.27	4,867,315.81	1,509.1	25,177,136.37	10,515,352.63
Utah	204.1	2,954,735.66	1,923,030.99	226.1	2,953,903.45	2,014,706.49
Vermont	33.4	1,093,060.35	510,125.33	26.6	1,207,289.94	578,117.66
Virginia	113.7	3,064,418.53	1,470,215.77	348.7	10,127,047.08	4,560,134.02
Washington	69.7	1,967,888.51	826,316.42	127.3	3,015,386.61	1,426,900.00
West Virginia	71.1	1,853,452.91	865,251.80	149.2	5,194,890.10	2,178,214.28
Wisconsin	126.4	3,053,237.76	1,478,607.05	180.4	3,570,491.52	1,746,214.36
Wyoming	294.4	2,682,193.72	1,660,997.97	257.2	3,766,266.56	2,363,221.79
Hawaii				6.5	342,277.22	97,440.00
Total	9,445.4	190,485,399.55	87,801,946.18	17,123.0	389,606,481.37	171,448,571.53

Bureau of Public Roads.

[1] Includes 4,587.2 miles of practically completed projects.

TABLE 750.—*Highways: Federal-aid projects completed, by types, 1918–1925*

Year ended June 30—	Graded and drained			Sand-clay		
	Miles	Total cost	Federal aid	Miles	Total cost	Federal aid
		Dollars	*Dollars*		*Dollars*	*Dollars*
1918						
1919	10.0	11,808.24	4,738.04	46.8	126,885.24	63,321.17
1920	203.0	681,851.41	298,906.04	99.0	384,811.91	181,107.89
1921	349.9	2,308,794.90	1,021,277.45	384.2	2,401,029.18	1,075,989.00
1922	1,635.5	17,134,140.97	7,065,698.94	1,111.8	9,208,839.93	4,235,269.25
1923	1,966.0	14,569,579.11	6,316,326.91	1,016.7	8,120,872.33	3,896,299.34
1924	2,365.2	14,853,625.61	6,720,790.19	805.8	5,633,910.67	2,839,353.07
1925	1,824.4	15,968,180.00	7,727,969.57	729.9	4,390,260.33	2,263,697.37
Total	8,354.0	65,527,980.24	29,145,707.14	4,185.2	30,237,213.19	14,538,364.43

Year ended June 30—	Gravel			Water-bound macadam		
	Miles	Total cost	Federal aid	Miles	Total cost	Federal aid
		Dollars	*Dollars*		*Dollars*	*Dollars*
1918						
1919	55.2	236,623.22	103,891.64			
1920	247.8	1,795,314.88	778,582.85	11.7	139,131.96	69,241.84
1921	1,201.4	9,839,752.94	4,268,225.54	40.5	560,631.81	254,980.59
1922	3,445.3	35,333,778.98	15,854,797.05	286.8	4,279,366.52	1,837,921.56
1923	4,404.0	46,479,134.23	20,867,363.64	287.5	5,987,050.01	2,578,843.54
1924	3,463.1	32,733,515.57	15,332,944.52	238.6	4,227,471.97	1,757,186.78
1925	3,328.8	36,724,556.12	18,981,373.60	117.3	2,301,291.42	1,095,015.84
Total	16,234.7	162,923,101.22	76,039,214.44	982.4	17,430,493.96	7,567,687,48

Year ended June 30—	Bituminous macadam			Bituminous concrete		
	Miles	Total cost	Federal aid	Miles	Total cost	Federal aid
		Dollars	*Dollars*		*Dollars*	*Dollars*
1918				6.8	136,715.94	59,571.76
1919	1.2	41,237.10	11,620.00	19.5	347,484.00	162,622.93
1920	11.9	205,783.73	100,882.07	19.7	460,080.99	195,509.11
1921	148.9	3,428,606.06	1,576,184.47	159.1	4,580,101.11	2,005,818.94
1922	294.5	8,854,811.29	3,822,667.03	392.8	13,533,187.30	5,221,434.96
1923	468.1	14,640,388.38	6,355,525.91	131.0	4,829,129.82	2,071,446.10
1924	601.0	17,583,663.08	7,754,528.06	210.6	8,066,572.91	3,278,561.95
1925	624.8	18,280,813.53	8,252,385.29	244.0	8,914,394.98	3,614,311.47
Total	2,149.5	63,035,303.17	27,873,792.83	1,183.5	40,583,526.44	16,516,673.76

Year ended June 30—	Portland-cement concrete			Brick		
	Miles	Total cost	Federal aid	Miles	Total cost	Federal aid
		Dollars	*Dollars*		*Dollars*	*Dollars*
1918	5.7	121,015.43	52,685.22			
1919	25.2	599,328.74	217,917.11	18.3	702,502.04	194,361.28
1920	110.3	2,729,185.04	1,139,723.28	21.8	839,373.33	261,104.09
1921	494.6	16,490,885.57	7,374,016.37	26.8	1,520,655.96	391,123.05
1922	2,126.9	84,788,065.27	35,844,590.98	205.6	9,689,179.46	3,100,843.36
1923	1,621.4	63,858,248.33	26,021,235.74	69.0	2,998,868.14	1,063,446.49
1924	1,292.0	46,578,479.90	20,851,772.92	166.8	6,787,954.05	2,610,165.94
1925	2,431.6	86,582,667.11	37,900,028.89	122.5	5,372,580.88	2,033,701.09
Total	8,107.7	301,231,906.07	129,249,310.54	631.3	27,872,113.86	9,654,745.21

Year ended June 30—	Bridges			All types		
	Miles	Total cost	Federal aid	Miles	Total cost	Federal aid
		Dollars	*Dollars*		*Dollars*	*Dollars*
1918				12.5	257,731.37	112,256.98
1919	0.2	59,004.90	10,000.00	176.8	2,124,873.48	768,472.17
1920	.9	169,467.28	84,733.45	716.1	7,405,000.53	3,159,790.53
1921	4.2	1,018,723.83	494,474.58	2,898.5	42,149,181.36	18,462,089.99
1922	20.0	6,153,276.71	2,844,952.47	9,519.3	188,985,646.43	79,816,175.60
1923	10.3	5,318,937.62	2,510,895.00	9,973.9	166,802,207.97	71,681,382.67
1924	12.3	3,792,417.69	1,907,865.25	9,155.7	140,227,611.45	63,053,168.68
1925	22.2	7,468,321.53	3,737,015.49	9,445.5	186,003,065.90	85,605,263.74
Total	70.1	23,980,149.56	11,589,936.24	41,898.4	732,821,787.71	322,175,199.20

Bureau of Public Roads.

TABLE 751.—*Mileage of road in State highway systems at the end of 1924*

State	Year report ends	Grand total mileage in systems	Unimproved, and earth partially graded	Earth, to established grade, and drained	Total miles of road surfaced	Sand-clay	Gravel, etc., untreated	Water-bound macadam, untreated	Surface-treated macadam and gravel	Bituminous macadam, by penetration	Sheet asphalt	Bituminous concrete	Cement concrete	Block pavements			
														Brick	Asphalt	Wood	Stone
Alabama	Dec. 31	3,958.0	2,147.7	157.8	1,652.5	589.0	874.6	35.9	25.3	[1] 30.8	5.7	74.9	16.1			0.2	
Arizona	do	1,984.4	310.5	306.0	1,367.9		1,189.8				15.0	24.3	138.8				
Arkansas	do	6,718.0	2,248.0	1,606.0	2,864.0		2,065.0	183.0	48.0	144.0	32.0	261.0	131.0				
California	do	6,400.0	2,618.8	[2] 550.0	3,231.2		[3] 750.0	39.4		378.6		332.9	1,730.3				
Colorado	do	8,928.0	223.4	5,296.2	3,408.4		3,208.5						199.9				
Connecticut	June 30	1,821.7		153.9	1,667.8		75.1		1,030.5	193.4		125.2	241.9	1.7			
Delaware	Dec 31	417.8			417.8				1.3	20.1			390.0	6.4			
Florida	do	3,508.5	1,409.3	44.7	2,054.5	385.0	23.0	142.3	604.4	175.0	192.0	25.8	112.0	337.0	58.0		
Georgia	do	6,235.9	3,792.1	118.2	2,325.6	1,530.0	402.0	35.1	26.4	115.8	21.6	12.2	181.9	.6			
Idaho	do	4,071.3	2,192.9	380.0	1,498.4	68.2	1,327.5				5.4	56.2	41.1				
Illinois	do	4,819.5	339.1	1,063.8	3,416.6		.4	.5		3.4	4.6	22.0	3,305.7	80.0			
Indiana	Sept. 30	3,916.4	9.3	130.7	3,776.4		1,845.6	990.6	29.1	136.2		24.1	680.1	70.2		.5	
Iowa	Dec. 31	6,659.7	2,058.6	1,934.4	2,666.7		2,164.4						448.4	53.9			
Kansas	do	7,147.0	5,990.4	319.8	836.8	65.0	160.1			72.9			426.5	112.3			
Kentucky	do	8,000.0	5,315.3	435.7	2,249.0		545.1	481.2	875.0	[3] 217.1		13.8	111.6	5.2			
Louisiana	do	7,000.0	3,598.8		3,401.2		3,256.6		87.1	20.2		12.4	9.9	15.0			
Maine	do	1,455.5	271.0		1,184.5	7.3	643.5		304.5	176.1			53.1				
Maryland	Sept. 30	2,247.2			[4] 2,247.2		[5] 383.1		1,004.2		56.0	28.2	768.0	7.7			
Massachusetts	Nov. 30	1,515.5		12.8	1,502.7	2.7			[6] 533.7	640.3		177.6	145.7	.8		.1	1.8
Michigan	Dec. 31	[7] 6,581.7	36.1	674.8	5,870.8	10.5	3,614.8		682.3	107.0		188.3	1,257.7	10.2			
Minnesota	Nov. 1	6,982.4	183.2	1,328.3	5,470.9	191.1	4,691.1	14.8		10.6		66.2	473.9	10.7		12.5	
Mississippi	Dec. 31	5,398.9	2,679.3	346.0	2,373.6	2.5	2,079.3	10.7	49.4	4.7	6.7	13.8	187.3	19.2			
Missouri	do	7,640.0	4,120.4	1,860.2	1,659.4		1,079.5			80.7			[8] 499.2				
Montana	do	7,957.0	6,956.7	280.1	720.2		679.7		.6	5.5		2.3	32.1				
Nebraska	do	5,742.3	3,350.2	1,465.5	926.6	239.7	615.4				2.6	8.2	41.7	19.0			
Nevada	do	2,704.3	1,931.6	182.2	590.5		509.6		[9] 10.2	24.0		1.6	45.1				
New Hampshire	do	[10] 1,367.4	246.2	10.4	1,110.8		209.9	9.7	728.4	95.6		59.2	8.0				
New Jersey	do	[11] 1,030.3		19.3	1,011.0		129.0	19.2	146.9	7.4	47.3	229.9	407.7	4.1	3.1	6.3	10.1
New Mexico	Nov. 30	7,963.0	6,300.7	185.0	1,477.3		1,413.2					.7	63.4				
New York	Dec. 31	11,260.0	1,973.5	6.7	9,279.8		119.4		2,399.1	4,080.6		198.6	2,189.9	264.5	23.4	.6	3.7
North Carolina	do	6,200.0		889.6	5,310.4	2,905.6	565.6	125.1		151.6		781.7	734.0	46.8			
North Dakota	June 30	[12] 6,174.0	4,057.2	1,544.0	572.8		568.0						4.8				
Ohio	Dec. 31	10,546.0	4,805.7		5,740.3		564.4	1,462.9		[13] 1,122.2	39.9	193.1	1,113.5	1,244.3			
Oklahoma	do	5,589.0	4,173.5	47.0	1,368.5		885.5					80.0	383.0	20.0			
Oregon	do	4,464.0	1,319.0	318.0	2,827.0		1,949.0					684.0	194.0				

Pennsylvania [14]	do	10,768.0		3,913.6	6,854.4		592.7		2,681.1	332.2	206.1	283.5	2,373.3	371.3	6.1	3.4	4.7
Rhode Island	do	761.6	177.9	178.0	405.7				118.5	82.4	2.9	141.4	30.5				
South Carolina	do	4,740.0	1,616.6	33.5	3,089.9	2,637.8	186.9	14.8	13.5	16.8	65.3	41.7	113.1				
South Dakota	do	[15] 5,663.2	200.0	3,987.7	1,475.5		1,474.3						1.2				
Tennessee	do	4,644.4	1,905.5	259.0	2,479.9		829.4	932.1	171.5	388.3	.19.6	50.9	88.1				
Texas	do	16,668.0	8,445.7	995.0	7,227.3	609.1	4,462.5	245.4	1,289.2	114.3	25.0	66.6	372.8	42.4			
Utah	Nov. 30	3,132.3	1,525.0	667.6	939.7		690.5				10.5	41.4	197.3				
Vermont	Dec. 31	4,453.0	1,584.6		2,868.4		2,728.8	9.0	75.8	22.9			31.9				
Virginia	Sept. 30	4,621.6	1,835.8	847.7	2,438.1	[16]	750.5		923.4	388.9	10.7	7.6	356.1	.9			
Washington	Dec. 31	3,133.7	673.3	142.2	2,318.2		1,770.9			39.6	1.8	37.3	459.3	9.3			
West Virginia	do	3,594.0	2,068.2	564.7	961.1		113.3	92.4		[17] 287.3	.7	57.3	281.6	128.5			
Wisconsin	do	[18] 10,000.0		1,500.0	8,500.0	800.0	5,500.0	500.0					[19] 1,700.0				
Wyoming	do	[20] 3,136.8	1,903.6	523.2	710.0		669.6		2.2			27.1	11.1				
Total		259,721.3	96,094.7	35,279.3	128,347.3	10,043.5	58,357.1	5,344.1	13,891.6	9,686.5	771.4	4,453.0	22,783.6	2,882.0	90.6	23.6	20.3

Bureau of Public Roads.

[1] Includes 2.4 miles of patent "Rawhide" road.
[2] Partly estimated.
[3] Includes Kentucky rock asphalt road.
[4] Includes 38 miles hard pavement in Baltimore.
[5] Includes 73.6 miles of shell road.
[6] Includes 11.5 miles of oil-treated sand road.
[7] State trunk roads only.
[8] Includes 111.4 miles of road with combined 9 feet of concrete and 7 feet of gravel.
[9] Oil-treated sand road.
[10] Excludes 60.2 miles of road built by compact with towns of over 2,500 population.
[11] Includes 94.8 miles taken over from county system.
[12] System increased by 1,319 miles of unimproved (or partly graded) road.
[13] Includes 113.4 miles of Kentucky rock asphalt.
[14] Includes State-aid system.
[15] 121.4 miles added to system of which 18 miles were county graded roads and 51 miles county gravel roads.
[16] Included with gravel.
[17] Includes 22.7 miles of Kentucky rock asphalt road.
[18] Approximate data: 2,500 miles of county road added to system.
[19] Includes bituminous concrete.
[20] Decrease in mileage by revision of roads in system.

TABLE 752.—*Mileage of county and local roads at the end of 1924*

State [1]	Unimproved, and earth partially graded	Earth to established grade and drained	Total miles of road surfaced	Sand-clay	Gravel, etc., untreated	Water-bound macadam, untreated	Surface-treated macadam and gravel	Bituminous macadam, by penetration	Sheet asphalt	Bituminous concrete	Cement concrete	Brick	(w) Wood, (a)asphalt, (s) stone, block	Miscellaneous	Grand total mileage rural roads, other than State highway system
Alabama	46,685.7		10,857.5	6,486.1	3,311.4	663.0	224.9	121.6	19.2	29.9	1.4				57,543.2
Arizona	16,745.2	1,932.3	1,693.4	648.3	716.8					67.1	261.2				20,370.9
Arkansas	63,972.5	1,200.0	2,974.5	150.2	2,434.9	162.2	28.4	102.7	9.4	35.9	50.8				68,147.0
California	27,499.0	29,688.0	12,031.0		6,123.0	966.0	566.0	992.0		755.0	1,729.0			900.0	69,218.0
Colorado	25,643.9	27,707.1	5,341.4	(2)	5,341.4										58,692.4
Connecticut	7,277.9	2,376.1	742.9		8.4	111.5	471.3	87.4	4.0	17.7	42.6				10,396.9
Delaware (1923)	1,923.5	1,790.0	279.5		50.0	30.0	152.2	19.5		20.5	6.8	0.5			3,993.0
Florida	17,960.6		6,944.4	2,786.5	1,482.6	537.1	687.4	159.2	593.2	38.9	145.3	427.2	(a) 87.0		24,905.0
Georgia	49,186.5	26,080.6	16,861.6	12,598.4	3,151.8	184.5	114.3	231.9	33.7	70.0	477.0				92,128.7
Idaho	9,025.0	12,250.0	9,470.0		9,015.0	325.0				60.0				70.0	30,745.0
Illinois	80,098.3	654.0	10,756.2		6,782.6	2,622.5	138.0	64.4	28.4	34.0	926.3	152.0	(w) 8.0		91,508.5
Indiana	40,505.0		36,112.3		23,615.5	11,038.0	208.9	260.1		147.9	690.8	151.1			76,617.3
Iowa	95,076.1	827.6	2,060.8		2,058.8						2.0				97,964.5
Kansas	121,405.0		573.0		270.0	240.0	63.0								121,978.0
Kentucky	45,635.6	251.7	14,816.7	70.0	3,153.0	10,644.3	740.3	11.0	56.0		36.1	4.0	(w) 5.0	97.0	60,704.0
Louisiana	31,526.2		1,276.8		1,265.0			3.2		5.6		3.0			32,803.0
Maine	16,695.6	8.9	2,779.8	.9	2,113.3	605.4	43.1	7.5	3.8	1.5	4.3				19,484.3
Maryland	8,722.0	1,807.0	2,110.0	414.0	785.9	189.0	415.0	70.0			48.0			189.0	12,639.0
Massachusetts	11,775.4		5,807.5		3,126.5	96.2	1,485.6	917.6		140.6	41.0				17,582.9
Michigan	54,715.0	860.0	15,126.4	67.5	12,503.2	1,254.0	353.1	94.0	2.0	91.7	435.4	3.6		231.9	70,701.4
Minnesota	81,457.2	2,538.1	16,839.2	3,776.2	12,832.5	68.6	67.4		8.5	21.9	61.6	2.5			100,834.5
Mississippi	43,968.6	645.6	6,867.3	364.3	6,114.0	89.5	20.0	228.2		6.0	45.3				51,481.5
Missouri	95,384.8	1,200.0	7,875.3	1,755.3	4,497.5	1,213.8	56.0	79.2	1.0	5.6	256.9	10.0			104,460.1
Montana	59,609.9		210.0		210.0										59,819.9
Nebraska (1923)	79,549.5	1,785.7	214.3	146.8	61.0	.7				2.0	3.3	.5			81,549.5
Nevada	18,247.0	1,513.0	314.5		314.0	.5									20,074.5
New Hampshire	11,605.0		115.6		113.0			2.6					(a) 3.2		11,720.6
New Jersey	74.9	10,173.9	6,440.4		2,709.5	1,323.2	592.4	718.4	244.1	476.9	256.4	36.8	(s) 79.5		16,689.2
New Mexico	37,638.4	495.7	933.6	731.0	202.6										39,067.7
New York	54,912.8	440.7	15,259.5		5,110.4	3,484.4	3,637.4	2,408.6	16.5	17.3	619.9	65.0			70,613.0
North Carolina (1921)	48,867.4		12,839.3	9,610.1	2,726.3	275.2	119.8	35.0	12.0	20.6	20.0	19.3	(s) .5	.5	61,706.7
North Dakota	99,842.3		482.1		482.1										100,324.4
Ohio (1921)	45,861.8	283.8	27,840.5	501.0	13,184.1	14,650.9	951.8	616.5	4.6	25.2	314.8	276.9		414.7	73,986.1
Oklahoma	124,801.8	3,571.7	299.5			29.7	267.8				2.0				128,673.0
Oregon	30,945.0	7,068.0	7,293.0		6,837.0					23.5	90.5			[3] 130.0	45,306.0

Pennsylvania (1921)	72,007.7		9,244.8	.5	72.6	696.2	65.7	17.2	1.2	319.8	98.3	177.0	7,796.3	81,252.5
Rhode Island	1,313.2		244.8		60.5	47.8	49.5	78.5	5.0	.5			(s) 3.0	1,558.0
South Carolina	46,422.1	7,255.4	5,991.0	5,489.1	401.8	19.1	5.0		1.0	26.1	48.9			59,668.5
South Dakota	109,603.7		538.5		538.5									110,142.2
Tennessee	39,632.6	10,596.6	9,853.1		4,703.0	3,933.7	659.3	99.6	343.6	17.0	30.9		(w) 1.0	60,082.3
Texas	137,345.4	1,850.0	11,821.6	1,500.0	9,495.8	325.8	130.0	243.2	81.4	45.4				151,017.0
Utah (1921)	16,912.9	1,322.0	2,013.9	897.6	1,230.1	12.0	3.6	7.2		17.7	45.7			20,248.8
Vermont (1921)	8,241.0	554.0	1,613.0		1,613.0									10,408.0
Virginia (1921)	50,227.2	100.0	4,923.5	2,528.8	993.7	762.4	419.7	129.2			89.7			55,250.7
Washington	22,126.0	9,417.0	14,207.0		12,435.0			112.0	20.0	229.0	1,198.0	53.0	160.0	45,750.0
West Virginia (1921)	30,924.8	200.0	716.1		93.7	398.7	52.2	35.1		7.7	66.8	55.0	6.9	31,840.9
Wisconsin	20,456.3	32,570.7	15,937.2	3,315.8	11,415.9	889.7					315.8			68,964.2
Wyoming	43,168.2		14.2		14.2									43,182.4
Total	2,202,621.5	201,015.2	339,558.5	53,638.4	185,925.0	54,890.6	12,789.1	7,852.6	1,488.6	2,990.5	8,362.8	1,437.4	187.2	2,996.3	2,743,195.2

Bureau of Public Roads.

[1] A few States did not report 1924 data. Latest available information has been used, the year being indicated in first column.
[2] Sand-clay included with gravel.
[3] Wood plank road.

TABLE 753.—*Highway expenditures of State and State-controlled funds, 1924*

State	Fiscal year ends	Construction on roads and bridges	Percentage of total disbursements	Maintenance on roads and bridges	Percentage of total disbursements	Administration and engineering	Percentage of total disbursements	Bonds, notes, etc., payments on principal[1]	Percentage of total disbursements	Bonds, notes, etc., payments on interest	Percentage of total disbursements	Equipment, machinery and material[2]	Percentage of total disbursements	A County funds B Right of way C Traffic, etc.[3]	Percentage of total disbursements	Miscellaneous expenses	Percentage of total disbursements	Unexpended balance at the end of year	Total disbursements during year (100 per cent)
		Dollars		*Dollars*		*Dollars*		*Dollars*		*Dollars*		*Dollars*		*Dollars*		*Dollars*		*Dollars*	*Dollars*
Alabama	Sept. 30	6,351,998	81.7	264,622	3.5	261,330	3.3	427,769	5.5	403,057	5.1	70,535	0.9					2,005,657	7,779,311
Arizona	Dec. 31	2,245,141	73.1	442,610	14.4	383,247	12.5											490,154	3,070,998
Arkansas	do	7,368,608	65.8	1,275,230	11.4	262,500	2.3					308,010	2.7	(A) 1,999,900	17.8			867,565	11,214,248
California	do	12,071,044	56.1	3,252,652	15.1	1,759,598	8.2	775,000	3.7	3,025,434	14.0	625,560	2.9					5,699,362	21,509,288
Colorado	Nov. 30	4,589,396	70.7	804,727	12.4	153,481	2.3	500,000	7.7	326,000	5.1	94,922	1.4	(C) 22,041	0.4			1,045,807	6,490,567
Connecticut	June 30	5,013,036	57.7	3,380,657	38.9	296,266	3.4											5,648,899	8,689,959
Delaware	Dec. 31	2,863,165	78.3	94,663	2.6	123,289	3.4	192,000	5.3	317,700	8.7	7,898		(C) 59,501	1.7			744,315	3,658,216
Florida	do	5,338,381	76.8	942,026	13.5	359,283	5.2					309,445	4.5					547,346	6,949,135
Georgia	do	4,313,624	59.0	1,564,142	21.5	764,900	10.6					552,388	7.5	(A) 106,201	1.4			803,375	7,301,255
Idaho	do	1,931,096	74.7	302,544	11.7	61,461	2.4			162,358	6.3	127,288	4.9					314,142	2,584,747
Illinois	do	33,442,772	81.8	2,044,861	5.0	2,368,148	5.8			1,388,813	3.4	429,662	1.1	(A) 1,176,893	2.9			1,141,193	40,851,149
Indiana	do	6,709,745	44.9	3,913,961	26.3	497,917	3.4					3,239,756	21.7	[4] 558,187	3.7			1,941,695	14,919,566
Iowa	Nov. 30	9,706,575	54.2	2,722,077	15.2	746,168	4.2	[5] 3,391,000	18.9	[5] 597,503	3.4	117,400	0.6	(B) 629,911	3.5			3,695,780	17,910,634
Kansas	Dec. 31	6,254,640	94.2	(6)		384,250	5.8												6,638,899
Kentucky	do	10,447,875	67.5	3,971,571	25.7	256,338	1.7					414,925	2.7	[7] 377,420	2.4	1,748		(6)	15,469,877
Louisiana	do	7,169,073	81.1	762,023	8.6	329,960	3.7	29,800	0.4	26,000	0.3	373,217	4.2	(C) 152,609	1.7			618,868	8,842,682
Maine	do	4,259,194	61.2	1,537,751	22.2	[8] 71,759	1.0	119,000	1.7	395,564	5.6	271,301	3.9	(C) 140,494	2.0	164,595	2.4	1,208,725	6,959,658
Maryland	Sept. 30	7,815,284	61.4	1,449,427	11.4	(10)		2,391,946	18.8	1,007,700	7.9					63,178	0.5	894,825	12,727,535
Massachusetts	Dec. 31	5,514,460	41.7	5,723,455	43.2	1,010,724	7.7	540,500	4.1	250,609	1.9	200,003	1.4					2,831,876	13,239,751
Michigan	June 30	16,878,177	69.5	2,621,550	10.8	333,695	1.4	1,525,034	6.3	1,999,580	8.3	855,680	3.5	(A) 55,885	0.2			2,024,911	24,269,601
Minnesota	Dec. 31	8,080,664	48.2	3,021,064	18.0	999,380	5.9	[11] 175,217	1.4	[11]1,592,628	9.4	391,797	2.2	[12] 2,499,103	14.9	11,053		348,104	16,761,906
Mississippi	do	4,462,872	83.9	702,693	13.2	[13] 80,000	1.5					55,000	1.0	(A) 20,000	0.4			1,680,883	5,320,565
Missouri	do	20,418,612	78.2	2,019,323	7.7	770,017	2.9	2,000,000	7.7	585,000	2.2					313,829	1.3	5,478,698	26,106,781
Montana	do	1,451,517	81.2	134,802	7.5	193,034	10.8					9,009	0.5					242,282	1,788,362
Nebraska	do	3,052,541	44.9	1,246,306	18.3	284,337	4.2							(A) 2,221,218	32.6			2,614,244	6,804,402
Nevada	Nov. 30	2,544,510	80.1	122,789	3.9	326,542	10.3			32,000	1.0	113,336	3.6			35,208	1.1	169,096	3,174,385
New Hampshire	Dec. 31	1,865,052	48.5	1,753,547	45.6	76,971	2.0			3,938	0.1	148,506	3.8					748,412	3,848,014
New Jersey	do	13,742,768	63.9	1,587,205	7.4	1,268,407	5.9	891,349	4.1			50,747	0.2	[14] 3,712,397	17.3	234,817	1.2	6,840,691	21,487,690
New Mexico	do	4,031,746	87.5	382,083	8.3	119,306	2.6			34,820	0.7	23,940	0.5			17,508	0.4	42,493	4,609,403
New York	do	17,804,409	42.1	11,873,484	28.1	1,591,188	3.8	1,802,636	4.3	4,280,000	10.1			(A) 4,905,910	11.6			27,311,828	42,257,627

North Carolina	June 30	24,195,514	69.7	3,22[illegible],561	9.3	1,9[illegible]7,158	5.6	360,000	1.0	1,891,602	5.4	2,601,637	7.5	(A) 540,224	1.5			1,355,716	34,732,806
North Dakota	do	1,445,729	78.4	83,316	4.8	307,950	16.7							(A) 1,586	0.1			334,959	1,844,276
Ohio	Dec. 31	19,399,433	71.7	6,760,896	25.0	914,293	3.3									4,987		7,092,590	27,079,360
Oklahoma	do	5,874,648	88.5	91,300	1.3	568,985	8.6					102,932	1.6					4,200,705	6,637,865
Oregon	Nov. 30	5,287,116	56.5	1,647,981	17.7	218,746	2.3	334,500	3.6	1,824,340	19.5	19,849	0.2	(C) 27,848	0.2			2,924,494	[15] 9,360,380
Pennsylvania	Dec. 31	22,664,141	46.9	15,260,150	31.6	3,242,845	6.8					4,065,901	8.4	[16] 1,611,233	3.3	[17] 1,488,915	3.0	6,327,574	48,333,185
Rhode Island	Nov. 30	1,750,440	63.2	472,060	17.0	143,644	5.2	38,680	1.4	96,020	3.5	234,471	8.5			34,334	1.2	896,096	2,769,649
South Carolina	Dec. 31	3,982,924	67.7	1,284,771	21.8	416,324	7.0					203,413	3.5					19,832	5,887,432
South Dakota	June 30	4,379,090	78.3	278,216	5.0	423,301	7.5					464,411	8.3	(C) 13,768	0.2	36,834	0.7	673,294	[15] 5,595,620
Tennessee	Nov. 30	5,796,142	68.9	1,795,611	21.4	474,400	5.7					338,961	4.0					1,032,825	8,405,114
Texas	Dec. 31	10,211,258	40.5	3,793,714	15.0	433,995	1.7					1,061,493	4.2	(A) 9,730,000	38.6			889,293	25,230,460
Utah	do	2,005,674	55.3	530,443	14.6	270,524	7.6	350,000	9.6	325,000	8.9	49,196	1.4			96,314	2.6	46,428	3,627,151
Vermont	do	1,590,000	56.2	987,000	34.9	110,000	3.8					145,000	5.1					510,000	2,832,000
Virginia	Sept. 30	9,582,119	65.6	3,445,765	23.6	340,143	2.3					969,100	6.6			273,985	1.9	177,438	14,611,112
Washington	Dec. 31	5,323,005	69.4	1,735,980	22.7	515,469	6.7									96,629	1.2		[19] 7,671,089
West Virginia	do	11,002,593	77.9	464,501	3.3	465,139	3.3	1,100,000	7.8	775,268	5.5	[20] 217,063	1.5	(A) 93,798	0.7	5,782		5,229,899	14,124,144
Wisconsin	do	5,780,282	65.1	2,393,330	26.9	451,894	5.1					246,054	2.8			10,258	0.1	1,870,191	8,881,798
Wyoming	do	3,071,970	63.9	635,141	13.2	197,823	4.1	450,000	9.4	159,625	3.4	283,360	5.9	(C) 1,800		5,636	0.1	100,125	4,805,355
Total		381,080,058	62.9	104,806,557	17.3	27,536,829	4.6	17,394,431	2.8	21,500,649	3.6	19,793,166	3.3	A 28,669,628 B 1,255,637 C 732,662	4.7 0.2 0.1	2,895,590	0.5	[21] 106,558,540	605,665,207

Bureau of Public Roads.

The disbursements shown above, in general, cover money spent on State roads; in some States county-road work is supervised by State highway department.

[1] On retirements and sinking funds.
[2] Includes repairs, rentals, and purchases.
[3] Includes reimbursements to counties, towns, etc., purchases of right of way and traffic control (policing and signs).
[4] Consists of $500,000 to counties and $58,187 for purchase of right of way.
[5] On primary road bonds issued by counties.
[6] Maintenance of roads by counties total $2,998,059.
[7] County transfers, $372,221, and purchase of right of way $5,200.
[8] Outstanding warrants on road fund, $11,072,321.
[9] Engineering included in construction and maintenance.
[10] Included in construction and maintenance.
[11] Payment from highway reimbursement funds on county bond obligations assumed by State.
[12] Includes $462,339 for purchase of right of way and $2,036,763 for county reimbursement.
[13] Administration only as engineering is included with construction and maintenance.
[14] Includes $100,000 for purchase of right of way (toll bridge), $3,115,189 on county roads and $497,228 on town roads.
[15] Excludes expenditures on market roads and forest-aid roads.
[16] Includes $314,601 traffic control, and $1,296,632 transfer for township reward.
[17] Includes $1,442,628 for expenses motor vehicle registration.
[18] State bridge fund receipts and disbursements not included.
[19] Forest-aid road expenditures omitted.
[20] Included in construction and maintenance.
[21] Deficit in one State of $5,123,945 allowed for in this total.

91044°—26——91

TABLE 754.—*Highway expenditures by counties, townships, and districts, 1924*

State	Construction, local, town, and county roads	Maintenance, local, town, and county roads	Overhead expenses (when reported)	Bond and note payments		Miscellaneous expenses	Unexpended balance at end of year	Total disbursements, county, town, and local roads
				Principal [1]	Interest [1]			
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Alabama	2, 120, 745	5, 863, 787						7, 984, 532
Arizona	789, 596	745, 892	90, 547			145, 841	177, 918	1, 771. 876
Arkansas	1, 300, 000	2, 100, 000		5, 866, 000	(1)		3, 968, 400	9, 260, 000
California	8, 000, 000	14, 834, 405	675, 000	1, 645, 770	2, 078, 069	740, 329		27, 973, 576
Colorado	1, 550, 221	2, 566, 164	95, 385			936, 841	364, 496	5, 148, 611
Connecticut	466, 350	2, 102, 718					20, 000	2, 569, 068
Delaware	349, 876	491, 734	18, 611	10, 000	326, 055	46, 077	129, 578	1, 238, 353
Florida	10, 153, 889	3, 195, 434				5, 376, 229	6, 550, 212	18, 725, 552
Georgia	2, 175, 631	5, 772, 189				3, 654, 424	5, 026, 381	11, 602, 244
Idaho								[2] 3, 000, 000
Illinois	3, 486, 300	5, 464, 500	262, 500	482, 600	(1)	884, 100	132, 600	10, 580, 000
Indiana	19, 847, 600	10, 951, 400		16, 758, 500	(1)	24, 800	10, 782, 600	47, 582, 300
Iowa	8, 215, 483	9, 068, 579	490, 268	874, 570	(1)	371, 172	3, 190, 459	19, 035, 072
Kansas	12, 670, 607	2, 998, 059		481, 490	(1)	211, 528	4, 907, 569	16, 361, 684
Kentucky	1, 066, 260	3, 369, 750	255, 100	1, 164, 350	(1)	3, 071, 940	676, 735	8, 927, 340
Louisiana	4, 985, 743	1, 317, 834				2, 930, 922	3, 345, 614	9, 234, 499
Maine								[3] 3, 300, 000
Maryland	1, 150, 000	2, 100, 000		137, 000	241, 000			3, 628, 000
Massachusetts								[4] 1, 500, 000
Michigan	12, 955, 500	4, 807, 480	1, 164, 690	6, 731, 360	(1)	2, 685, 180	1, 261, 220	28, 344, 270
Minnesota	12, 286, 510	10, 037, 485	1, 047, 483			2, 850, 937	682, 112	26, 222, 415
Mississippi	877, 024	7, 449, 743				3, 408, 256	[5] (130, 819)	11, 735, 023
Missouri	10, 769, 223	2, 140, 373	462, 466	2, 643, 461	(1)	594, 279	1, 926, 282	16, 609. 802
Montana		1, 804, 444					1, 172, 962	1, 804, 444
Nebraska	8, 370, 488	2, 627, 735	264, 418			766, 405	2, 733, 839	12, 229, 046
Nevada	175, 317	278, 654	15, 000			3, 463	58, 783	472, 634
New Hampshire	360, 853	1, 140, 577				12, 914		1, 463, 344
New Jersey	5, 136, 500							5, 136, 500
New Mexico	166, 906	252, 230	21, 497			124, 037	103, 665	563, 860
New York	16, 500, 000	5, 900, 000				2, 000, 000	2, 100, 000	24, 400, 000
North Carolina	6, 990, 000	3, 940, 000	940, 000	970, 000	3, 210, 000			16, 050, 000
North Dakota	2, 250, 065	1, 826, 281	94, 185			65, 300	118, 760	4, 235, 786
Ohio	19, 070, 000	15, 815, 000		13, 170, 000	(1)			48, 955, 000
Oklahoma	500, 000	10, 000, 000				1, 711, 000	5, 539, 580	12, 211, 000
Oregon							5, 000, 000	[3] 6, 000, 000

Pennsylvania	13, 500, 000	12, 000, 000	800, 000	6, 000, 000	(1)	2, 700, 000		[2] 35, 000, 000
Rhode Island								[3] 312, 000
South Carolina	2, 285, 972	1, 914, 116				2, 020, 911	6, 475, 942	6, 220, 999
South Dakota	4, 721, 599	2, 878, 121	151, 807				[5] (772, 866)	7, 751, 527
Tennessee	3, 478, 800	3, 282, 786					779, 913	6, 761, 646
Texas	13, 160, 000	5, 000, 000				8, 000, 000	2, 488, 006	26, 160, 000
Utah								[3] 1, 500, 000
Vermont	535, 000	135, 000					404, 000	670, 000
Virginia	8, 259, 431			1, 286, 967	(1)	129, 048	[5] (1, 628, 372)	9, 675, 446
Washington								[3] 9, 000, 000
West Virginia	6, 477, 700	3, 532, 500		1, 647, 300	1, 301, 900		4, 294, 800	12, 959, 400
Wisconsin	16, 095, 048	14, 004, 402	515, 219			2, 200, 000	[5] (1, 405, 640)	32, 814, 669
Wyoming	618, 841	360, 569					[5] (56, 375)	979, 410
Total detailed	244, 908, 463	184, 084, 944	7, 364, 176	59, 863, 368	7, 157, 024	47, 665, 933	(5)	551, 043, 908
Total nondetailed	11, 041, 340	8, 287, 208	322, 556	2, 704, 508	322, 556	2, 133, 832	(5)	24, 812, 000
Grand total	255, 949, 803	192, 372, 152	[7] 7, 686, 732	62, 567, 876	[1] 7, 479, 580	49, 799, 765	[5] 70, 428, 354	[6] 575, 855, 908

Bureau of Public Roads.
Above data are partly estimates and approximations, but are only available figures obtainable by this bureau.

[1] Bond interest often included with payments on principal.
[2] Estimate based on 1923 data.
[3] Estimated from 1924 road program.
[4] Estimated from mileage built.
[5] In only a few States are balances dependable. The figures in parentheses are apparent deficits and the total is a net unexpended balance.
[6] Made up from detailed data and nondetailed estimates.
[7] Only 20 States show county overhead expenses.

TABLE 755.—*Sources and amounts of State and State-controlled funds for highways, 1924*

State	Fiscal year ends	Balance at beginning of year	Percentage of total funds	Total income during year	Percentage of total funds	State highway bonds, notes, etc., sold	Percentage of total funds	State tax levied for highways, etc.	Percentage of total funds	Appropriation by State for highways	Percentage of total funds
		Dollars		*Dollars*		*Dollars*		*Dollars*		*Dollars*	
Alabama	Sept. 30	1,968,388	20.1	7,816,580	79.9	3,450,000	35.3				
Arizona	Dec. 31	936,599	26.3	2,624,553	73.7			646,865	18.2	10,000	0.3
Arkansas	do	839,825	6.9	11,241,988	93.1						
California	do	4,416,334	16.3	22,792,316	83.7	5,681,500	20.8	3,800,434	13.9	225,000	.8
Colorado	Nov. 30	1,976,624	26.2	5,559,750	73.8	1,500,000	19.9	860,973	11.4	72,300	.9
Connecticut	June 30	5,157,750	35.9	9,181,108	64.1					2,100,750	14.7
Delaware	Dec. 31	480,901	10.9	3,921,630	89.1	1,038,778	23.6				
Florida	do	624,088	8.3	6,872,393	91.7			424,393	5.7	75,905	1.0
Georgia	do	1,119,644	13.8	6,984,986	86.2						
Idaho	do	489,885	16.9	2,409,004	83.1			303,447	10.4		
Illinois	do	3,165,083	7.5	38,827,259	92.5	23,404,316	55.7				
Indiana	do	1,254,456	7.4	15,606,805	92.6			759,730	4.5		
Iowa	Nov. 30	3,576,011	6.6	18,030,403	83.4						
Kansas	Dec. 31			6,638,899	1.1					44,250	.6
Kentucky	do	229,529	2.2	10,116,403	97.8			913,289	8.9		
Louisiana	do	145,185	1.5	9,316,365	98.5						
Maine	do	1,243,994	15.2	6,924,389	84.8	996,750	12.2	672,768	8.2	300,000	3.7
Maryland	Sept. 30	3,433,711	25.2	10,188,649	74.8	2,203,739	16.2			3,399,646	25.0
Massachusetts	Dec. 31	2,831,876	17.6	13,239,751	82.4					791,109	4.9
Michigan	June 30	3,929,338	14.9	22,365,174	85.1	10,108,603	38.4			797,000	3.0
Minnesota	Dec. 31	619,919	3.6	16,490,091	96.4	(1)					
Mississippi	do	1,237,245	17.7	5,764,203	82.3						
Missouri	do	12,133,967	38.5	19,451,512	61.5	9,876,419	31.2				
Montana	do	235,410	11.6	1,795,234	88.4						
Nebraska	do	1,648,328	7.5	7,770,323	82.5			1,847,383	19.6		
Nevada	Nov. 30	83,088	2.5	3,260,393	97.5			119,467	3.5		
New Hampshire	Dec. 31	660,399	14.3	3,936,027	85.7					35,000	.8
New Jersey	do	9,070,003	32.1	19,258,378	67.9	5,000,000	17.7	4,375,126	15.4		
New Mexico	do	807,454	17.4	3,844,442	82.6	1,000,000	21.5	608,882	13.0		
New York	do	30,805,526	44.3	38,763,929	55.7	4,655,754	6.7			7,371,936	10.7
North Carolina	June 30	1,150,484	3.2	34,938,038	96.8	22,852,990	63.3				
North Dakota	do	223,966	10.3	1,955,269	89.7					142,118	6.5
Ohio	Dec. 31	14,287,480	41.8	19,884,670	58.2					338,214	.9
Oklahoma	do	3,136,146	28.9	7,702,424	71.1						
Oregon [1]	Nov. 30	3,295,525	26.8	8,989,349	3.2			255,863	2.0		

Pennsylvania	Dec. 31	23, 282, 554	42.6	31, 378, 205	57.4	1, 484, 478	2.7				
Rhode Island	Nov. 30	498, 264	13.6	3, 167, 481	86.4	400, 000	10.9	485, 409	13.3	478, 210	13.0
South Carolina	Dec. 31	52, 981	0.9	5, 854, 283	99.1					209, 254	3.5
South Dakota	June 30	1, 453, 874	23.2	4, 815, 040	76.8			5, 965			
Tennessee	Nov. 30	1, 411, 805	14.9	8, 026, 134	85.1			61, 907	0.6		
Texas	Dec. 31	844, 049	3.2	25, 275, 704	96.8						
Utah	do			3, 673, 579	10.0					241, 000	6.7
Vermont	do	930, 000	27.8	2, 412, 000	72.2			142, 000	4.3	87, 034	2.6
Virginia	Sept. 30	1, 129, 836	7.6	13, 658, 714	92.4			1, 725, 587	11.7	3, 357, 008	11.7
Washington	Dec. 31			7, 671, 089	10.0			113, 316	1.4		
West Virginia	do	6, 134, 231	31.7	13, 219, 612	68.3	8, 000, 000	41.3				
Wisconsin	do	3, 643, 102	33.8	7, 108, 887	66.2					8, 500	
Wyoming	do	231, 850	4.8	4, 673, 630	95.2			160, 074	3.2		
Total		[18] 156, 826, 702	22.1	555, 397, 045	77.9	101, 653, 327	14.3	18, 282, 878	2.6	20, 084, 324	2.8

[8] Receipts from county bond sales for trunk highway fund included among funds transferred from counties.
[18] In a few States the balance is approximate.

TABLE 755.—*Sources and amounts of State and State-controlled funds for highways, 1924*—Continued

State	Miscellaneous State income for highways	Percentage of total funds	Motor vehicle fees, etc., for use on roads	Percentage of total funds	Gasoline tax applicable to highways	Percentage of total funds	Transferred funds from counties, etc.	Percentage of total funds	Federal-aid post road funds used	Percentage of total funds	Total funds available (100 per cent)
	Dollars		*Dollars*		*Dollars*		*Dollars*		*Dollars*		*Dollars*
Alabama	135,720	1.4	1,578,445	16.1	(1)		111,508	1.2	2,540,907	25.9	9,784,968
Arizona	55,690	1.6	341,481	9.6	360,690	10.1	241,702	6.8	968,125	27.1	3,561,152
Arkansas	83,218	.7	2,333,240	19.3	2,600,957	21.6	4,680,000	38.7	1,544,573	12.8	12,081,813
California	403,595	1.5	2,762,029	10.2	6,063,073	22.3	300,000	1.1	3,556,685	13.1	27,208,650
Colorado	69,389	.9	[2] 574,568	7.8	844,248	11.2	76,046	1.0	1,562,226	20.7	7,536,374
Connecticut	328,843	2.3	5,058,909	35.2	962,479	6.8	315,267	2.2	414,860	2.9	14,338,858
Delaware	99,065	2.3	604,709	13.7	302,143	6.8	1,516,866	34.5	360,069	8.2	4,402,531
Florida	87,708	1.1	1,758,399	23.5	[3] 2,575,181	34.3	879,220	11.8	1,071,287	14.3	7,496,481
Georgia	28,681	.3	2,446,196	30.1	1,120,133	13.9	1,301,579	16.1	2,088,397	25.8	8,104,630
Idaho	29,209	1.0	326,028	11.3	545,672	18.8	430,777	14.9	773,871	26.7	2,898,889
Illinois	300,045	.7	11,557,839	27.6	(4)				3,565,059	8.5	41,992,342
Indiana	[5] 1,603,725	9.5	3,881,826	23.2	[6] 5,537,611	32.8	118,973	.7	3,704,940	21.9	16,861,261
Iowa			8,542,511	39.5	(1)		7,674,135	35.5	1,813,757	8.4	21,606,414
Kansas			[7]		(4)		3,384,825	51.0	3,209,824	48.4	6,638,899
Kentucky	106,619	1.0	3,103,388	29.9	1,738,500	16.8	2,045,696	19.8	2,208,911	21.4	10,345,932
Louisiana	63,348	.6	2,790,348	29.5	1,455,542	15.4	3,483,408	36.9	1,523,719	16.1	9,461,550
Maine	469,149	5.7	2,146,592	26.3	542,414	6.7	1,057,784	12.9	744,932	9.1	8,168,383
Maryland	164,158	1.2	1,449,427	10.6	750,325	5.6	1,585,409	11.7	635,945	4.7	13,622,360
Massachusetts			9,113,253	56.8	(4)		2,291,160	14.2	1,044,229	6.5	16,071,627
Michigan	206,727	.8	5,783,312	22.0	(4)		3,152,358	12.0	2,317,174	8.9	26,294,512
Minnesota	69,614	.4	8,550,630	50.0	(4)		[8] 4,038,606	23.6	3,822,241	22.4	17,110,010
Mississippi	122,375	1.8	617,036	8.9	623,092	8.9	2,146,713	30.4	2,254,487	32.3	7,001,448
Missouri	497,592	1.5	4,525,914	14.4	(4)		456,031	1.5	4,095,555	12.9	31,585,479
Montana	[9] 979,082	3.9	[10]		97,522	4.7	461,465	22.9	1,156,625	56.9	2,030,644
Nebraska			3,594,438	38.2	(4)		566,004	5.9	1,762,498	18.8	9,418,646
Nevada	288,954	8.6	96,877	2.9	60,000	1.8	548,505	16.5	2,146,590	64.2	3,343,481
New Hampshire	72,973	1.5	1,411,794	30.7	658,245	14.4	1,306,864	28.5	451,151	9.8	4,596,426
New Jersey	6,355	.0	8,373,182	20.5	(1)		397,521	1.4	1,106,194	3.9	28,328,381
New Mexico	57,131	1.2	248,855	5.4	182,857	3.9			1,746,717	37.6	4,651,896
New York	1,354,623	1.9	18,066,930	25.9	(4)		4,063,170	5.8	3,251,516	4.7	69,569,455
North Carolina	994,835	2.7	3,975,658	11.0	2,931,927	8.2	2,715,113	7.6	1,467,515	4.0	36,088,532
North Dakota	98,567	4.5	309,272	14.2	[11]		122,270	5.6	1,283,042	58.9	2,179,235
Ohio			4,771,290	14.0			12,184,781	35.7	2,590,385	7.6	34,172,150
Oklahoma	350,995	3.2	[12]		1,616,200	14.9	3,187,944	29.5	2,547,285	23.5	10,838,570
Oregon [13]	250,446	2.0	3,419,809	27.8	2,358,277	19.2	1,586,176	13.0	1,118,778	9.2	12,284,874

Pennsylvania	792,736	1.4	21,724,533	39.8	(14)		3,737,885	6.8	3,638,573	6.7	54,660,759
Rhode Island	35,185	.9	1,536,156	41.9	(4)				232,721	6.4	2,665,745
South Carolina	122,441	2.0	921,586	15.7	728,890	12.4	2,698,495	45.6	1,173,617	19.9	5,907,264
South Dakota	[15] 376,264	6.1	1,567,850	25.2	929,314	14.8			1,935,647	30.8	6,268,214
Tennessee	25,713	.2	1,251,263	13.3	[16] 2,152,522	22.9	1,418,438	15.0	3,116,291	33.1	9,437,939
Texas	218,235	.8	7,225,991	27.7	2,919,577	11.1	9,730,000	37.3	5,181,901	19.9	26,119,753
Utah	179,830	4.8	427,509	11.6	682,985	18.5	760,529	20.8	1,381,726	37.6	3,673,579
Vermont	175,000	5.2	1,252,101	37.5	230,865	6.9			525,000	15.7	3,342,060
Virginia	333,661	2.3	3,755,238	25.4	2,156,384	14.6	42,440	.3	2,288,306	15.4	14,788,550
Washington			3,709,960	48.5	2,635,410	34.4			1,212,403	15.7	7,671,089
West Virginia	199,475	1.0	3,035,438	15.7	1,244,074	6.5	21,447	.1	719,178	3.7	19,353,843
Wisconsin	391,094	3.7	3,843,109	35.8	(4)		1,071,181	10.0	1,794,313	16.7	10,751,989
Wyoming	[17] 2,019,844	41.1	448,664	9.2	203,506	4.2	90,255	1.8	1,751,287	35.7	4,905,480
Total	13,349,610	1.9	174,816,973	24.5	47,810,615	6.7	87,998,486	12.3	91,400,832	12.8	712,223,747

Bureau of Public Roads. Above funds, generally, cover money applied to financing State roads; in some States county road work is supervised by State highway department.

[1] Gasoline tax, all to county for road maintenance, $1,635,924.
[2] Used to retire State highway bond issues.
[3] Gasoline tax includes $126,326 from inspection fees of one-eighth cent per gallon.
[4] No gasoline tax in 1924.
[5] Includes $1,119,542 from inheritance taxes.
[6] Includes over $2,000,000 of 1923 collections.
[7] For county roads.
[8] Receipts from county bond sales for trunk highway fund included among funds transferred from counties.
[9] Includes $42,120 from Federal Government for oil royalties.
[10] Motor vehicle funds to counties.
[11] All tax collected to State general fund.
[12] Expended by counties under regulation of State highway commission.
[13] Excludes market road and forest-aid road income.
[14] Gasoline tax receipts distribution, 25 per cent to county roads and 75 per cent to State general fund.
[15] Includes transfer of $150,000 from bond interest and sinking fund.
[16] Receipts for 15 months, July 1, 1923, to Sept. 30, 1924.
[17] Includes $1,526,699 from oil royalties (Federal mineral leasing act).

TABLE 756.—*Sources and amounts of county, township, and district funds for highways, 1924*

State	Balance from previous year	Receipts from bonds and notes	Taxes and appropriations	Motor vehicle license fees (share)	Gasoline tax (share)	Miscellaneous income	Total funds available
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Alabama		300, 563	3, 451, 250	3, 151	1, 635, 924	2, 593, 644	7, 984, 532
Arizona	413, 662		1, 205, 728		261, 385	69, 019	1, 949, 794
Arkansas		2, 676, 500	8, 552, 000	1, 000, 000	999, 900		13, 228, 400
California		2, 462, 152	17, 286, 214	3, 010, 000	5, 000, 000	215, 210	27, 973, 576
Colorado		50, 986	3, 670, 672	340, 541	641, 533	809, 375	5, 513, 107
Connecticut			2, 589, 068				2, 589, 068
Delaware	65, 052	37, 419	1, 260, 460				1, 362, 931
Florida		16, 158, 212	6, 418, 097	445, 264	1, 114, 028	1, 140, 253	25, 275, 764
Georgia		3, 662, 341	9, 593, 744		1, 188, 447	2, 184, 093	16, 628, 625
Idaho							[1] 3, 000, 000
Illinois	545, 500	25, 000	8, 929, 200			1, 212, 900	10, 712, 600
Indiana	13, 897, 200	15, 322, 000	28, 645, 700		500, 000		58, 364, 900
Iowa	3, 920, 799	483, 938	14, 723, 867	525, 756		2, 562, 171	22, 225, 531
Kansas	4, 383, 347	2, 178, 768	10, 670, 201	4, 036, 937			21, 269, 253
Kentucky	1, 467, 170	1, 187, 500	6, 545, 090			404, 315	9, 604, 075
Louisiana		7, 292, 584	5, 087, 529			200, 000	12, 580, 113
Maine							[2] 3, 500, 000
Maryland		500, 000	3, 128, 000				3, 628, 000
Massachusetts							[3] 1, 500, 000
Michigan		4, 470, 000	19, 042, 540	5, 422, 780		670, 170	29, 605, 490
Minnesota		10, 750, 888	15, 850, 698			302, 941	26, 904, 527
Mississippi		660, 535	7, 321, 064	697, 344	398, 460	2, 526, 801	11, 604, 204
Missouri	1, 314, 386	562, 500	14, 944, 591			1, 724, 607	18, 546, 084
Montana			1, 855, 087	810, 156	229, 825	82, 338	2, 977, 406
Nebraska	3, 344, 708	161, 879	11, 456, 298				14, 962, 885
Nevada		32, 000	441, 390		48, 027	10, 000	531, 417
New Hampshire		1, 463, 344					1, 463, 344
New Jersey		5, 079, 959	56, 541				5, 136, 500
New Mexico	117, 561	100, 000	419, 310	8, 965		21, 689	667, 525
New York	2, 463, 419	16, 300, 000	7, 736, 581				26, 500, 000
North Carolina		5, 350, 000	10, 700, 000				16, 050, 000
North Dakota			3, 474, 526	280, 000		600, 000	4, 354, 526
Ohio		10, 000, 000	38, 955, 000				48, 955, 000
Oklahoma		4, 000, 000	8, 573, 400	3, 728, 679	1, 448, 501		17, 750, 580
Oregon							[2] 11, 000, 000
Pennsylvania							[1] 35, 000, 000
Rhode Island							[2] 312, 000
South Carolina		7, 897, 748	2, 313, 452		715, 864	1, 769, 877	12, 696, 941
South Dakota		150, 000	6, 152, 168	676, 493			6, 978, 661
Tennessee		989, 857	5, 324, 015			1, 227, 687	7, 541, 559
Texas		10, 000, 000	15, 500, 000	3, 148, 006			28, 648, 006
Utah							[2] 1, 500, 000
Vermont			1, 074, 000				1, 074, 000
Virginia		2, 822, 136	3, 241, 940		1, 104, 396	878, 602	8, 047, 074
Washington							[2] 9, 000, 000
West Virginia	7, 568, 300	1, 865, 500	7, 611, 700			208, 700	17, 254, 200
Wisconsin		6, 679, 022	24, 730, 007				31, 409, 029
Wyoming		49, 485	471, 427			402, 123	923, 035
Total detailed	39, 510, 104	141, 722, 816	339, 002, 465	24, 134, 072	15, 286, 290	21, 816, 515	581, 472, 262
Total nondetailed	4, 407, 216	15, 814, 128	37, 785, 396	2, 722, 104	1, 685, 112	2, 398, 044	64, 812, 000
Grand total	[5] 43, 917, 320	157, 536, 944	376, 787, 861	26, 856, 176	16, 971, 402	24, 214, 559	[4] 646, 284, 262

Bureau of Public Roads.

Above data are partly estimates and approximations, but are the only available figures obtainable by this bureau.

[1] Estimates based on 1923 data.
[2] Estimated from 1924 road program.
[3] Estimated from mileage built.
[4] Made up from detailed data and nondetailed estimates.
[5] This balance is probably understated, as most counties do not record balances or deficits: The balances being added to general fund and the deficits being covered from same fund.

TABLE 757.—*Gasoline taxes, 1924*

State	Date of rate change, 1924	Tax rate, per gallon		Gross tax receipts, 1924	Distribution of gross receipts		
					Applied to road work		For miscellaneous purposes [1]
		Jan. 1, 1924	Dec. 31, 1924		Supervision State highway department	To county and local road funds	
		Cts.	*Cts.*	*Dollars*	*Dollars*	*Per cent*	
Alabama		2	2	1,738,661		100	
Arizona		3	3	730,838	365,419	50	
Arkansas		4	4	2,768,535	2,268,535	[3]	
California [2]		2	2	11,993,222	5,996,611	50	
Colorado		2	2	1,725,957	819,830	47½	5 per cent collection cost.
Connecticut [2]		1	1	978,283	978,283		
Delaware		2	2	304,392	304,392		
Dist. Columbia.	May 23		2	380,792	380,792		
Florida		3	3	3,658,677	2,575,199	33⅓	[3]
Georgia		3	3	4,527,471	1,509,157	33⅓	33⅓ per cent State general fund.
Idaho		2	2	545,672	545,672		
Illinois				(No tax)			
Indiana		2	2	4,925,372	4,187,855	12.7	[3]
Iowa				(No tax)			
Kansas			[4]	(No tax)			
Kentucky	June 19	1	3	1,660,938	1,660,938		
Louisiana	Aug. 1	1	2	1,335,320	1,335,320		
Maine		1	1	522,250	522,250		
Maryland		2	2	1,588,422	1,111,895		Balance "Road deficiency fund."
Massachusetts				(No tax)			
Michigan			[4]	(No tax)			
Minnesota				(No tax)			
Mississippi [2]	May 9	1	3	1,648,748	787,319	[5] 50	
Missouri				(No tax)			
Montana		2	2	619,295	123,859	40	40 per cent State general fund.
Nebraska				(No tax)			
Nevada		2	2	162,596	60,000	[3]	
New Hampshire		2	2	587,845	587,845		
New Jersey				(No tax)			
New Mexico		1	1	194,983	185,234		Balance State fish hatcheries.
New York				(No tax)			
North Carolina		3	[4] 3	4,529,048	[6] 4,520,000		Balance collection cost.
North Dakota		1	1	442,969			100 per cent State general fund.
Ohio				(No tax)			
Oklahoma	Mar. 14	1	2.5	2,983,501	1,544,600	[5] 60	
Oregon		3	3	2,698,778	2,582,890		Balance refunds and expenses.
Pennsylvania		2	2	9,089,541		25	75 per cent State general fund.
Rhode Island				(No tax)			
South Carolina [2]		3	3	2,186,137	728,889	33⅓	33⅓ State general fund.
South Dakota		2	2	1,205,155	1,106,635		[3]
Tennessee		2	[4] 2	1,812,235	1,812,235		
Texas		1	1	3,892,769	2,919,577		25 per cent free schools fund.
Utah [2]		2.5	2.5	684,361	682,985		
Vermont [2]		1	1	230,865	230,865		
Virginia		3	3	3,313,188	[6] 2,208,571	33⅓	
Washington		2	2	2,635,411	2,635,411		
West Virginia		2	2	1,231,944	1,231,944		
Wisconsin				(No tax)			
Wyoming		1	[4] 1	200,319	200,319		
Total				79,734,490	48,711,326		

Bureau of Public Roads.

[1] In some cases the distribution in amounts and percentages do not balance. Cost of collection and refunds for gasoline used for other purposes than for motor vehicles may account for the differences in some States.

[2] Data given cover calendar years, except for the following States, where fiscal years end as shown: California, Jan. 31; Connecticut, June 30; Mississippi, South Carolina, Utah, and Vermont, November 30.

[3] Balance.

[4] To date in 1925, these States enacted new gasoline tax rates effective as follows: Kansas, 2 cents (May 1); Michigan, 2 cents (Feb. 15); North Carolina, 4 cents (Mar. 5); Tennessee, 3 cents (Feb. 9); Wyoming, 2½ cents (March).

[5] This percentage became effective when the tax rate changed as shown here.

[6] Approximate.

TABLE 758.—*Motor vehicles: Registration, licenses, and revenues, 1924*

State	Individually and commercially owned				Official cars and trucks owned by State, etc.[1]	Motorcycles	Registration fees, licenses, permits, etc.		Amount of registration fees paid for		Grand total motor cars 1923	Increase during 1924
	Passenger cars[1]	Motor trucks[1]	Taxis, busses, and cars for hire	Grand total motor cars 1924[1]			Total gross receipts	Amount applicable to highway work by or under supervision of State highway department	Passenger cars	Motor trucks		
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Number*	*Per cent*
Alabama	135,777	18,688	2,797	157,262	(2)	549	1,954,801	1,581,647			126,642	24.2
Arizona	50,233	7,595	(3)	57,828	903	372	339,722	339,722			49,175	17.6
Arkansas	125,368	16,615	(3)	141,983	458	295	2,333,240	1,833,240	1,980,814	262,317	113,300	25.3
California	1,125,381	[4] 194,013	(4)	1,319,394	(3)	12,325	7,011,113	3,079,659	3,594,636	2,440,377	1,100,283	19.9
Colorado	197,361	15,886	(5)	213,247	(2)	2,226	1,258,205	574,568	992,333	180,222	188,956	12.9
Connecticut	180,542	33,776	2,909	217,227	1,110	4,211	5,069,581	5,069,581	2,766,530	1,047,278	181,748	19.5
Delaware	29,075	6,061	(3)	35,136	(3)	325	604,354	604,354	334,250	122,874	29,977	17.2
District of Columbia	78,846	9,916	(5)	88,762	1,351	1,889	378,868				[6] 74,811	18.6
Florida	157,519	34,192	3,417	195,128	(2)	733	2,118,933	1,576,118			151,990	28.4
Georgia	181,268	26,275	145	207,688	(3)	750	2,532,266	2,448,215	2,067,280	408,823	173,889	19.4
Idaho	61,600	7,627	(3)	69,227	930	619	1,306,892	326,723	1,083,700	195,727	62,379	11.0
Illinois	978,428	140,808	(3)	1,119,236	(3)	6,873	11,546,206	11,546,206			969,331	15.5
Indiana	566,736	84,969	(3)	651,705	(2)	4,822	4,102,666	3,906,858	3,080,023	826,008	583,312	11.7
Iowa	575,210	40,918	(5)	616,128	2,400	2,597	8,979,170	[7] 8,171,045			571,061	7.9
Kansas	370,951	39,940	(3)	410,891	1,947	1,632	[7] 4,222,930	[7] 4,036,937			375,394	9.4
Kentucky	206,064	23,275	[8] 485	229,804	1,044	724	3,233,379	3,108,732			198,377	15.8
Louisiana	[7] 150,900	[7] 27,100	(5)	[7] 178,000	1,000	510	2,790,348	2,790,348	[7] 1,922,716	[7] 813,000	136,622	30.3
Maine	105,040	19,001	3,137	127,178	854	1,288	1,933,561	1,839,269			108,609	17.1
Maryland	184,398	11,183	2,817	198,398	(3)	3,402	2,332,953	1,633,067	1,399,020	247,295	169,351	17.2
Massachusetts	[1] 486,952	[1] 83,626	(5)	[1] 570,578	[9] 900	10,778	8,122,166	[7] 7,400,000	5,119,148	1,233,626	[1] 479,909	18.9
Michigan	784,070	83,475	(3)	867,545	(3)	3,644	12,404,546	5,638,050	9,730,255	1,408,579	730,658	18.7
Minnesota	465,165	37,822	449	503,437	2,171	3,060	8,591,853	8,591,853	7,387,698	886,936	448,187	12.3
Mississippi	122,117	12,563	(5)	134,680	(3)	96	1,525,077	589,844			104,285	29.1
Missouri	489,356	51,144	(5)	540,500	1,203	2,139	4,525,914	4,238,914			476,598	13.4
Montana	69,824	9,871	(3)	79,695	979	203	776,320		638,534	107,310	73,828	7.9

Nebraska	277,449	31,266	[2]	308,715	[3]	1,342	3,597,261	[7] 2,697,946	2,922,756	504,702	286,973	7.9
Nevada	16,236	1,882	[3]	18,118	336	111	181,970	172,960	142,528	34,168	15,639	15.4
New Hampshire	63,662	7,270	[3]	70,932	(-)	1,750	1,522,186	1,411,794			59,604	19.0
New Jersey	303,785	99,288	11,144	504,217	[7] 4,200	8,063	9,278,428	8,213,182	3,673,989	2,701,805	430,158	17.0
New Mexico	39,890	1,790	[3]	41,680	[3]	228	421,412	400,342			32,032	30.1
New York	1,136,678	236,012	40,189	1,412,879	8,910	19,837	24,089,241	18,066,930	14,001,939	6,235,099	1,204,213	17.3
North Carolina	272,552	27,480	2,200	302,232	[3]	1,029	4,614,521	4,153,069			[10] 246,812	22.5
North Dakota	112,604	4,682	[3]	117,346	[9] 317	509	816,760	[11] 773,091			109,266	7.4
Ohio	1,076,800	164,800	[3]	1,241,600	5,400	15,000	11,685,329	5,842,664			1,069,100	16.1
Oklahoma	342,856	27,047	[3]	369,903	[3]	733	3,728,679	[12] 3,323,609			307,690	20.5
Oregon	177,558	15,057	[3]	192,615	[3]	2,764	4,766,070	3,424,552	3,925,444	688,712	165,962	16.1
Pennsylvania	1,048,692	178,122	6,773	1,228,587	[3]	17,540	22,107,376	22,107,376	10,236,151	4,870,202	1,043,770	17.7
Rhode Island	76,666	17,247	1,569	95,482	[3]	1,428	1,023,604	[7] 1,525,604	935,536	370,856	76,312	25.1
South Carolina	146,639	15,114	[3]	161,753	1,067	477	1,151,983	921,586	933,463	192,154	127,467	26.9
South Dakota	131,190	11,206	[3]	142,396	[3]	305	2,068,437	1,445,920			131,700	8.1
Tennessee	183,891	20,789	[3]	204,680	[5]	682	2,597,870	2,597,870	2,021,931	534,079	173,365	18.1
Texas	735,270	62,754	3,088	801,712	[2]	2,634	10,373,997	7,225,991			688,233	16.5
Utah	59,453	8,863	[3]	68,316	500	731	485,969	427,509	379,972	87,992	59,525	14.8
Vermont	[13] 57,072	[13] 4,107	[3]	[13] 61,179	123	779	1,323,377	1,252,101	1,008,165	101,452	52,776	15.9
Virginia	220,000	41,643	302	261,945	[3]	3,000	3,791,556	3,791,556			218,896	19.7
Washington	251,466	41,555	2,422	295,443	3,701	3,164	4,861,420	4,416,053	3,260,688	950,127	258,264	14.4
West Virginia	163,907	22,171	4,656	190,734	[5]	1,407	2,874,587	2,332,712	1,949,982	449,016	157,924	20.8
Wisconsin	475,182	50,039	[3]	525,221	3,005	3,938	6,786,485	[7] 6,500,000	5,483,275	1,160,907	457,271	14.8
Wyoming	38,831	4,808	[3]	43,639	177	252	448,664	448,664	346,365	90,622	39,831	9.6
Total	15,371,570	2,131,332	89,076	17,591,981	44,986	153,925	225,492,252	184,393,071	93,269,171	29,211,455	15,090,936	16.6

Bureau of Public Roads.

[1] Net number of cars and trucks shown when possible, excluding reregistrations and nonresident registrations. Federal, State, or other Government-owned cars and trucks, not registered and not paying licenses, are also excluded in grand totals, unless noted.
[2] Recorded in private cars and trucks.
[3] Not separately recorded.
[4] "Motor trucks" includes solid and pneumatic types, also taxis, busses, etc.
[5] Included with private passenger cars.
[6] Reregistrations included, but nonresident excluded.
[7] Approximate.
[8] City cabs excluded.
[9] State-owned cars only.
[10] First six months of registration year only.
[11] Excludes cost of motor registration department.
[12] To be expended by counties under general regulation made by State highway department.
[13] Includes nonresident registrations.

HUNTERS' LICENSES

TABLE 759.—*Hunters' licenses issued by States, with total money returns, for the seasons 1923–24 and 1924–25*

State	Licenses issued						Money returns [1]	
	Resident		Nonresident and alien		Total			
	1923–24	1924–25	1923–24	1924–25	1923–24	1924–25	1923–24	1924–25
							Dollars	*Dollars*
Alaska [2]			32	86	32	86	1,600.00	6,964.00
Alabama	34,544	45,256	199	138	34,743	45,394	59,819.00	67,053.61
Arizona	22,564	[3] 26,485	106	170	22,670	26,655	30,430.00	36,479.00
Arkansas	3,638	3,926	534	303	4,172	4,229	11,936.80	8,561.90
California	244,986	224,601	1,313	1,820	246,299	226,421	246,299.00	245,591.00
Colorado	78,145	96,844	128	382	78,273	97,226	158,659.75	200,042.75
Connecticut	34,599	32,399	481	380	35,080	32,779	39,489.00	36,199.00
Delaware	1,357	1,502	286	250	1,643	1,752	4,495.70	4,002.00
Florida [4] [5]								
Georgia	17,416	29,030	195	151	17,611	29,181	26,816.50	40,598.75
Idaho	64,958	[3] 60,780	1,061	543	66,019	61,323	127,698.60	119,682.00
Illinois	237,540	265,064	1,057	1,478	238,597	266,542	207,683.80	213,578.00
Indiana	181,726	163,607	267	258	181,993	163,865	185,864.50	167,910.90
Iowa	124,320	[3] 144,729	279	273	124,599	145,002	127,110.00	147,459.00
Kansas	95,259	109,720		110	95,259	109,830	95,259.00	100,226.00
Kentucky	72,286	80,774	330	391	72,616	81,165	63,868.60	71,160.03
Louisiana	69,991	110,778	473	337	70,464	111,115	81,816.00	124,565.25
Maine	37,156	[3] 33,863	3,222	3,696	40,378	37,559	55,843.40	48,368.95
Maryland	60,937	60,516	1,781	1,791	62,718	62,307	115,113.50	109,524.37
Massachusetts	86,414	75,484	1,027	1,019	87,441	76,503	141,322.40	122,936.25
Michigan	260,723	282,328	2,100	2,015	262,823	284,343	261,858.26	282,016.26
Minnesota	119,680	162,824	567	698	120,247	163,522	91,452.60	217,787.75
Mississippi [4]								
Missouri	130,806	[3] 174,699		1,208	130,806	175,907	165,262.50	191,922.87
Montana	64,202	64,584	144	164	64,346	64,748	133,564.00	132,528.00
Nebraska	117,487	[3] 140,922	203	[3] 483	117,690	141,405	125,715.10	156,068.00
Nevada [4]		3,350		15		3,365		5,175.00
New Hampshire	55,000	[3] 58,100	3,000	[3] 2,550	58,000	60,650	100,000.00	90,122.50
New Jersey	143,870	[3] 138,948	1,564	[3] 1,491	145,434	140,439	254,211.25	223,928.00
New Mexico	8,314	15,260	299	535	8,613	15,795	19,155.50	30,855.75
New York	310,239	317,384	2,761	3,152	313,000	320,536	339,220.50	325,364.41
North Carolina [4]								
North Dakota	38,916	34,784	104	277	39,020	35,061	56,673.00	55,539.40
Ohio	269,388	362,730	59	66	269,447	362,796	343,621.00	454,402.50
Oklahoma	85,100	[3] 101,135	261	322	85,361	101,457	89,025.00	105,723.75
Oregon	48,609	53,484	552	638	49,161	54,122	181,893.50	199,490.00
Pennsylvania	497,216	501,572	2,328	2,558	499,544	504,130	605,627.90	613,939.30
Rhode Island	10,513	11,179	166	248	10,679	11,427	15,068.50	14,029.00
South Carolina	86,756	80,442	896	899	87,652	81,341	126,590.00	120,393.00
South Dakota	48,103	63,295	1,649	2,205	49,752	65,500	89,830.00	126,718.00
Tennessee [4]		50,806		425		51,231		75,201.94
Texas	50,488	71,842	291	449	50,779	72,291	96,894.80	138,295.70
Utah	48,322	[3] 53,840	325	[3] 1,066	48,647	54,906	89,334.72	96,839.00
Vermont	36,647	[3] 38,050	1,055	[3] 939	37,702	38,989	41,811.20	42,144.00
Virginia	91,198	85,888	2,150	1,880	93,348	87,768	152,650.00	139,151.80
Washington	173,844	[3] 182,969	3,341	[3] 504	177,185	183,473	177,185.00	178,853.50
West Virginia [4]		[6] 44,850		106		44,956		46,440.00
Wisconsin	174,779	180,000	542	592	175,321	180,592	192,779.00	206,602.00
Wyoming	19,374	[3] 22,266	500	3,790	19,874	26,056	64,433.50	50,431.75
Total	4,357,410	4,862,889	37,628	42,851	4,395,038	4,904,740	5,594,982.38	6,190,863.94

Bureau of Biological Survey.

[1] Include amounts received from combined hunting and fishing licenses, but not from licenses to fish only.
[2] No resident license required.
[3] Combined hunting and fishing license.
[4] Figures not available.
[5] Department of game and fresh-water fish created in 1925.
[6] For six-months period only.

TABLE 760.—*Pure-food law: Statistics of enforcement, 1917–1925*

Year ended June 30—	Number of official samples collected from interstate shipments	Number of official samples on which manufacturers and packers were cited to appear, and hearings held	Number of official samples on which the records were sent to the Department of Justice for prosecution	Number of consignments of foods and drugs seized under the food and drugs act
1917	7,820	2,873	732	371
1918	5,621	2,333	615	417
1919	5,117	2,185	854	1,052
1920	5,512	1,791	851	1,467
1921	5,393	1,607	746	1,677
1922	3,550	1,634	538	1,133
1923	5,408	1,681	546	829
1924	7,038	2,076	592	808
1925	7,590	2,298	870	910

Bureau of Chemistry.

TABLE 761.—*Insecticide and fungicide law: Statistics of enforcement, 1912–1925*

Year ended June 30—	Number of official samples collected from interstate shipments	Number of official samples on which manufacturers and shippers were cited to appear, and hearings held	Number of cases reported to the Department of Justice for criminal or seizure action	Number of cases disposed of by correspondence without resort to prosecution [1]
1912	650	105	64	None.
1913	997	327	108	109
1914	995	270	112	152
1915	1,117	326	118	208
1916	1,487	272	116	242
1917	984	297	126	240
1918	748	220	132	195
1919	904	210	104	129
1920	717	201	124	120
1921	820	172	143	121
1922	957	210	89	153
1923	1,236	237	71	221
1924	824	325	87	324
1925	864	250	96	239

Insecticide and Fungicide Board.

[1] These cases presented violations which were technical only, not flagrant, or cases in which the manufacturers gave reasonable and adequate explanation for failure to comply with the provisions of the act.

TABLE 762.—*Soil surveys: Status of, by States, year ended June 30, 1925*

DETAILED SURVEY

State	Area of State	Surveys previously made	Surveys made during 1925	Total areas surveyed
	Sq. miles	*Sq. miles*	*Sq. miles*	*Sq. miles*
Alabama	51,279	50,030	554	50,584
Arizona	113,810	1,738	245	1,983
Arkansas	52,525	15,145	238	15,383
California	155,652	25,083	946	26,029
Colorado	103,658	3,166	188	3,354
Connecticut	4,820	1,704		1,704
Delaware	1,965	2,276		2,276
Florida	54,861	12,384	869	13,253
Georgia	58,725	29,767	972	30,739
Idaho	83,354	9,373	143	9,516
Illinois	56,043	6,770		6,770
Indiana	36,045	14,577	734	15,311
Iowa	55,586	33,668	2,680	36,348
Kansas	81,774	9,456	103	9,559
Kentucky	40,181	5,020		5,020
Louisiana	45,409	15,597		15,597
Maine	29,895	2,197		2,197
Maryland	9,941	10,569	562	11,131
Massachusetts	8,039	5,402	832	6,234
Michigan	57,480	11,730	3,088	14,818
Minnesota	80,858	7,169	627	7,796
Mississippi	46,362	27,377	756	28,133
Missouri	68,727	36,451	726	37,177
Montana	146,131	882		882
Nebraska	76,808	38,258	3,109	41,367
Nevada	109,821	652		652
New Hampshire	9,431	1,411		1,411
New Jersey	7,514	9,455	212	9,667
New Mexico	122,503	596		596
New York	47,654	23,245	945	24,190
North Carolina	48,740	36,563	1,014	37,577
North Dakota	70,183	16,605	273	16,878
Ohio	40,740	11,337	767	12,104
Oklahoma	69,414	6,540		6,540
Oregon	96,607	9,796	1,901	11,697
Pennsylvania	44,832	16,721		16,721
Porto Rico		330		330
Rhode Island	1,067	1,085		1,085
South Carolina	30,495	23,062		23,062
South Dakota	76,868	5,372	1,451	6,823
Tennessee	41,687	10,793	264	11,057
Texas	262,398	42,399	2,159	44,558
Utah	82,184	2,419		2,419
Vermont	9,124	1,175		1,175
Virginia	40,262	9,713		9,713
Washington	66,836	10,752		10,752
West Virginia	24,022	18,996	369	19,365
Wisconsin	55,256	20,953	1,110	22,063
Wyoming	97,548	855		855
Total	2,974,114	656,614	27,837	684,451

TABLE 762.—*Soil surveys: Status of, by States, year ended June 30, 1925*—Con.

RECONNAISSANCE SURVEY

State	Area of State	Surveys previously made	Surveys made during 1925	Total areas surveyed
	Sq. miles	*Sq. miles*	*Sq. miles*	*Sq. miles*
Alaska		31,915		31,915
Arkansas-Missouri		58,000		58,000
California		32,135		32,135
Kansas		39,960		39,960
Michigan		1,322		1,322
Minnesota		1,191	161	1,352
Montana		18,930	6,130	25,060
Nebraska		53,064		53,064
North Dakota		39,240		39,240
Ohio		41,420		41,420
Pennsylvania		41,405		41,405
South Dakota		41,400		41,400
Texas		132,735		132,735
Washington		16,540		16,540
Wisconsin		14,425		14,425
Total		563,682	6,291	569,973

TABLE 763.—*Forest areas, United States, 1920*

Region [1]	Original forest areas		Present forest areas							
			Total [2]		Saw timber		Cordwood	Not restocking	Conifers	Hardwoods
					Virgin	Second growth				
	1,000 acres	*Per cent*	*1,000 acres*	*Per cent*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*	*1,000 acres*
New England [3]	38,908	4.7	25,768	5.5	2,000	9,261	8,872	5,575	16,208	9,500
Middle Atlantic [4]	69,610	8.5	28,678	6.1	1,896	9,559	10,793	6,430	11,550	17,128
Lake [5]	103,680	12.6	57,100	12.2	10,100	13,930	12,570	20,500	28,150	28,950
Central [6]	170,560	20.7	60,182	12.8	7,600	24,301	26,011	2,270	3,220	56,962
South Atlantic and East Gulf [7]	170,240	20.7	99,000	21.1	18,300	27,900	32,080	20,720	71,700	27,300
Lower Mississippi Valley [8]	128,400	15.6	78,865	16.8	20,835	20,200	24,075	13,755	42,664	36,201
Rocky Mountain [9]	63,720	7.8	60,842	12.9	37,746	3,313	14,533	5,250	60,842	-------
Pacific [10]	77,120	9.4	59,100	12.6	39,683	5,292	7,425	6,700	59,100	-------
United States	822,238	100.0	469,475	100.0	138,160	113,756	136,359	81,200	293,434	176,041

Forest Service. Compiled from report on Senate Resolution 311 and "Forest Resources of the World."

[1] Alaskan areas are not tabulated because so little is known of the interior forests that the best estimates are only approximations. The figures now commonly used indicate 65,000,000 acres of coniferous forest and 5,000,000 acres of hardwoods. The bulk of the merchantable timber is confined to a belt along the coast of the southeastern part of the Territory, containing approximately 5,000,000 acres of forest.

[2] The areas given in this table refer only to land capable of producing saw timber or pulp timber in commercial quantities, and do not include the open woodland and chaparral of the Southwest.

[3] New England: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island.

[4] Middle Atlantic: New York, Pennsylvania, New Jersey, Delaware, Maryland, District of Columbia.

[5] Lake: Michigan, Wisconsin, Minnesota.

[6] Central: Ohio, Indiana, Illinois, Iowa, West Virginia, Kentucky, Missouri, Tennessee.

[7] South Atlantic and East Gulf: Virginia, North Carolina, South Carolina, Georgia, Alabama, Florida.

[8] Lower Mississippi Valley: Mississippi, Louisiana, Arkansas, Texas, Oklahoma.

[9] Rocky Mountain: Montana, Idaho, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico.

[10] Pacific: Oregon, Washington, California.

TABLE 764.—*National forests: Net areas of forests, by States, June 30, 1925*

State and forest	Net area
	Acres
Alabama	120,404
Alabama	[1] 105,054
McClellan	15,350
Alaska	21,334,274
Chugach	4,792,060
Tongass	16,542,214
Arizona	11,234,670
Apache [2]	677,351
Coconino	1,716,896
Coronado [2]	1,336,077
Crook	1,398,814
Kaibab	769,894
Prescott	1,164,968
Sitgreaves	639,635
Tonto	2,259,865
Tusayan	1,271,170
Arkansas	963,287
Arkansas	[1] 663,378
Ozark	[1] 299,909
California	19,143,640
Angeles	829,499
California	820,105
Cleveland	549,575
Crater [2]	48,218
Eldorado [2]	552,518
Inyo [2]	1,636,750
Klamath [2]	1,525,257
Lassen	943,366
Modoc	1,462,532
Mono [2]	795,786
Plumas	1,109,864
Santa Barbara	2,022,126
Sequoia	1,450,484
Shasta	853,786
Sierra	1,493,400
Siskiyou [2]	329,384
Stanislaus	810,657
Tahoe [2]	500,306
Trinity	1,410,027
Colorado	13,249,150
Arapaho	635,900
Cochetopa	908,787
Colorado	828,403
Grand Mesa	659,264
Gunnison	905,156
Hayden [2]	65,769
Holy Cross	1,124,329
La Sal [2]	26,631
Leadville	927,444
Montezuma	696,583
Pike	1,084,936
Rio Grande	1,135,778
Routt	748,558
San Isabel	598,936
San Juan	1,239,361
Uncompahgre	778,341
White River	884,974
Florida: Florida	342,771
Georgia	238,538
Benning	78,560
Cherokee [2]	70,196
Nantahala [2]	89,782
Idaho	19,071,962
Boise	1,062,693
Cache [2]	494,149
Caribou [2]	698,254
Challis	1,253,519
Clearwater	785,376
Coeur d'Alene	661,692
Idaho	1,856,722
Kaniksu [2]	186,874
Lemhi	1,354,747
Minidoka [2]	521,044
Nezperce	1,658,759
Payette	1,204,150
Pend Oreille	674,579
St. Joe	551,170
Salmon	1,664,026
Sawtooth	1,158,259
Selway	1,689,157
Targhee [2]	1,030,847
Weiser	565,945
Illinois: Savanna	10,710
Kentucky: Knox	22,660
Maine: White Mountain [2]	32,256
Maryland: Meade	4,725
Michigan: Michigan	126,762
Minnesota	991,106
Minnesota	190,945
Superior	800,161
Montana	15,872,610
Absaroka	841,086
Beartooth	659,919
Beaverhead	1,339,273
Bitterroot	1,047,074
Blackfeet	836,967
Cabinet	829,077
Custer [2]	517,267
Deerlodge	829,158
Flathead	1,721,478
Gallatin	575,189
Helena	681,291
Jefferson	1,040,636
Kootenai	1,331,513
Lewis and Clark	810,731
Lolo	850,677
Madison	931,020
Missoula	1,030,257
Nebraska: Nebraska	205,945
Nevada	4,977,106
Dixie [2]	56,324
Eldorado [2]	400
Humboldt	1,324,170
Inyo [2]	60,376
Mono [2]	464,102
Nevada	1,175,222
Tahoe [2]	13,853
Toiyabe	1,882,659
New Hampshire: White Mountain [3]	407,252
New Jersey: Dix	6,785
New Mexico	8,482,315
Apache [2]	886,867
Carson	1,067,092
Coronado [2]	125,352
New Mexico—Con.	
Datil	1,754,161
Gila	1,596,215
Lincoln	1,114,127
Manzano	668,051
Santa Fe	1,270,450
New York	15,954
Pine Plains	9,800
Upton	6,154
North Carolina	365,658
Cherokee [2]	
Nantahala [2]	[3] 116,781
Pisgah [2]	[3] 248,877
Unaka [2]	
Oklahoma: Wichita	61,480
Oregon	13,199,388
Cascade	1,023,510
Crater [2]	805,649
Deschutes	1,294,743
Fremont	849,264
Klamath [2]	8,723
Malheur	1,048,666
Mount Hood	1,058,873
Ochoco	717,994
Santiam	610,918
Siskiyou [2]	1,032,783
Siuslaw	547,436
Umatilla [2]	915,461
Umpqua	1,009,687
Wallowa	957,240
Whitman	1,319,035
Pennsylvania	124,135
Allegheny	103,265
Tobyhanna	20,870
Porto Rico: Luquillo	12,443
South Carolina	39,748
Jackson	20,225
Nantahala [2]	19,523
South Dakota	1,064,252
Black Hills [2]	482,025
Custer [2]	73,526
Harney	508,701
Tennessee	267,939
Cherokee [2]	141,628
Pisgah [2]	19,247
Unaka [2]	107,064
Utah	7,455,070
Ashley [2]	979,739
Cache [2]	282,803
Dixie [2]	795,884
Fishlake	1,362,600
La Sal [2]	504,291
Manti	723,897
Minidoka [2]	70,155
Powell	1,050,462
Uinta	1,076,978
Wasatch	608,261

[1] Figures include acreage acquired under Weeks law.
[2] Forest lies in more than one State.
[3] Nantahala includes 3,302,000 acres and Pisgah 8,067 acres transferred from Treasury Department.

TABLE 764.—*National forests: Net areas of forests, by States, June 30, 1925*—Con.

State and forest	Net area	State and forest	Net area	State and forest	Net area
	Acres		*Acres*		*Acres*
Virginia	516, 597	Washington—Con.		Wyoming—Contd.	
		Mount Baker	1, 460, 697	Bighorn	1, 125, 632
Eastis	4, 220	Olympic	1, 530, 867	Black Hills [2]	144, 416
Humphreys	3. 184	Rainier	1, 276, 954	Caribou [2]	6, 315
Lee	7, 177	Snoqualmie	689, 574	Hayden [2]	328, 124
Monongahela [2]	10. 414	Umatilla [2]	313, 439	Medicine Bow	550, 911
Natural Bridge	142, 721	Wenatchee	838, 184	Shoshone	1, 583, 986
Shenandoah [2]	303, 750			Targhee [2]	345, 570
Unaka [2]	45, 131	West Virginia	219, 125	Teton	1, 880, 812
				Washakie	860, 326
Washington	9, 714, 238	Monongahela [2]	160, 488	Wyoming	1, 667, 549
		Shenandoah [2]	58, 637		
Chelan	1, 835, 855			Total (159 national forests)	158, 395, 056
Columbia	764, 926	Wyoming	8, 500, 101		
Colville	746, 135				
Kaniksu [2]	257, 607	Ashley [2]	6, 460		

Forest Service in Cooperation with General Land Office.

[2] Forest lies in more than one State.

TABLE 765.—*National forests: Construction, improvement, and maintenance of roads and trails from forest road appropriations and other Federal and cooperative funds, by States, June 30, 1925*

State	Fiscal year 1925		Total to June 30, 1925				Expenditure to June 30, 1925		
	Constructed		Constructed		Maintained		Federal funds	Cooperative funds	Total funds
	Roads	Trails	Roads	Trails	Roads	Trails			
	Miles	*Miles*	*Miles*	*Miles*	*Miles*	*Miles*	*Dollars*	*Dollars*	*Dollars*
Alabama					43. 0		16, 640. 11		16, 640. 11
Alaska	19. 0	57. 4	145. 3	225. 6	170. 2	225. 6	1, 985, 730. 29	188, 894. 72	2, 174, 625. 01
Arizona	147. 9	112. 1	579. 9	1, 292. 0	1, 268. 0	1, 491. 0	2, 573, 337. 85	740, 400. 39	3, 313, 738. 24
Arkansas	52. 5	50. 0	197. 7	256. 3	183. 1	403. 4	553, 334. 63	24, 647. 73	577, 982. 36
California	235. 2	279. 6	927. 9	1, 958. 9	1, 860. 9	3, 991. 8	6, 325, 787. 15	2, 273, 302. 27	8, 599, 089. 42
Colorado	132. 7	829. 2	803. 9	2, 010. 0	910. 1	4, 006. 1	3, 259, 318. 32	636, 977. 23	3, 896, 295. 55
Florida	29. 1		91. 7		107. 6	36. 5	167, 368. 02	150, 851. 89	318, 219. 91
Georgia		2. 0	13. 5	168. 6	32. 5	168. 6	152, 988. 84		152, 988. 84
Idaho	144. 0	508. 3	1, 410. 1	4, 073. 2	1, 082. 2	6, 148. 0	6, 305, 330. 80	1, 252, 642. 96	7, 557, 973. 76
Kansas			3. 4				2, 111. 51		2, 111. 51
Maine		1. 8	5. 0	35. 3	7. 6	35. 3	15, 916. 90		15, 916. 90
Michigan			40. 4		163. 0		9, 502. 08	243. 45	9, 745. 53
Minnesota	23. 5	7. 0	181. 5	73. 7	189. 0	290. 0	276, 600. 41	134, 946. 41	411, 546. 82
Montana	164. 9	491. 5	648. 3	1, 692. 6	913. 2	5, 317. 0	3, 950, 386. 71	498, 996. 51	4, 449, 383. 22
Nebraska	3. 5		34. 9		19. 0		37, 445. 43		37, 445. 43
Nevada	53. 9	52. 0	366. 5	694. 5	171. 0	525. 0	719, 089. 92	117, 260. 44	836, 320. 36
New Hampshire	2. 9	13. 7	17. 2	49. 2	38. 9	301. 1	92, 509. 09	15, 181. 16	107, 690. 25
New Mexico	102. 6	104. 0	435. 9	1, 182. 3	923. 7	1, 182. 0	2, 053, 685. 05	229, 422. 11	2, 283, 107. 16
North Carolina	29. 5	33. 3	52. 5	543. 1	173. 8	543. 1	328, 093. 93	35, 924. 14	364, 018. 07
North Dakota			1. 0				57. 75		57. 75
Oklahoma	5. 2	1. 4	24. 0	16. 4	32. 7		37, 495. 67	8, 475. 11	45, 970. 78
Oregon	237. 2	439. 6	1, 602. 8	1, 711. 0	2, 577. 0	5, 127. 4	6, 177, 370. 39	3, 942, 754. 71	10, 120, 125. 10
Pennsylvania	16. 0		29. 0		15. 0		11, 368. 49	1, 005. 00	12, 373. 49
Porto Rico				30. 3		30. 3	9, 518. 77		9, 518. 77
South Carolina			16. 3	4. 0	49. 9		62, 044. 27	13, 515. 53	75, 559. 80
South Dakota	22. 6	14. 0	190. 8	34. 6	187. 6	10. 5	436, 189. 73	156, 712. 93	592, 902. 66
Tennessee	28. 2	46. 9	42. 4	414. 6	15. 5	381. 7	152, 208. 42	93, 525. 66	245, 734. 08
Utah	97. 2	367. 7	807. 5	2, 069. 0	654. 7	1, 102. 9	1, 893, 784. 39	654, 134. 82	2, 547, 919. 21
Virginia	28. 5	80. 7	64. 2	640. 4	152. 1	619. 2	282, 068. 83	30, 789. 66	312, 858. 49
Washington	83. 9	335. 8	547. 7	1, 191. 5	554. 7	4, 452. 5	3, 890, 719. 35	1, 251, 524. 90	5, 142, 244. 25
West Virginia	17. 7	13. 0	18. 7	179. 8	20. 0	189. 8	31, 854. 22		31, 854. 22
Wyoming	122. 0	244. 5	722. 3	949. 9	1, 461. 8	2, 279. 3	2, 341, 951. 75	288, 005. 44	2, 629, 957. 19
Total	1, 799. 7	4, 085. 5	10, 022. 3	21, 496. 8	13, 977. 8	38, 858. 1	44, 151, 779. 07	12, 740, 135. 17	56, 891, 914. 24

Forest Service.

TABLE 766.—*National forests, State forest lands, and municipal forests: Areas, by States, December 31, 1925* [1]

State	National forests [2]	State forest land				Municipal and county forests and parks	Aggregate
		Forests	Parks	Other	Total		
	Acres	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Alabama	120,404			175,000	175,000	19,232	314,636
Arizona	11,234,670			36,790	36,790		11,271,460
Arkansas	963,287						963,287
California	19,143,640		12,845	50,000	62,845	7,640	19,214,125
Colorado	13,249,150			126,600	126,600	44,449	13,420,199
Connecticut		20,000	7,000	2,000	29,000	15,543	44,543
District of Columbia						3,424	3,424
Florida	342,771		1,920		1,920		344,691
Georgia	238,538						238,538
Idaho	19,071,962	700,000	7,200	200,000	907,200	160	19,979,322
Illinois	10,710		1,220		1,220	30,578	42,508
Indiana		3,547	4,430	10,500	18,477		18,477
Iowa			7,000	5,000	12,000		12,000
Kansas			245		245	200	445
Kentucky	22,660	3,624		15,000	18,624		41,284
Louisiana		2,200		[3] 202,000	204,200		204,200
Maine	32,256	100	25	330,000	330,125	835	363,216
Maryland	4,725	3,835		2,000	5,835	14,770	25,330
Massachusetts		97,000	12,000	48,000	157,000	52,603	209,603
Michigan	126,762	333,000	7,745	739,000	1,079,745	3,495	1,210,002
Minnesota	991,106	350,000	38,279	650,000	1,038,279	7,635	2,037,020
Missouri			25,500	46,000	71,500		71,500
Montana	15,872,610	566,000			566,000		16,438,610
Nebraska	205,945		747	500	1,247	14,000	221,192
Nevada	4,977,106						4,977,106
New Hampshire	407,252	20,538		575	21,113	10,612	438,977
New Jersey	6,785	18,954	16,000	4,000	38,954	35,230	80,969
New Mexico	8,482,315			185,000	185,000		8,667,315
New York	15,954	2,026,741	83,212	15,500	2,125,453	170,574	2,311,981
North Carolina	365,658		1,724	[4] 85,600	87,324	37,257	490,239
North Dakota			250	17,300	17,550		17,550
Ohio		33,773	32,510	22,900	89,183	13,867	103,050
Oklahoma	61,480			27,300	27,300		88,780
Oregon	13,199,388		640	77,868	78,508	166,406	13,444,302
Pennsylvania	124,135	1,131,885	9,541	2,624	1,144,050	14,996	1,283,181
Rhode Island						104	104
South Carolina	39,748						39,748
South Dakota	1,064,252			[5] 80,000	80,000		1,144,252
Tennessee	267,939			22,110	22,110		290,049
Texas		5,632	550	50,000	56,182	1,500	57,682
Utah	7,455,070			66,000	66,000	1,710	7,522,780
Vermont		30,504	160	713	31,377	5,963	37,340
Virginia	516,597	588		1,500	2,088	9,700	528,385
Washington	9,714,238	40,763	6,500	1,200,000	1,247,263	14,964	10,976,465
West Virginia	219,125	15,393			15,393		234,518
Wisconsin		97,000	91,000	150,000	338,000	[6]	338,000
Wyoming	8,500,101			23,000	23,000		8,523,101
Continental United States	137,048,339	5,501,077	368,243	4,670,380	10,539,700	697,447	148,285,486
Alaska	21,334,274						21,334,274
Hawaii		[7] 579,905			579,905		579,905
Porto Rico	12,443	40,000		30,000	70,000		82,443
Total	158,395,056	6,120,982	368,243	4,700,380	11,189,605	697,447	170,282,108

Forest Service.

[1] Few, if any, of the public forests are entirely covered with saw timber.
[2] Net area as of June 30, 1925. These figures do not, of course, include the forested land within Indian reservations, national parks, national monuments, some military reservations, and the unreserved public domain.
[3] Mostly marsh, game preserves, and public shooting grounds.
[4] Of this, 77,000 acres is State swamp land.
[5] Described as "forest and park" land.
[6] Practically all villages and cities have forested areas or parks for recreation.
[7] Net area as of Dec. 31, 1924.

TABLE 767.—*Woodland on farms: Areas, by States and lumber regions, 1880, 1910, 1920, and 1925*

State and region	1880, woodland [1]	1910, woodland [1]	1920			1925		
			Timberland [2]	Other forested area	Total woodland [1]	Woodland pastured	Woodland not pastured	Total woodland [1]
	Acres	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Alabama	10,430,727	9,444,764	2,501,297	5,799,880	8,301,177	1,921,815	3,844,582	5,766,397
Arizona	13,399	100,061	54,512	469,136	523,648	413,995	47,397	461,392
Arkansas	7,861,409	8,511,510	2,359,478	5,036,550	7,396,028	1,676,965	3,791,628	5,468,593
California	1,672,810	4,541,767	572,039	3,680,248	4,252,287	4,227,435	447,489	4,674,924
Colorado	44,117	891,698	142,929	1,272,491	1,415,420	1,146,647	238,516	1,385,163
Connecticut	646,673	757,743	72,630	611,089	683,719	356,652	373,271	729,923
Delaware	279,099	252,032	46,187	176,471	222,658	10,386	188,180	198,566
Dist. Columbia	3,321	689	49	779	828	96	180	276
Florida	2,186,601	3,007,638	548,858	2,231,932	2,780,790	814,782	1,663,111	2,477,893
Georgia	15,269,225	13,002,741	2,693,340	7,798,508	10,491,848	2,324,087	4,738,073	7,062,160
Idaho	11,892	584,556	173,849	647,027	820,876	647,448	97,422	744,870
Illinois	4,935,575	3,147,879	458,464	2,644,115	3,102,579	1,897,166	738,642	2,635,808
Indiana	5,935,308	3,370,791	809,824	2,331,218	3,141,042	1,882,395	861,032	2,743,427
Iowa	2,755,290	2,314,115	152,442	2,142,832	2,295,274	1,970,588	242,695	2,213,283
Kansas	991,187	1,205,910	41,364	1,271,729	1,313,093	652,047	354,064	1,006,111
Kentucky	10,106,072	6,951,626	1,821,572	4,196,708	6,018,280	1,207,842	3,627,926	4,835,768
Louisiana	4,557,332	4,316,561	683,483	2,930,557	3,614,040	677,327	1,740,392	2,417,719
Maine	2,682,296	2,775,621	643,901	1,803,696	2,447,597	975,545	1,503,343	2,478,888
Maryland	1,634,019	1,467,333	305,758	1,021,463	1,327,221	187,183	949,310	1,136,493
Massachusetts	1,004,099	1,064,553	248,343	782,043	1,030,386	482,453	632,219	1,114,672
Michigan	4,452,265	2,927,554	442,647	2,774,353	3,217,000	2,407,170	894,631	3,301,801
Minnesota	2,030,726	3,922,391	529,392	3,953,264	4,482,656	3,549,866	1,187,067	4,736,933
Mississippi	9,144,323	7,883,558	1,597,249	5,417,649	7,014,898	2,036,111	3,449,006	5,485,117
Missouri	10,137,790	8,918,972	2,139,530	6,414,327	8,553,857	4,779,925	2,626,084	7,406,009
Montana	3,678	595,870	149,482	1,496,980	1,646,462	1,311,615	233,753	1,545,368
Nebraska	321,566	803,206	30,537	870,396	900,933	657,525	226,258	883,783
Nevada	18,697	48,209	2,015	26,622	28,637	77,371	9,213	86,584
New Hampshire	1,296,529	1,502,389	427,115	872,723	1,299,838	779,501	536,743	1,316,244
New Jersey	708,092	538,131	74,753	380,015	454,768	43,610	253,542	297,152
New Mexico	219,224	1,491,025	67,163	1,750,297	1,817,460	2,144,857	170,138	2,314,995
New York	5,195,795	4,436,145	1,027,768	3,132,799	4,160,567	2,023,332	1,781,080	3,804,412
North Carolina	13,868,086	12,451,739	2,107,021	8,192,526	10,299,547	1,388,459	7,090,679	8,479,138
North Dakota	[3]	421,877	8,759	671,077	679,836	337,240	173,522	510,762
Ohio	5,982,507	3,285,376	860,844	2,338,085	3,198,929	1,854,319	973,090	2,827,409
Oklahoma		3,568,910	229,472	3,976,699	4,206,171	3,022,717	458,078	3,480,795
Oregon	1,424,417	2,237,826	759,464	1,550,132	2,309,596	2,144,263	519,641	2,663,904
Pennsylvania	5,810,331	4,281,439	1,196,136	2,847,766	4,043,902	1,397,597	2,136,381	3,533,978
Rhode Island	182,666	185,909	30,219	100,243	130,462	50,093	94,831	144,924
South Carolina	7,255,121	6,339,142	1,284,162	4,018,413	5,302,575	1,008,359	2,584,006	3,592,365
South Dakota	[4] 80,264	383,144	14,344	521,839	536,183	289,051	112,724	401,775
Tennessee	11,232,876	8,007,733	2,213,221	4,866,948	7,080,169	1,356,867	4,223,180	5,580,047
Texas	15,851,365	27,658,413	1,065,989	13,466,924	14,532,913	17,180,001	1,590,250	18,770,251
Utah	2,305	145,510	8,408	204,354	212,762	97,357	63,871	161,228
Vermont	1,503,467	1,566,698	473,717	954,592	1,428,309	1,030,810	517,369	1,548,179
Virginia	9,126,601	8,414,680	2,150,030	5,757,322	7,907,352	1,331,719	5,522,928	6,854,647
Washington	437,696	1,541,551	337,551	1,475,510	1,813,061	1,317,170	538,413	1,855,583
West Virginia	6,180,350	3,968,836	1,134,786	2,334,658	3,469,444	905,394	2,263,631	3,169,025
Wisconsin	4,768,046	5,377,580	543,504	4,858,406	5,401,910	4,431,416	1,216,711	5,648,127
Wyoming	510	252,152	34,930	386,876	421,806	370,749	74,412	445,161
Total	190,255,744	190,865,553	35,270,527	132,460,267	167,730,794	82,797,318	67,600,704	150,398,022

[1] Woodland comprises all farm woodlots, natural or planted, and cutover land with young growth. It excludes lands covered with chaparral or woody shrubs.

[2] Timberland is that part of the total forested area on farms which is covered with trees mostly of saw-log sizes.

[3] See South Dakota.

[4] Figures for Dakota Territory.

TABLE 767.—*Woodland on farms: Areas, by States and lumber regions, 1880, 1910, 1920, and 1925*—Continued

State and region	1880, woodland [1]	1910 woodland [1]	1920			1925		
			Timberland [2]	Other forested area	Total woodland [1]	Woodland pastured	Woodland not pastured	Total woodland [1]
LUMBER REGIONS	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Northeastern	20,946,387	18,828,632	4,546,576	12,683,679	17,230,255	7,337,258	8,966,449	16,303,707
Lake	11,251,037	12,227,525	1,515,543	11,586,023	13,101,566	10,388,452	3,298,409	13,686,861
Central	54,510,478	37,651,213	9,438,241	25,126,059	34,564,300	13,883,908	15,313,585	29,197,493
N. C. pine	30,249,508	27,205,561	5,541,213	17,968,261	23,509,474	3,728,537	15,197,613	18,926,150
Southern pine	65,300,982	77,394,095	11,679,166	46,658,699	58,337,865	29,653,805	21,275,120	50,928,925
Pacific (north)	1,862,113	3,779,377	1,097,015	3,025,642	4,122,657	3,461,433	1,058,054	4,519,487
Pacific (south)	1,691,507	4,589,976	574,054	3,706,870	4,280,924	4,304,806	456,702	4,761,508
Rocky Mountain (north)	15,570	1,180,426	323,331	2,144,007	2,467,338	1,959,063	331,175	2,290,238
Rocky Mountain (south)	279,555	2,880,446	307,942	4,083,154	4,391,096	4,173,605	594,334	4,767,939
Prairie	4,148,307	5,128,252	247,446	5,477,873	5,725,319	3,906,451	1,109,263	5,015,714

Forest Service. Compiled from Census data.

[1] Woodland comprises all farm woodlots, natural or planted, and cutover land with young growth. It excludes lands covered with chaparral or woody shrubs.

[2] Timberland is that part of the total forested area on farms which is covered with trees mostly of saw-log sizes.

TABLE 768.—*Total stand and saw timber of the United States and Alaska, 1920*

Region	Stand				Saw timber		
	Total		On saw timber areas	On cordwood areas	Total	Softwoods	Hardwoods
	Million cubic feet	*Per cent*	*Million cubic feet*	*Million cubic feet*	*Million board feet*	*Million board feet*	*Million board feet*
New England	20,850	3	15,492	5,358	49,799	38,480	11,319
Middle Atlantic	24,897	3	17,126	7,771	44,857	15,353	29,504
Lake	50,584	7	41,534	9,050	110,110	40,760	69,350
Central	85,118	11	61,319	23,799	144,470	11,318	133,152
South Atlantic and East Gulf	95,158	13	73,060	23,098	220,577	136,827	83,750
Lower Mississippi Valley	118,364	16	95,252	23,112	280,908	148,308	132,600
Rocky Mountain	61,893	8	53,755	8,138	223,141	223,141	[1]
Pacific coast	287,724	39	274,874	12,850	1,141,031	1,141,031	[1]
United States	745,588	100	632,412	113,176	2,214,893	1,755,218	459,675
Alaska	[2]		[2]	[2]	[3] 102,000	[3] 100,000	[3] 2,000
United States and Alaska	745,588	100	632,412	113,176	2,316,893	1,855,218	461,675

Forest Service. Compiled from "Forest Resources of the World" and other sources.

[1] Relatively small quantities of hardwoods. No estimates available.

[2] No estimate.

[3] Figures only approximations, due to the lack of knowledge, particularly of the forests of interior Alaska.

TABLE 769.—*Forest planting: Cumulative record, by principal agencies and States, through calendar year 1925*

[Fractions of acres rounded to nearest entire number]

State	Principal agencies							
	Forest Service on national forests	States	Municipalities [1]	Industrial organizations [1]	Other organizations [1]	Schools and colleges	Individuals [1]	Total
	Acres	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Alabama	18						100	118
Arizona	1,637						200	1,837
Arkansas	772						500	1,272
California	6,576	60	1,292	8,200	6		50,000	66,134
Colorado	24,526		100	50			9,900	34,576
Connecticut		1,100	1,220	4,850	20	10	4,060	11,260
Delaware				2			8	10
Florida	956			50			150	1,156
Georgia							103	103
Idaho	43,896						2,000	45,896
Illinois			255	176			40,000	40,431
Indiana				3,640				3,640
Iowa		100				25	219,875	220,000
Kansas	405						182,650	183,055
Kentucky				1,600			200	1,800
Louisiana				15,000			1,000	16,000
Maine				9,500			500	10,000
Maryland		53	532	15		55	268	923
Massachusetts		18,000	4,000	4,000			14,000	40,000
Michigan	12,513	25,430		7,380			[2]	45,323
Minnesota	9,252	2,050	300	40			170,000	181,642
Mississippi		30					25	55
Missouri				1,500			8,500	10,000
Montana	27,227						1,000	28,227
Nebraska	10,982						203,000	213,982
Nevada	696						25	721
New Hampshire	43	1,200	1,200	2,500		100	3,800	8,843
New Jersey		194	602	1,448	4	15	1,239	3,502
New Mexico	1,590						500	2,090
New York		35,063	11,623	9,264	2,799	536	37,027	96,312
North Carolina	110		1	90			4,500	4,701
North Dakota	303						52,750	53,053
Ohio		635	1,170	931	40	150	3,970	6,896
Oklahoma	19						2,500	2,519
Oregon	31,354			660				32,014
Pennsylvania	11	24,205	1,600	18,100	1,000	500	31,000	76,416
Rhode Island					60		340	400
South Carolina				53		3	10	66
South Dakota	11,738						122,000	133,738
Tennessee							50	50
Texas				100			3,600	3,700
Utah	8,110		40				100	8,250
Vermont		1,900	826	1,605	89	400	4,474	9,294
Virginia	115		1	2		15	103	236
Washington	16,838		160	200				17,198
West Virginia	228			470			60	758
Wisconsin		3,500					2,000	5,500
Wyoming	1,962						1,000	2,962
Total	211,877	113,520	24,922	91,426	4,018	1,809	1,179,087	1,626,659
Porto Rico		478		124		15	385	1,002

Forest Service.

[1] It is impossible to obtain accurate figures for areas planted by agencies other than the Federal Government or the States. The best estimates have been used. They came from State foresters, State colleges, and agricultural experiment stations, and from reliable local sources.

[2] Considerable planting in Michigan of which there is no record.

TABLE 770.—*National forests: Fires: Number by location, causes, and classification, by cost of suppression and damage, 1925*

State and district	Year	Location of origin of fires					Causes of fires								Classification of fires according to cost of suppression and resources damaged					
		Inside forest		Outside forest		Total	Nature-caused	Man-caused												
		On national forest lands	On private lands	Entered forests	Confined to outside areas		Lightning	Railroads	Camp fires	Smokers	Brush burning	Incendiary	Lumbering	Miscellaneous	$25 and under	$26 to $100	$101 to $500	$501 to $1,000	$1,001 to $5,000	Over $5,000
		No.	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*	*No.*
Total	1910	3,438	850	913		5,201	724	1,704	688	[1]1,184	307	302	51	241						
	1916	3,417	1,389	127	722	5,655	1,337	541	990	[1]1,019	481	708	358	221						
	1917	4,589	1,834	229	1,162	7,814	2,132	1,003	1,288	[1]1,365	557	952	193	324						
	1918	3,616	1,041	119	794	5,573	2,457	618	943	[1]658	361	257	104	175						
	1919	4,117	1,361	139	1,183	6,800	2,197	701	1,466	[1]1,155	360	339	278	304						
	1920	3,968	1,192	86	832	6,078	3,081	508	1,053	[1]485	248	245	211	247						
	1921	3,452	1,155	134	1,110	5,851	1,451	643	1,738	[1]674	365	562	156	262						
	1922	4,141	1,187	146	901	6,375	2,323	381	843	1,110	236	870	156	456	4,575	1,014	517	107	114	48
	1923	3,233	1,145	139	651	5,168	2,052	234	539	858	188	954	148	195	3,800	864	375	54	51	24
	1924	5,375	1,489	248	1,135	8,247	3,421	397	876	1,551	309	1,127	210	356	5,200	1,626	868	182	241	130
	1925	5,603	1,528	167	965	8,263	5,001	274	664	843	214	894	150	223	5,862	1,450	653	117	102	57
Average of 10-year period (1916–1925)[2]		4,151	1,332	154	946	6,583	2,545	530	1,040	972	332	691	197	276	4,859	1,238	603	115	127	65
1925																				
Alabama		31	16	5	1	53	2	8	3	11	4	7	2	16	43	9	1			
Alaska		37			1	38		29	2	6		1			34	2		1	1	
Arizona		540	25	2	5	572	460		28	63	1	3	5	12	487	58	14	3	3	2
Arkansas		281	220	46	122	669	32	4	30	29	19	534	4	17	293	216	143	10	7	
California		1,175	427	29	284	1,915	1,378	34	88	201	25	97	36	56	1,375	353	140	25	18	4
Colorado		79	23		11	113	46	10	21	20	7	1	3	5	76	30	7			
Florida		34	59	3	4	100	2		1	34	12	34	17		85	13	2			
Idaho		1,332	132	4	81	1,549	1,389	7	69	43	18	3	11	9	1,215	189	89	14	23	19
Michigan		7	9	6	15	37	5	9		13	6		1	3	17	12	6	1	1	
Minnesota		17	19	3	5	44	4	2	5	13	17	1		2	14	11	15	2	2	

Montana	344	111	8	119	582	356	66	62	63	12	4	10	9	438	83	37	8	11	5
Nebraska			1		1				1					1					
Nevada	8	1	1		10	3		2			2		3	10					
New Hampshire	2	5	1		8		5	1				1	1	8					
New Mexico	219	30	3	14	266	171		29	53	3	2	1	7	198	33	11	4	3	3
North Carolina	60	43	24	8	135	11	12	14	11	12	59	5	11	73	41	16	3	2	
Oklahoma	6				6	1			4				1	6					
Oregon	821	166	5	180	1,172	774	25	169	129	21	23	12	19	891	194	62	14	8	3
Pennsylvania	21	19		1	41	4	11		19	1		2	4	21	9	5	4		2
South Dakota	48	7		6	61	39	4	2	6	3	4	1	2	48	8	4		1	
Tennessee	100	95	5	7	207	14	19	18	15	14	100	11	16	109	57	29	5	3	1
Utah	30		1	1	32	15		6	1	4	3	1	2	30		2			
Virginia	37	18	4	3	62	14	4	2	12	10	6	4	10	37	18	7			
Washington	325	92	13	92	522	263	17	98	85	19	5	21	14	305	101	57	23	19	17
West Virginia	8	11	3	4	26		7	1	2	5	6	1	4	12	10	3	1		
Wyoming	41			1	42	18	1	13	9	1				36	5	1			
District 1	1,164	225	12	155	1,556	1,242	70	90	84	25	7	21	17	1,167	205	110	22	29	23
District 2	175	58	10	38	281	100	26	40	59	33	6	5	12	176	65	33	3	4	
District 3	744	55	5	19	823	618		57	114	4	5	6	19	670	91	25	7	6	5
District 4	582	19	2	46	649	546	3	50	28	10	5	1	6	557	68	18		5	1
District 5	1,175	427	29	284	1,915	1,378	34	88	201	25	97	36	56	1,375	353	140	25	18	4
District 6	1,146	258	18	272	1,694	1,037	42	267	214	40	28	33	33	1,196	295	119	37	27	20
District 7	580	486	91	150	1,307	80	70	70	137	77	746	47	80	687	373	206	23	12	3
District 8	37			1	38		29	2	6			1		34		2		1	1

Forest Service.

[1] Classed as "unknown."

[2] For certain items the average is for a four-year period rather than the full time.

TABLE 771.—*Forest fires: Number by causes, United States, 1924*

Group and State	Year	Number of fires, by causes									
		Lightning	Railroads	Camp fires	Smokers	Brush burning	Incendiary	Lumbering	Miscellaneous	Unknown	Total
United States	1916	3,434	4,599	3,951	----------	6,623	6,112	2,734	2,191	11,329	41,003
	1917	2,523	6,209	5,182	----------	5,668	5,416	2,594	2,185	8,526	38,303
	1918	3,066	4,467	3,441	----------	3,256	2,317	1,406	1,959	6,249	26,161
	1919	2,721	3,820	4,041	----------	3,106	3,125	1,435	2,039	6,718	27,005
	1920	3,956	4,818	3,679	----------	3,188	3,078	1,724	1,781	5,929	28,153
	1921	2,188	5,515	7,638	----------	4,358	5,336	1,823	2,804	8,770	38,435
	1922	3,933	7,139	5,272	5,694	7,492	10,201	2,694	4,074	5,392	51,891
	1923	3,605	8,666	6,519	7,625	14,077	20,496	4,904	7,030	5,907	78,829
	1924	5,436	8,431	7,954	12,854	15,881	20,845	5,385	7,058	8,077	91,921
9-year average		3,449	6,020	8,272		7,129	8,576	2,759	3,422	7,520	47,147
1924											
Northeastern:											
Softwood subgroup—											
Maine	----------	11	26	71	8	21	6	11	6	60	220
New Hampshire	----------	14	299	19	175	39	3	15	69	105	738
Vermont	----------	1	15	5	39	21	6	6	10	22	125
New York	----------	15	140	68	241	91	40	9	300	----------	904
Hardwood subgroup—											
Massachusetts	----------	2	997	17	803	441	86	4	501	884	3,735
Rhode Island	----------	----------	2	1	18	5	2	1	3	31	63
Connecticut	----------	1	268	156	203	149	19	2	36	179	1,013
New Jersey	----------	----------	443	22	135	72	----------	----------	65	434	1,171
Appalachian:											
Pennsylvania	----------	8	541	162	501	90	123	7	207	359	1,998
Delaware	----------	17	15	4	13	8	----------	5	18	----------	80
Maryland	----------	----------	47	36	35	21	45	5	15	64	268
Virginia	----------	1	139	81	108	167	35	61	30	211	836
West Virginia	----------	2	114	11	132	35	98	184	20	----------	596
Southeastern:											
North Carolina	----------	8	235	230	161	671	335	200	165	674	2,679
South Carolina	----------	49	61	54	66	1,579	336	134	90	----------	2,369
Georgia	----------	476	607	932	523	2,973	2,861	715	353	----------	[1] 9,240
Florida	----------	25	86	327	154	998	2,663	142	220	----------	4,615
Alabama	----------	152	1,399	158	2,504	2,588	3,848	1,856	1,729	3,379	17,593
Mississippi	----------	15	393	314	541	977	496	82	182	----------	[1] 3,000
East Mississippi:											
Ohio	----------	1	33	11	8	21	18	----------	8	39	139
Indiana	----------	25	89	54	208	84	44	5	36	----------	545
Illinois	----------	38	112	208	82	80	74	12	91	----------	697
Kentucky	----------	36	102	205	103	248	270	43	87	----------	1,094
Tennessee	----------	1	86	126	47	78	472	38	64	143	1,055

West Mississippi:										
Missouri		63	91	207	171	315	1,167	29	172	2,215
Arkansas		273	357	1,095	1,021	1,376	4,927	377	574	[1] 10,000
Oklahoma		46	120	97	104	295	177	48	159	1,046
Louisiana		23	339	374	403	201	812	235	342	767	3,496
Texas		18	183	757	1,574	509	821	628	354	214	5,058
Lake States:										
Michigan		6	342	384	480	464	10	56	106	88	1,936
Wisconsin			16	7	15	22	1	4	3	158	226
Minnesota		11	197	88	161	374	46	7	149	112	1,145
Prairie:										
Iowa										
North Dakota										
South Dakota		48	2	3	24	2	11	2	2	94
Nebraska		3								3
Kansas										
Rocky Mountain:										
Northern subgroup—										
Montana		269	48	159	141	63	150	27	20	27	904
Idaho		870	160	188	272	147	23	79	74	67	1,880
Wyoming		27	1	44	22	5	1	1	5		106
Southern subgroup—										
Colorado		33	31	47	66	9	2	3	16		207
Arizona		418	3	48	102	11	8	19	16		625
New Mexico		97	1	19	51	3	10	5	10		196
Nevada				2	3	9	1	1	4		20
Utah		27	1	19	27	3	9	1	11		98
Pacific:										
Washington		406	112	410	384	287	50	167	178		1,994
Oregon		1,132	64	419	538	147	432	78	372	60	3,242
California		785	114	315	687	182	307	81	186		2,657
SUMMARY BY GROUPS										
Northeastern:										
Softwood subgroup		41	480	163	463	172	55	41	385	187	1,987
Hardwood subgroup		3	1,710	196	1,159	667	107	7	605	1,528	5,982
Appalachian		31	856	294	789	321	301	262	290	634	3,778
Southeastern		705	2,781	2,015	3,749	9,786	10,539	3,129	2,739	4,053	39,496
East Mississippi		101	422	604	448	511	878	98	286	182	3,530
West Mississippi		423	1,090	2,530	3,273	2,696	7,904	1,317	1,601	981	21,815
Lake States		17	555	479	656	860	57	67	258	358	3,307
Prairie		51	2	3	24	2	11	2	2		97
Rocky Mountain:										
Northern subgroup		1,166	209	391	435	215	174	107	99	94	2,890
Southern subgroup		575	36	135	249	35	30	29	57		1,146
Pacific		2,323	290	1,144	1,609	616	789	326	736	60	7,893

Forest Service.

[1] Based in part on office estimates.

TABLE 772.—*Timber removed annually from forests of the United States*

Kind of material	Timber removed		Approximate value or cost [1]	Equivalent in lumber which could have been sawed from same trees			Equivalent in standing timber			
	Unit	Quantity		Hardwoods	Softwoods	Total	Hardwoods	Softwoods	Total	Per cent
			Dollars	*M board feet*	*M board feet*	*M board feet*	*M cubic feet*	*M cubic feet*	*M cubic feet*	
Fuel wood	Cords	100,000,000	475,000,000	3,500,000	1,500,000	5,000,000	6,650,000	2,850,000	9,500,000	38.33
Lumber, dimension material, and sawed ties.	M board feet	37,700,000	1,138,917,000	9,425,000	28,275,000	37,700,000	2,064,075	6,192,225	8,256,300	33.31
Fencing	Number of posts	900,000,000	225,000,000	165,000	660,000	825,000	360,000	1,440,000	1,800,000	7.26
Ties, hewed	Number	70,000,000	73,500,000	1,680,000	420,000	2,100,000	672,000	168,000	840,000	3.39
Pulpwood	Cords	5,000,000	79,750,000	195,000	2,145,000	2,340,000	48,700	536,300	585,000	2.36
Mine timbers	Cubic feet	293,000,000	56,913,000	439,500	439,500	879,000	197,775	197,775	395,550	1.60
Cooperage:										
Tight staves	M staves	350,000	19,250,000	399,000	133,000	532,000	87,450	29,100	116,550	
Tight heading	M sets	24,000	12,000,000	141,800	36,200	178,000	31,000	8,000	39,000	
Slack staves	M staves	1,200,000	18,000,000	240,400	121,600	362,000	52,800	26,400	79,200	1.27
Slack heading	M sets	90,000	10,800,000	166,500	166,500	333,000	36,490	36,500	72,990	
Hoops	Thousands	120,000	1,800,000	21,500		21,500	7,080		7,080	
Shingles	do	9,000,000	37,710,000		900,000	900,000		198,000	198,000	.80
Distillation wood	Cords	1,400,000	9,268,000	185,000		185,000	120,000	13,000	133,000	.54
Veneer logs	M feet, log scale	576,000	25,079,060	587,520	103,680	691,200	90,000	15,980	105,980	.43
Tanning extract wood	Cords	1,000,000	10,250,000	87,000		87,000	95,000		95,000	.38
Poles	Number	4,250,000	10,425,000	55,000	200,000	255,000	11,700	43,550	55,250	.22
Vehicle stock, woodenware, handles, furniture, etc.	M board feet	200,000	7,288,000	197,700	2,300	200,000	45,070	730	45,800	.18
Piling	Number of pieces	1,500,000	6,000,000	40,000	140,000	180,000	7,800	31,200	39,000	.16
Excelsior wood	Cords	200,000	1,800,000	60,000	15,000	75,000	18,720	4,680	23,400	.09
Export logs and hewn timbers	M board feet	100,000	3,445,000	50,000	50,000	100,000	9,200	9,200	18,400	.07
Lath	Thousands	2,000,000	9,620,000							
Total			2,232,015,000	17,635,920	35,307,780	52,943,700	10,604,860	11,800,640	22,405,500	90.39
Destroyed by fire [2]	M cubic feet	1,080,000	10,000,000	500,000	1,750,000	2,250,000	330,000	750,000	1,080,000	4.36
Destroyed by insects, disease, and windfall.	do	1,300,000	12,000,000	1,000,000	4,000,000	5,000,000	325,000	975,000	1,300,000	5.25
Grand total			2,254,015,000	19,135,920	41,057,780	60,193,700	11,259,860	13,525,640	24,785,500	100.00

Forest Service. Averages of recent years.

[1] Based on values of approximately 1919, milled products at the mill, fuel at point of production, all others at point of consumption except exports (declared valuation).

[2] These figures express mainly that part of the damage done by fire which can be readily stated in dollars, namely, the loss of merchantable timber. Other damages suffered are the loss of young growth and forage, the injury of trees, resulting in admitting the inroads of insects and disease, the deterioration of forest types resulting from the decrease of valuable species which are sensitive to fire, accelerated run-off followed by soil erosion and irregular stream flow, destruction of animals, fish, and birds, and the prevention of recreational uses. One of the most menacing features of the present forest situation is the lowered productivity of forest soils, sometimes amounting to absolute sterility, which results from the action of fires.

TABLE 773.—*National forests: Grazing—Carrying capacity, stock grazed, and receipts, by States, 1924*

State and district	Carrying capacity			Stock actually grazed			Receipts from grazing
	Cattle and horses	Sheep and goats	Swine	Cattle and horses	Sheep and goats	Swine	
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Dollars*
Alabama	2,000			77			55.40
Arizona	285,195	259,277		276,151	262,492	295	296,191.26
Arkansas	67,890	121,970	169,865	1,364	23	81	830.39
California	218,982	518,357		192,123	432,614	277	176,235.10
Colorado	388,958	1,084,830		304,135	880,441	95	238,651.94
Florida	7,500	18,700	17,000	724	582	28	321.26
Georgia	3,005	1,230	1,743	187	60	18	187.19
Idaho	166,203	1,543,331		144,586	1,330,835		259,259.18
Maine	26			13			10.47
Michigan							
Minnesota							
Montana	170,123	602,557		149,209	569,896		134,011.18
Nebraska	16,000			12,457			11,069.80
Nevada	77,803	370,479		75,044	334,912	1	93,742.51
New Hampshire	324			166			132.01
New Mexico	158,386	344,076		111,135	263,875	176	142,032.81
North Carolina	4,592	1,887	3,535	901	78	24	836.65
Oklahoma	3,135			3,525			6,774.50
Oregon	140,415	666,607		118,897	624,848	8	163,283.17
Pennsylvania	500						
South Carolina	445	236	349	38	13	4	34.32
South Dakota	39,574	15,965		26,522	8,813		16,436.37
Tennessee	2,751	590	685	168	31		174.35
Utah	157,019	757,246		153,011	766,793	526	199,745.42
Virginia	7,490	2,435	465	1,482	171	2	1,283.20
Washington	31,356	261,203		29,438	203,605		46,103.11
West Virginia	2,777	7,487	353	629	1,566	25	928.75
Wyoming	170,320	701,893		120,289	648,728		127,231.21
Total	2,102,769	7,280,356	193,995	1,722,271	6,330,376	1,560	1,915,561.49
District 1	185,276	796,917		159,400	634,403		151,049.55
District 2	491,202	1,481,750		405,924	1,232,146	90	316,958.49
District 3	439,981	600,353		382,930	522,859	471	433,679.90
District 4	490,683	2,767,000		421,671	2,641,100	532	609,217.71
District 5	220,507	553,451		193,866	468,693	275	183,147.99
District 6	172,685	926,350		149,206	828,651	10	209,939.36
District 7	102,435	154,535	193,995	9,274	2,524	182	11,568.49

Forest Service.

TABLE 774.—*Production of lumber, by States, 1899, 1909, 1919, 1922–1924*

[Thousand feet—i. e., 000 omitted]

State	1899	1909	1919	1922	1923	1924
	Quantity	*Quantity*	*Quantity*	*Quantity*	*Quantity*	*Quantity*
Alabama	1,101,386	1,691,001	1,798,746	1,457,608	1,786,493	1,873,403
Arizona	36,182	62,731	73,655	88,800	130,642	142,512
Arkansas	1,623,987	2,111,300	1,772,157	1,382,032	1,537,533	1,536,255
California	737,035	1,143,507	1,259,363	[1] 1,720,556	[1] 2,118,094	[1] 1,996,496
Colorado	133,746	141,710	64,864	38,917	38,233	42,014
Connecticut	108,093	168,371	86,708	53,198	59,187	48,209
Delaware	35,955	55,440	27,437	14,139	16,190	13,851
Florida	790,373	1,201,734	1,137,432	980,014	1,110,333	1,089,429
Georgia	1,311,917	1,342,249	893,965	809,391	1,149,391	1,206,599
Idaho	65,363	645,800	765,388	857,581	1,072,930	1,017,960
Illinois	388,469	170,181	64,628	24,387	28,312	32,623
Indiana	1,036,999	556,418	282,487	148,569	189,415	193,391
Iowa	352,411	132,021	18,493	6,131	10,278	12,148
Kansas	10,665	4,716	2,840	[2] 3,657	[2] 3,804	[2] 5,550
Kentucky	774,651	860,712	512,078	210,360	196,033	193,879
Louisiana	1,115,366	3,551,918	3,163,871	3,386,000	3,554,212	3,396,940
Maine	784,647	1,111,565	596,116	362,224	375,678	369,615
Maryland	183,711	267,939	113,362	54,358	62,571	68,110
Massachusetts	344,190	361,200	166,841	94,656	127,561	129,619
Michigan	3,018,338	1,889,724	875,891	656,952	833,295	793,636
Minnesota	2,342,338	1,561,508	699,639	511,744	551,592	527,962
Mississippi	1,206,265	2,572,669	2,390,135	2,267,695	2,690,976	2,806,975
Missouri	723,754	660,159	321,383	201,849	178,810	188,426
Montana	255,685	308,582	287,378	303,458	426,917	350,335
Nebraska	4,655	[3]	505	[4]	[4]	[4]
Nevada	725	[3]	20,335	[5]	[5]	[5]
New Hampshire	572,447	649,606	338,777	186,706	255,009	265,474
New Jersey	74,118	61,620	36,888	9,553	13,867	12,542
New Mexico	30,880	91,987	86,808	126,449	126,461	125,422
New York	878,448	681,440	357,764	222,257	235,993	237,581
North Carolina	1,286,638	2,177,715	1,654,435	936,248	1,095,925	1,071,912
Ohio	990,497	542,904	280,076	136,877	151,522	155,016
Oklahoma	22,104	225,730	168,403	149,323	136,174	154,503
Oregon	734,538	1,898,995	2,577,403	3,023,768	3,966,083	3,665,547
Pennsylvania	2,333,278	1,462,771	630,471	333,289	361,068	343,049
Rhode Island	18,528	25,489	11,030	3,030	4,017	3,759
South Carolina	466,429	897,660	621,679	854,799	1,070,397	878,517
South Dakota	[6] 33,734	31,057	42,970	35,395	48,618	51,465
Tennessee	950,958	1,223,849	792,132	485,979	661,436	658,888
Texas	1,232,404	2,099,130	1,379,774	1,542,708	1,559,263	1,528,490
Utah	17,548	12,638	11,917	6,827	7,728	7,378
Vermont	375,809	351,571	218,479	95,967	119,970	126,884
Virginia	959,119	2,101,716	1,098,038	617,493	770,771	696,654
Washington	1,429,032	3,862,916	4,961,220	5,836,277	6,677,656	6,267,343
West Virginia	778,051	1,472,942	763,103	554,277	639,514	614,289
Wisconsin	3,389,166	2,025,038	1,116,338	775,540	1,007,414	1,016,506
Wyoming	16,963	28,602	8,674	7,850	8,139	14,430
All other	[7] 6,571	[8] 11,230				
United States	[9] 35,084,166	44,509,761	[9] [10] 34,552,076	[11] 31,568,888	[11] [12] 37,165,505	[11] [12] 35,930,986

[1] Includes cut of Nevada.
[2] Includes cut of Nebraska.
[3] Included in "All other."
[4] Included with Kansas.
[5] Included with California.
[6] Includes cut of North Dakota.
[7] Reported as cut of Alaska.
[8] Includes cut of Nebraska and Nevada.
[9] Includes both merchant and custom sawing.
[10] Includes 2,655 mills cutting less than 50,000 feet each per year
[11] Mills cutting less than 50,000 feet each year excluded.
[12] Excludes custom mills.

TABLE 774.—*Production of lumber, by States, 1899, 1909, 1919, 1922–1924*—Continued

[Thousand feet—i. e., 000 omitted]

State	1899	1909	1919	1922	1923	1924
REGIONS	*Quantity*	*Quantity*	*Quantity*	*Quantity*	*Quantity*	*Quantity*
Northeastern	5, 709, 224	5, 197, 012	2, 583, 873	1, 423, 377	1, 631, 111	1, 618, 693
Central	5, 643, 379	5, 487, 165	3, 015, 887	1, 762, 298	2, 045, 042	2, 036, 512
Southern	8, 403, 802	14, 795, 731	12, 704, 483	11, 974, 771	13, 524, 375	13, 592, 594
North Carolina pine	2, 712, 186	5, 177, 091	3, 374, 152	2, 408, 540	2, 937, 093	2, 646, 483
Lake	8, 749, 842	5, 476, 270	2, 691, 868	1, 944, 236	2, 392, 301	2, 338, 104
North Pacific	2, 163, 570	5, 761, 911	7, 538, 623	8, 860, 045	10, 643, 739	9, 932, 890
South Pacific	737, 760	1, 143, 507	1, 279, 698	1, 720. 556	2, 118, 094	1, 996, 496
N. Rocky Mountain	321, 048	954, 382	1, 052, 766	1, 161, 039	1, 499, 847	1, 368, 295
S. Rocky Mountain	235, 319	337, 668	245, 918	268, 843	311, 203	331, 756
Prairie	[13] 408, 036	[13] 179, 024	64, 808	45, 183	62, 700	69, 163

Forest Service. Compiled from Bureau of the Census reports.

Regions.—Northeastern: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.
Central: Illinois, Indiana, Kentucky, Missouri, Ohio, Tennessee, West Virginia.
Southern: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, Texas.
North Carolina pine: North Carolina, South Carolina, Virginia.
Lake: Michigan, Minnesota, Wisconsin.
North Pacific: Oregon, Washington.
South Pacific: California, Nevada.
North Rocky Mountain: Idaho, Montana.
South Rocky Mountain: Arizona, Colorado, New Mexico, Utah, Wyoming.
Prairie: Iowa, Kansas, Nebraska, North Dakota, South Dakota.

[13] Includes "All other."

TABLE 775.—*Lumber production: Principal kinds reported, by States and regions, 1924*

[Thousand feet—i. e., 000 omitted]

State	Number of active mills reporting	Aggregate	Softwoods														
			Total	Yellow pine	Douglas fir	Western yellow pine	Hemlock	White pine	Cypress	Spruce	Redwood	Cedar	White fir	Larch	Sugar pine	Lodgepole pine	Balsam fir
United States	14,729	35,930,986	29,405,685	12,486,590	7,461,750	2,602,710	1,878,989	1,530,675	877,120	717,375	604,292	330,270	319,145	305,546	245,688	23,523	22,012
Alabama	1,066	1,873,403	1,676,479	1,663,159					6,912			6,408					
Arizona	26	142,512	142,512		80	142,357							75				
Arkansas	572	1,536,255	901,802	828,854					72,525			423					
California and Nevada	189	1,996,496	1,996,045		222,252	735,901				1,161	560,512	32,987	203,560		238,265	1,407	
Colorado	122	42,014	41,931		3,167	18,357				9,960		3	885			9,559	
Connecticut	108	48,209	12,222				3,375	8,821				26					
Delaware	41	13,851	11,113	11,112					1								
Florida	220	1,089,429	1,072,795	836,988					235,707			100					
Georgia	1,036	1,206,599	1,084,533	1,010,930			1,017	3,677	68,899			10					
Idaho	159	1,017,960	1,017,134		86,214	343,917	1,281	376,225		11,886		25,022	82,134	90,004		451	
Illinois	77	32,623	1,272	276					996								
Indiana	336	193,391	45									45					
Iowa	31	12,148	9					1		8							
Kentucky	345	193,879	17,518	7,310			3,319	1,621	3,565			1,703					
Louisiana	323	3,396,940	2,695,099	2,395,216					299,664			219					
Maine	446	369,615	330,205				37,935	146,020		129,111		5,730		96			11,313
Maryland	185	68,110	29,270	27,523			345	1,376	25			1					3
Massachusetts	166	129,619	92,576				9,563	80,562		2,235		213					
Michigan	170	793,636	244,568				199,980	30,163		6,153		2,867		2,840			2,565
Minnesota	168	527,962	462,645				750	438,824		15,080		340		5,009			2,633
Mississippi	849	2,806,975	2,239,539	2,199,716					39,798			25					
Missouri	280	188,426	70,281	24,426					45,853			2					
Montana	103	350,335	350,330		54,050	137,358	731	9,484		4,011		780	323	141,075		2,518	
New Hampshire	261	265,474	236,196				29,645	155,539		49,621		15		36			1,340
New Jersey	58	12,542	4,458	4,098			145	20				195					
New Mexico	68	125,422	125,332		18,555	95,091				3,749			7,937				
New York	764	237,581	90,071	223			37,172	35,265		16,907		114		72			318
North Carolina	1,125	1,071,912	878,996	817,190			13,099	9,238	20,533	15,546		3,390					
Ohio	389	155,016	442				142	299				1					
Oklahoma	79	154,503	147,056	147,027					29								

Oregon	410	3,665,547	3,660,191		2,478,583	740,787	115,449	2,325		203,526	43,780	44,369	9,135	14,808	7,423	6
Pennsylvania	737	343,049	126,052	1,672			104,707	19,610		47		6		10		
Rhode Island	8	3,759	1,365					1,365								
South Carolina	453	878,517	756,440	705,850					50,576			14				
South Dakota	51	51,465	51,465			51,405										
Tennessee	608	658,888	118,257	51,937			32,034	4,260	20,381	3,243		6,402				
Texas	229	1,528,490	1,355,412	1,348,327					7,082			3				
Utah	60	7,378	7,006		669	2,433		65		2,284		3	416		1,136	
Vermont	296	126,884	70,573				16,334	19,822		30,899		311	9			3,198
Virginia	955	696,054	431,481	403,326			14,419	8,104	4,574	666		392				
Washington	579	6,267,343	6,262,052		4,597,213	333,209	826,710	86,652		164,835		195,589	14,670	43,174		
West Virginia	281	614,289	125,405	1,430			84,082	2,641		37,215		37				
Wisconsin	255	1,016,506	453,183				346,755	88,696		6,152		2,525		8,413		642
Wyoming	42	14,430	14,389		967	1,895				3,071			10		8,446	
All other [1]	3	5,550														
REGIONS																
Northeastern	3,070	1,618,693	1,004,101	44,628			239,221	468,400	26	228,820		6,611		223		16,172
Lake	593	2,338,104	1,160,396				547,485	557,683		27,394		5,732		16,262		5,840
Central	2,316	2,036,512	333,220	85,379			119,577	8,821	70,795	40,458		8,190				
North Carolina pine	2,533	2,646,483	2,066,917	1,926,366			27,518	17,342	75,683	16,212		3,796				
Southern pine	4,374	13,592,594	11,172,715	10,430,217			1,017	3,677	730,616			7,188				
Pacific (north)	989	9,932,890	9,922,243		7,075,796	1,073,996	942,159	88,977		368,361	43,780	239,958	23,805	57,982	7,423	6
Pacific (south)	189	1,996,496	1,996,045		222,252	735,901				1,161	560,512	32,987	203,560		238,265	1,407
Rocky Mountains (north)	262	1,368,295	1,367,464		140,264	481,275	2,012	385,709		15,897		25,802	82,457	231,079		2,969
Rocky Mountains (south)	318	331,756	331,170		23,438	260,133		65		19,064		6	9,323			19,141
Prairie	85	69,163	51,414			51,405		1		8						

[1] Kansas and Nebraska.

TABLE 775.—*Lumber production: Principal kinds reported, by States and regions, 1924*—Continued

[Thousand feet—i. e., 000 omitted]

State	Hardwoods																
	Total	Oak	Red gum	Maple	Birch	Yellow poplar	Chestnut	Tupelo	Elm	Basswood	Beech	Ash	Cottonwood	Hickory	Walnut	Sycamore	All other
United States	6,525,301	2,076,977	1,070,724	857,253	381,567	350,727	312,989	235,259	209,439	200,456	194,444	163,149	166,913	85,596	68,379	27,547	103,882
Alabama	196,924	58,914	60,077	642	51	34,006	1,015	25,423	1,755	360	1,324	5,452	3,186	3,111	99	1,295	214
Arizona																	
Arkansas	634,453	277,445	223,006	18,379	36	603		8,440	23,080	154	2,004	24,540	28,733	14,449	1,080	8,504	4,000
California and Nevada	451	121											2		1	1	326
Colorado	83												83				
Connecticut	35,987	14,686		3,089	1,344	375	14,143		303	135	266	684	59	878	18	3	4
Delaware	2,738	2,065	245			105	25	298									
Florida	16,634	852	3,488	15		4,369		4,471	3		44	1,305	471	1,580	20		16
Georgia	122,066	36,391	29,307	1,062	8	36,383	1,429	7,103	914	58	179	6,167	618	1,163	20	607	657
Idaho	826												826				
Illinois	31,351	12,761	2,639	1,856	191	653	8	761	2,542	33	1,300	1,258	941	681	3,792	1,554	381
Indiana	193,346	66,457	2,091	37,464	91	5,416	309	403	19,819	4,692	26,867	6,540	1,241	4,820	11,119	3,421	1,696
Iowa	12,139	1,438		310	33				1,037	494		87	1,265	20	7,399	28	28
Kentucky	176,361	99,449	5,919	4,446	221	20,090	7,793	806	1,146	2,943	10,724	4,678	1,556	10,569	4,614	717	690
Louisiana	701,841	217,856	252,529	591		7,960		109,709	12,740	59	2,814	35,667	13,861	5,180	414	1,681	40,780
Maine	39,410	2,331		4,946	26,027	112	200		212	1,112	3,765	597	78	30			
Maryland	38,840	18,447	998	4,888	1,244	2,279	7,375	142	8	955	1,167	103	4	858	183	186	3
Massachusetts	37,043	7,488		3,137	3,031	146	11,980		75	169	1,444	1,095	60	75	26		8,317
Michigan	549,068	4,530		336,973	85,455	33			28,833	55,350	28,194	7,036	1,928	84	72	59	221
Minnesota	65,317	4,258		513	3,665				1,759	4,467	25	630	49,979	7	10		4
Mississippi	567,436	190,867	234,499	3,110	132	26,321	2	22,250	19,851	78	2,466	12,890	34,679	3,786	33	3,328	13,144
Missouri	118,145	65,455	12,690	7,085	55	97		1,418	7,982	137	30	2,728	6,589	634	10,895	1,076	1,268
Montana	5												5				
New Hampshire	29,278	5,451		5,174	12,424	187	2,942		35	439	2,021	588	15	2			
New Jersey	8,084	5,279	74	215	39	464	1,107	18	22		202	74	5	130	54	1	400
New Mexico	90												90				
New York	147,510	15,417	10	49,193	18,863	435	8,180	65	3,128	7,848	24,993	6,178	277	512	690	13	11,708
North Carolina	192,916	81,973	25,369	8,365	1,190	20,294	37,477	5,394	10	5,822	378	2,681	627	940	225	40	2,131
Ohio	154,574	65,485	1,296	26,064	133	3,862	6,214	111	7,419	3,114	13,929	5,544	538	3,619	14,944	998	1,304
Oklahoma	7,447	3,910	1,545	26				24	481	21		631	438	38	10	302	18

Oregon	5,350	220		1,728								1,076	1,143		9		1,180
Pennsylvania	216,997	85,936	451	40,363	4,750	3,373	35,710	136	849	3,589	32,235	4,280	84	2,963	227	83	1,968
Rhode Island	2,394	1,294		240	10		825					15		10			
South Carolina	122,077	12,812	52,470	3,861		16,963		24,259	1,036		310	7,642	2,325	283		116	
South Dakota	60												60				
Tennessee	540,631	257,856	83,450	15,680	1,717	69,039	29,047	3,006	16,861	5,551	7,363	17,123	5,561	18,476	4,657	2,948	2,236
Texas	173,078	77,487	67,174	9	45			13,304	588	53	3,364	5,639	629	1,573	53	154	3,006
Utah	372	225		3									144				
Vermont	56,311	3,088		21,956	16,889	190	264		548	3,739	7,716	1,345	509	5			62
Virginia	264,573	151,134	9,854	5,998	728	31,749	43,451	6,477	29	5,751	2,685	897	864	1,396	351	207	3,002
Washington	5,291			762	575							1	1,426				2,527
West Virginia	488,884	204,972	643	53,039	9,242	65,223	103,493	1,181	123	19,037	15,377	4,088	65	7,721	1,962	225	2,493
Wisconsin	563,328	22,326		196,071	193,378				56,245	74,293	1,258	13,890	5,759	3	2		98
Wyoming	41	1											40				
All other States [1]	5,550												150		5,400		
REGIONS																	
Northeastern	614,592	161,482	1,778	133,201	84,621	7,666	82,751	659	5,180	17,986	73,809	14,959	1,091	5,463	1,198	286	22,462
Lake	1,177,708	31,114		533,557	282,498	33			86,837	134,110	29,477	21,556	57,666	94	84	59	323
Central	1,703,292	772,435	109,628	145,634	11,650	164,380	146,864	7,746	55,898	35,507	75,590	41,959	16,491	46,520	51,983	10,939	10,068
North Carolina pine	579,566	245,919	87,693	18,224	1,918	69,006	80,928	36,130	1,075	11,573	3,373	11,220	3,816	2,619	576	363	5,133
Southern pine	2,419,879	863,722	871,625	23,834	272	109,642	2,446	190,724	59,412	786	12,195	92,291	82,615	30,880	1,729	15,871	61,835
Pacific (north)	10,647	220		2,490	575							1,077	2,569		9		3,707
Pacific (south)	451	121											2		1	1	326
Rocky Mountain (north)	831												831				
Rocky Mountain (south)	586	226		3									357				
Prairie	17,479	1,438		310	33				1,037	494		87	1,475	20	12,799	28	28

Bureau of the Census and the Forest Service.

[1] Kansas and Nebraska.

TABLE 176.—*Lumber: Distribution of softwood and hardwood, by producing States and regions, to States using, 1924*

State	Domestic distribution [1]	Distribution in thousand feet to—						
		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware
Alabama	1,766,095	[2] 404,921			2,043	164	8,121	5,109
Arizona	143,265		[2] 37,835	3,176	9,770	3,277		
Arkansas	1,464,721	40	176	[2] 280,344	8,832	1,901	5,502	288
California	1,750,435	159	7,962	1,863	[2]1,197,144	6,777	5,197	165
Colorado	31,354					[2] 29,767		
Connecticut	48,678						[2] 43,590	
Delaware	14,290							[2] 4,577
Florida	891,331	23,119					13,503	1,673
Georgia	1,128,340	7,769					24,385	8,919
Idaho	1,023,687		51	48	1,306	15,302	20,115	418
Illinois	33,192							
Indiana	190,040				1,573			
Iowa	9,877						101	
Kansas and Nebraska	5,034				19	2		
Kentucky	181,862	54			1,325	40	101	182
Louisiana	3,114,040	6,273	61	70,873	10,580	1,499	7,934	1,417
Maine	337,446						13,030	
Maryland	68,993							535
Massachusetts	122,150						16,877	
Michigan	718,487				799		198	
Minnesota	505,025	21					129	56
Mississippi	2,338,819	54,045	39	640	5,955	1,454	8,259	1,988
Missouri	181,457			487	1,272	402	150	34
Montana	322,808				70	11,895	7,130	
Nevada	7,125				801	40		
New Hampshire	233,078						2,769	
New Jersey	12,442							
New Mexico	103,657		337		149	27,082		
New York	232,991						1,901	3
North Carolina	1,064,683						14,272	12,072
Ohio	147,183	42			91			
Oklahoma	158,029			3,271	281	164	229	
Oregon	3,115,918	2,223	18,208	109	1,127,412	49,059	23,180	590
Pennsylvania	321,382						4,057	62
Rhode Island	3,759						1,102	
South Carolina	890,529						27,011	6,351
South Dakota	48,697							
Tennessee	634,491	198	36	33	4,556	104	991	3,582
Texas	1,450,388	421		3,849	2,042	840	574	532
Utah	7,378							
Vermont	117,325						3,110	
Virginia	674,709						5,841	4,877
Washington	5,132,398	394	505	922	1,098,546	111,148	23,510	1,661
West Virginia	553,091				177		8,438	1,781
Wisconsin	977,184	694	42	45	2,012	408	1,033	
Wyoming	14,430							
Total	32,292,293	500,373	65,252	365,660	3,476,755	261,265	292,340	55,659
REGION								
Northeastern	1,512,534						[3] 86,436	[3] 5,177
Lake	2,200,696	715	42	45	2,811	408	1,360	56
Central	1,921,316	294	36	520	8,994	546	9,680	5,579
North Carolina pine	2,629,921						47,124	23,300
Southern pine	12,311,763	[3] 496,588	276	[3] 358,977	29,733	6,022	68,507	18,713
Pacific (north)	8,248,316	2,617	18,713	1,031	2,225,958	160,207	46,690	2,251
Pacific (south)	1,757,560	159	7,962	1,863	[3]1,197,945	6,757	5,197	165
Rocky Mountain (north)	1,346,495		51	48	1,376	27,197	27,245	418
Rocky Mountain (south)	300,084		[3] 38,172	3,176	9,919	[3] 60,126		
Prairie	63,608				19	2	101	

[1] Domestic distribution is total distribution less foreign exports, or the sum of intrastate and interstate distribution.

[2] Intrastate distribution.

[3] Includes intrastate distribution of the State named above.

TABLE 776.—*Lumber: Distribution of softwood and hardwood, by producing States and regions, to States using, 1924*—Continued

State	Distribution in thousand feet to—								
	District of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky
Alabama	7,325	6,789	37,804		120,000	78,046	6,143		95,380
Arizona					22,807	8,374	6,396	7,608	
Arkansas	76		834		230,085	83,255	37,209	61,832	9,651
California	862	1,177	148		47,834	11,138	68,670	14,870	958
Colorado									
Connecticut									
Delaware									
Florida	2,271	[2]435,111	14,591		25,938	20,253	593	101	11,799
Georgia	6,277	126,332	[2]290,880		7,651	8,876	460		2,601
Idaho	688	61		[3]137,508	68,094	5,368	41,409	8,092	769
Illinois					[2]15,269	5,286	171		442
Indiana	2				12,960	[2]116,219	1,320	32	2,918
Iowa					2,470	23	[2]3,855		
Kansas and Nebraska					1,200	18	30	[2]191	17
Kentucky					9,127	20,538	567		[2]69,809
Louisiana	1,308	322	2,249	2,571	324,666	144,159	52,199	101,374	40,319
Maine			676		39				
Maryland						1,513			
Massachusetts									
Michigan			254		104,801	19,201	659	107	254
Minnesota					97,192	9,329	10,694	131	
Mississippi	8,827	187	4,748		341,615	169,414	10,477	7,715	137,379
Missouri					40,570	16,493	5,359	1,975	695
Montana	25			1,974	38,145	1,528	18,219	3,383	
Nevada					200		320	80	
New Hampshire									
New Jersey									
New Mexico					2,415		104	10,233	
New York									
North Carolina	5,915	18			1,880	2,242			8,551
Ohio					8,618	7,875	228		813
Oklahoma					20,104	5,924	3,951	8,880	199
Oregon	2,914	449	1	20,143	168,495	15,508	134,205	23,262	666
Pennsylvania	36				467	493			
Rhode Island									
South Carolina	10,879	5,148	7,445		1,012	1,765			811
South Dakota							6,948		
Tennessee	710	512	411		40,508	41,283	7,978	1,495	24,324
Texas	59		14		185,663	67,986	19,167	65,172	3,691
Utah									
Vermont									
Virginia	1,838				3,289	5,164	282		2,250
Washington	1,280	464	459	24,332	244,677	50,816	164,533	103,918	8,011
West Virginia	1,772				66,447	11,434	47		3,454
Wisconsin		23	213	29	200,029	25,071	6,441	442	461
Wyoming									
Total	53,064	576,593	360,727	186,557	2,454,267	954,592	608,634	420,893	426,213
REGION									
Northeastern	36		676		506	2,006			
Lake		23	467	29	402,022	53,601	17,794	680	715
Central	2,484	512	411		[3]193,499	[3]219,128	15,670	3,502	[3]102,446
North Carolina pine	18,632	5,166	7,445		6,181	9,171	282		11,612
Southern pine	26,143	[3]568,741	[3]351,120	2,571	1,255,722	577,913	130,199	245,074	301,019
Pacific (north)	4,194	913	460	44,475	413,172	66,324	208,738	127,180	8,677
Pacific (south)	862	1,177	148		48,034	11,138	68,990	14,950	958
Rocky Mountain (north)	713	61		[3]139,482	106,239	6,896	59,628	11,475	769
Rocky Mountain (south)					25,222	8,374	6,500	17,841	
Prairie					3,670	41	[3]10,833	[3]191	17

[2] Intrastate distribution. [3] Includes intrastate distribution of the State named above.

TABLE 776.—*Lumber: Distribution of softwood and hardwood, by producing States and regions, to States using, 1924*—Continued

State	Distribution in thousand feet to—								
	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana
Alabama	3,664	1,378	29,943	47,806	54,558	1,120	345	20,134	----
Arizona	77	----	----	----	3,176	----	----	19,284	----
Arkansas	11,906	6,750	5,880	28,466	165,150	3,816	14,799	136,776	----
California	964	762	3,348	11,792	27,835	38,957	243	43,304	130
Colorado	----	----	----	----	----	----	----	----	----
Connecticut	----	----	----	3,916	----	----	----	----	----
Delaware	----	----	385	----	----	----	----	----	----
Florida	806	10,351	33,829	36,009	6,988	----	73	1,440	----
Georgia	----	1,777	22,928	44,078	24,115	34	----	197	----
Idaho	----	594	2,770	25,026	77,352	68,266	----	10,567	27,187
Illinois	----	----	----	33	5,174	145	1,064	275	----
Indiana	----	----	504	2,517	22,064	536	----	370	----
Iowa	----	----	247	180	522	60	----	78	----
Kansas and Nebraska	18	----	12	144	1,440	48	----	360	----
Kentucky	50	----	535	2,624	23,416	336	----	64	----
Louisiana	[2] 549,228	948	4,135	25,947	168,318	4,688	14,973	182,129	----
Maine	----	[2] 156,899	174	103,890	59	----	----	----	39
Maryland	----	----	[2] 36,373	1,297	1,081	----	----	----	----
Massachusetts	----	----	----	[2] 100,008	----	----	----	----	----
Michigan	----	----	----	2,827	[2] 468,497	12,266	----	623	----
Minnesota	----	24	----	217	24,078	[2] 203,894	----	1,877	----
Mississippi	72,936	595	15,466	20,380	133,110	4,726	[2] 340,966	66,998	2,073
Missouri	103	----	164	----	11,021	1,962	----	[2] 77,776	----
Montana	----	70	23	1,744	10,045	27,723	----	4,956	[2] 122,074
Nevada	----	----	----	----	80	----	----	----	----
New Hampshire	----	20,181	----	71,763	----	----	----	----	----
New Jersey	----	----	----	----	----	----	----	----	----
New Mexico	----	240	----	----	961	----	----	7,083	----
New York	----	136	21	6,100	----	----	----	----	----
North Carolina	----	3,560	77,406	23,409	2,523	----	----	----	----
Ohio	----	----	1,129	445	7,486	526	----	291	----
Oklahoma	----	371	25	1,545	10,329	788	37	12,451	----
Oregon	474	2,827	1,996	25,113	71,387	91,288	----	24,982	4,580
Pennsylvania	----	105	443	4,470	594	----	----	----	----
Rhode Island	----	----	----	----	----	----	----	----	----
South Carolina	----	2,319	64,906	54,049	971	----	----	----	----
South Dakota	----	----	----	----	----	----	----	1,155	----
Tennessee	1,937	65	2,705	8,883	40,554	2,780	18	5,723	----
Texas	31,429	100	2,043	3,566	63,944	864	1,184	105,220	----
Utah	----	----	----	----	----	----	----	----	----
Vermont	----	607	54	34,116	197	----	----	----	----
Virginia	----	1,226	50,751	11,091	11,436	----	----	----	----
Washington	802	6,552	5,067	60,773	77,388	326,848	161	59,336	43,223
West Virginia	----	428	21,819	11,200	64,437	258	----	32	----
Wisconsin	27	22	207	1,896	137,366	38,283	104	1,916	36
Wyoming	----	----	----	----	----	----	----	----	----
Total	674,421	218,887	385,288	777,320	1,717,852	830,212	373,967	785,397	199,342
REGION									
Northeastern	----	[3] 177,928	[3] 37,450	[3] 325,560	1,931	----	----	----	39
Lake	27	46	207	4,940	[3] 629,941	[3] 254,443	104	4,416	36
Central	2,090	493	26,856	25,702	174,152	6,543	1,082	[3] 84,531	----
North Carolina pine	----	7,105	193,063	88,549	14,930	----	----	----	----
Southern pine	[3] 669,969	22,270	114,249	207,797	626,712	16,036	[3] 372,377	525,345	2,073
Pacific (north)	1,276	9,379	7,063	85,886	148,775	418,136	161	84,318	47,803
Pacific (south)	964	762	3,348	11,792	27,915	38,957	243	43,304	130
Rocky Mountain (north)	----	664	2,793	26,770	87,397	95,989	----	15,523	[3] 149,261
Rocky Mountain (south)	77	240	----	----	4,137	----	----	26,367	----
Prairie	18	----	259	324	1,962	108	----	1,593	----

[2] Intrastate distribution. [3] Includes intrastate distribution of the State named above.

TABLE 776.—*Lumber: Distribution of softwood and hardwood, by producing States and regions, to States using, 1924*—Continued

State	Distribution in thousand feet to—							
	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota
Alabama	33		11,307	49,104		101,276	30,307	3,192
Arizona	3,283				2,511	3,175		
Arkansas	11,567		2,806	1,201	40	38,245	4,601	
California	8,781	13,319	2,163	11,133	1,173	47,366	303	
Colorado	1,587							
Connecticut						301		
Delaware			385	8,039				
Florida	171		1,093	30,109		81,251	3,927	
Georgia			605	69,179		125,805	18,538	
Idaho	35,722	48	2,224	47,808		95,148		16,110
Illinois					[1]	124		
Indiana				1,137		10,826	2	
Iowa	102			223		977	88	
Kansas and Nebraska	[2] 50			252		1,106		
Kentucky				1,985		9,324	60	
Louisiana	18,066		1,463	36,895	5,324	142,161	15,053	
Maine			12,082	3,202		25,442		
Maryland				382		9,006		
Massachusetts			673			2,351		
Michigan	41					27,052	127	
Minnesota	21			2,502		21,504		1,327
Mississippi	2,853		796	17,531		105,716	30,561	459
Missouri	214			48		2,999	18	
Montana	11,226		194	1,299		10,949		6,482
Nevada		[2] 5,524						
New Hampshire			[2] 123,915	461		2,557		
New Jersey				[2] 11,546		896		
New Mexico	257				[2] 40,217	204		
New York			370	2,819		[2] 215,442		
North Carolina			2,551	75,839		159,408	[2] 380,979	
Ohio			105	2,177		10,764	1,420	824
Oklahoma	973		29			1,836		
Oregon	53,785	19,024	1,400	27,317	4,266	197,444	281	6,110
Pennsylvania			58	7,097		66,285		
Rhode Island								
South Carolina			2,023	101,319		158,022	56,049	
South Dakota	17,230							
Tennessee			174	15,792	203	53,713	30,087	
Texas	3,374		148	11,199	3,294	26,439	234	
Utah								
Vermont			3,315	195		3,302		
Virginia			1,092	21,088		50,751	1,044	
Washington	148,632	6,486	3,462	60,913	2,016	625,831	975	86,852
West Virginia			1,101	25,833		57,530	97	
Wisconsin	483	19	24	5,068	20	26,524		425
Wyoming								
Total	318,451	44,420	175,558	650,742	59,064	2,519,052	574,751	121,781
REGION								
Northeastern			[3] 140,798	[3] 33,741		[3] 325,582		
Lake	545	19	24	7,570	20	75,080	127	1,752
Central	214		1,380	46,972	203	145,280	31,684	824
North Carolina pine			5,666	198,246		368,181	[3] 438,072	
Southern pine	37,037		18,247	215,268	8,658	622,729	103,221	3,651
Pacific (north)	202,417	25,510	4,862	88,230	6,282	823,275	1,256	92,962
Pacific (south)	8,781	[3] 18,843	2,163	11,133	1,173	47,366	303	
Rocky Mountain (north)	46,948	48	2,418	49,107		106,097		22,592
Rocky Mountain (south)	5,127				[3] 42,728	3,379		
Prairie	[3] 17,382			475		2,083	88	

[2] Intrastate distribution.

[3] Includes intrastate distribution of the State named above.

TABLE 776.—*Lumber: Distribution of softwood and hardwood, by producing States and regions, to States using, 1924*—Continued

State	Distribution in thousand feet to—							
	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee
Alabama	239, 250	158	55	188, 437	12, 898	6, 115	3, 820	100, 710
Arizona	5, 302	1, 568		60				
Arkansas	89, 628	57, 695	169	51, 534	6, 685	1, 013	367	31, 320
California	40, 794	12, 213	1, 499	36, 847	1, 336	179		1, 745
Colorado								
Connecticut					871			
Delaware				260				
Florida	53, 535			48, 068	9, 384	4, 661		6, 027
Georgia	26, 815			166, 448	3, 647	15, 084		38, 074
Idaho	45, 687	1, 400	1, 399	73, 243	3, 374		19, 998	768
Illinois	2, 142			518				
Indiana	[1] 11, 201			2, 561	25			134
Iowa	159			476				
Kansas and Nebraska	78			30				
Kentucky	18, 812		212	6, 165	34			5, 506
Louisiana	210, 811	107, 357	142	94, 713	3, 621	254	299	53, 267
Maine	8, 795			3, 010	7, 746			
Maryland	591			4, 818				
Massachusetts					2, 188			
Michigan	14, 022		763	5, 685			161	224
Minnesota	36, 637	107		12, 171	24		181	89
Mississippi	276, 856	14, 087	405	153, 182	1, 282	5, 664	45	215, 645
Missouri	6, 943	34	82	1, 561	132			1, 371
Montana	1, 768	405		23, 858	265		3, 243	25
Nevada		80						
New Hampshire					5, 169			
New Jersey								
New Mexico	204	4, 571		204				
New York				5, 561	450			
North Carolina	15, 819			185, 247	301	1, 781		12, 003
Ohio	[2] 90, 910			8, 115				56
Oklahoma	6, 083	[2] 70, 463		4, 756	490		69	665
Oregon	40, 506	4, 783	[2] 685, 176	54, 879	8, 219	255	15, 750	1, 167
Pennsylvania	9, 051			[2] 226, 058	459			
Rhode Island					[2] 2, 657			
South Carolina	18, 837			154, 801	3, 996	[2] 117, 315		1, 554
South Dakota							[2] 23, 364	
Tennessee	97, 734	130	169	76, 848	645	1, 539	39	[2] 148, 445
Texas	53, 324	81, 302		15, 757	592	23	80	4, 359
Utah								
Vermont	13			1, 452	1, 995			
Virginia	29, 736			208, 914	2, 121			1, 285
Washington	49, 233	8, 115	64, 012	145, 961	10, 151	1, 749	94, 408	1, 716
West Virginia	56, 930			87, 664	1, 876	44		
Wisconsin	28, 567	52	29	14, 938	39	125	845	434
Wyoming								
Total	1, 587, 423	364, 520	754, 112	2, 054, 809	95, 652	155, 801	162, 669	621, 630
REGION								
Northeastern	18, 450			[3] 241, 149	[3] 21, 515			
Lake	79, 226	159	792	32, 794	63	125	1, 187	788
Central	[3] 284, 722	164	463	183, 462	2, 712	1, 583	39	[3] 155, 512
North Carolina pine	64, 392			548, 962	6, 413	[3] 119, 096		14, 842
Southern pine	956, 902	[3] 331, 062	771	722, 895	41, 599	32, 814	4, 680	445, 067
Pacific (north)	89, 739	12, 898	[3] 749, 188	200, 820	18, 370	2, 004	110, 158	2, 883
Pacific (south)	40, 794	12, 293	1, 499	36, 847	1, 336	179		1, 715
Rocky Mountain (north)	47, 455	1, 805	1, 399	87, 101	3, 639		23, 241	793
Rocky Mountain (south)	5, 506	6, 139		264				
Prairie	237			506			[3] 23, 364	

[2] Intrastate distribution. [3] Includes intrastate distribution of the State named above.

TABLE 776.—*Lumber: Distribution of softwood and hardwood, by producing States and regions, to States using, 1924*—Continued

State	Distribution in thousand feet to—							
	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming
Alabama	575	82	253	42,770	88	38,803	6,019	
Arizona	5,030						556	
Arkansas	47,481	36	4,515	1,361	24	3,510	17,309	46
California	24,414	1,895	889	2,047	312	1,665	39,788	8,375
Colorado								
Connecticut								
Delaware						65		
Florida			344	8,218		5,130	965	
Georgia			1,589	74,605		12,126	1,455	
Idaho	502	18,139	1,075	83	77,250	7,244	51,250	14,224
Illinois					27		2,522	
Indiana	45	40		496	15	12	2,531	
Iowa	1						315	
Kansas and Nebraska	19							
Kentucky	414			994	245	2,856	6,496	
Louisiana	648,655	231	3,134	4,560	508	22,742	26,457	157
Maine			2,363					
Maryland						13,397		
Massachusetts			53					
Michigan					254		59,672	
Minnesota				21		1,028	81,780	
Mississippi	793	295	1,834	48,839	1,165	37,295	13,828	
Missouri	70			162	128	5,280	3,932	20
Montana		2,187	168	25	1,755	1,144	11,162	7,649
Nevada								
New Hampshire			6,263					
New Jersey								
New Mexico	9,340	56						
New York			151			37		
North Carolina				71,497		7,373	37	
Ohio	77			249	56	4,176	680	
Oklahoma	1,743		169			194	1,184	26
Oregon	7,128	63,958	2,349	2,001	17,003	4,089	66,533	23,444
Pennsylvania			21			1,646		
Rhode Island								
South Carolina			425	77,778	696	15,047		
South Dakota								
Tennessee	286		179	8,669	130	1,615	8,708	
Texas	[2] 683,489		199			992	7,197	26
Utah		[2] 7,378						
Vermont			[2] 68,969					
Virginia			465	[2] 240,633		18,701	834	
Washington	10,540	44,497	4,567	4,889	[2] 1,199,481	10,260	78,648	53,678
West Virginia			860	2,389	162	[2] 125,064	1,767	
Wisconsin	612	29	71	560	71	10,600	[2] 470,684	115
Wyoming								[2] 14,430
Total	1,441,214	138,823	100,905	592,846	1,299,370	352,680	962,309	122,190
REGION								
Northeastern			[3] 77,820			15,734		
Lake	612	29	71	581	325	11,628	[3] 612,136	115
Central	892	40	1,039	12,959	763	[3] 139,003	26,636	20
North Carolina Pine			890	[3] 389,908	696	41,121	871	
Southern pine	[3] 1,382,736	644	12,037	180,353	1,785	120,792	74,414	255
Pacific (north)	17,668	108,455	6,916	6,890	[3] 1,216,484	14,349	145,181	77,122
Pacific (south)	24,414	1,895	889	2,047	312	1,665	39,788	8,375
Rocky Mountain (north)	502	20,326	1,243	108	79,005	8,388	62,412	21,873
Rocky Mountain (south)	14,370	[3] 7,434					556	[3] 14,430
Prairie	20						315	

Forest Service in cooperation with the Bureau of the Census.
The total of each State column is the lumber consumed in that State.

[2] Intrastate distribution.
[3] Includes intrastate distribution of the State named above.

TABLE 777.—*Lumber: Average prices, Douglas fir and southern yellow pine, f. o. b. mill, 1913–1925*

Period	Douglas fir		Southern yellow pine	
	Price Per M ft.	Price index, 1913=100	Price per M ft.	Price index, 1913=100
	Dollars		*Dollars*	
1913	11.44	100.0	14.77	100.0
1914	10.58	92.5	13.68	92.6
1915	9.80	85.5	13.02	88.2
1916	11.63	101.7	16.12	109.2
1917	16.93	147.9	21.13	143.1
1918	21.21	186.3	26.45	179.1
1919	25.83	225.9	33.94	229.8
1920	36.78	323.3	44.74	302.9
1921	19.98	174.7	21.18	143.4
1922	23.90	208.9	26.44	179.0
1923	28.93	252.9	30.81	208.6
1924	23.14	202.3	28.16	190.7
1925	21.63	189.1	28.31	191.7
1920				
January	41.98	366.0	52.21	353.5
February	46.31	404.8	57.94	392.3
March	46.66	407.0	61.60	417.1
April	43.15	377.1	57.53	389.5
May	40.21	351.2	54.65	370.0
June	36.05	315.1	40.05	271.2
July	33.69	294.5	41.34	279.9
August	32.86	287.2	43.42	294.0
September	31.29	273.4	41.09	278.2
October	27.57	241.0	34.44	233.2
November	24.05	210.0	26.67	180.6
December	22.61	197.6	25.88	175.2
1921				
January	20.20	177.6	21.35	144.6
February	18.85	164.7	21.18	143.4
March	17.59	153.2	20.92	141.7
April	16.87	147.3	20.36	137.9
May	16.42	143.2	20.82	140.9
June	15.90	143.5	22.32	151.1
July	15.28	133.4	20.75	140.5
August	14.98	130.8	20.40	138.1
September	14.86	129.8	20.61	139.5
October	15.97	139.6	21.59	146.2
November	17.07	149.2	23.14	156.7
December	17.75	155.1	21.77	147.4
1922				
January	18.73	163.7	22.68	153.6
February	22.75	198.9	22.61	153.1
March	22.40	195.8	22.27	151.5
April	20.44	178.7	22.78	154.2
May	21.10	184.4	24.86	168.2
June	23.24	203.1	29.07	196.8
1922				
July	24.18	211.3	27.19	184.9
August	24.83	217.0	28.47	192.8
September	27.13	237.2	31.24	211.5
October	27.97	244.5	31.71	214.7
November	25.82	225.7	30.61	207.2
December	26.49	231.6	30.61	207.2
1923				
January	28.54	249.5	30.42	205.9
February	29.42	257.2	32.81	222.1
March	30.22	264.2	33.71	228.2
April	31.46	275.0	33.38	226.0
May	31.02	271.2	33.85	229.2
June	30.36	265.4	32.40	219.4
July	27.68	241.9	31.14	210.8
August	26.97	235.7	30.82	208.6
September	27.18	237.5	27.53	186.4
October	27.24	238.1	28.77	194.7
November	28.97	253.2	27.83	188.4
December	26.94	235.5	26.56	179.8
1924				
January	28.30	247.4	29.40	199.1
February	26.33	230.2	30.16	204.1
March	24.69	215.8	29.83	202.0
April	24.39	213.2	29.14	197.3
May	22.40	195.8	27.55	186.5
June	22.99	201.0	27.36	185.2
July	21.93	191.7	25.91	175.4
August	22.42	196.0	27.77	188.0
September	21.59	188.6	29.46	199.5
October	21.10	184.5	26.71	180.8
November	21.48	187.7	25.81	174.7
December	21.82	190.7	30.13	204.0
1925				
January	22.52	196.9	29.43	199.3
February	22.19	194.0	29.66	200.8
March	21.99	192.2	29.02	196.5
April	21.60	188.8	28.29	191.5
May	21.70	189.7	27.07	183.3
June	21.24	185.7	26.58	180.0
July	21.18	185.1	27.55	186.5
August	22.25	194.5	28.56	193.4
September	21.39	187.0	30.50	206.5
October	21.28	196.0	28.17	190.7
November	21.33	186.5	27.14	183.8
December	21.05	184.0	29.01	196.4

Forest Service. Compiled from reports of actual sales.

TABLE 778.—*Crossties: Number purchased, by kinds of wood, 1905-1911, 1915, 1923*

Kind of wood	1905	1906	1907	1908	1909	1910	1911	1915	1923
Oak	34, 677, 304	45, 357, 874	61, 757, 000	48, 110, 000	57, 132, 000	68, 382, 000	59, 508, 000	49, 333, 881	62, 915, 237
Southern pine	[1] 18, 351, 037	18, 841, 210	34, 215, 000	21, 530, 000	21, 385, 000	26, 264, 000	24, 265, 000	14, 115, 681	22, 049, 467
Douglas fir	3, 633, 276	7, 248, 562	14, 525, 000	7, 988, 000	9, 067, 000	11, 629, 000	11, 253, 000	6, 950, 910	15, 316, 571
Cypress	3, 483, 746	5, 104, 496	6, 780, 000	3, 457, 000	4, 589, 000	5, 396, 000	5, 857, 000	4, 478, 612	5, 243, 835
Chestnut	4, 717, 604	6, 588, 975	7, 851, 000	8, 074, 000	6, 629, 000	7, 760, 000	7, 542, 000	4, 548, 352	4, 419, 782
Eastern larch (tamarack)	3, 060, 082	2, 576, 859	4, 562, 000	4, 025, 000	3, 311, 000	5, 163, 000	4, 138, 000	2, 606, 794	4, 220, 194
Cedar	6, 962, 827	7, 083, 442	8, 954, 000	8, 172, 000	6, 777, 000	7, 305, 000	8, 015, 000	5, 122, 103	3, 666, 228
Hemlock	1, 713, 090	2, 058, 198	2, 367, 000	3, 120, 000	2, 642, 000	3, 468, 000	3, 686, 000	859, 662	3, 477, 740
Gum			15, 000	262, 000	378, 000	1, 621, 000	1, 293, 000	485, 466	3, 050, 738
Maple	25, 500			151, 000	158, 000	773, 000	1, 189, 000	1, 069, 547	3, 035, 007
Redwood	590, 852	1, 248, 629	2, 032, 000	871, 000	2, 088, 000	2, 165, 000	1, 820, 000	563, 685	2, 492, 445
Beech	34, 227		52, 000	192, 000	195, 000	798, 000	1, 109, 000	1, 173, 490	2, 279, 221
Western yellow pine	[2]	3, 969, 605	5, 019, 000	3, 093, 000	6, 797, 000	4, 612, 000	2, 696, 000	1, 402, 836	1, 339, 507
Western larch	311, 120	[3]	[3]	[4]	[3]	[3]	[3]	1, 251, 304	[3]
Lodgepole pine	[2]	554, 738						1, 316, 819	949, 451
Birch	35, 500							465, 815	369, 154
All other	[4] 385, 062	[5] 2, 201, 454	5, 574, 000	3, 421, 000	2, 603, 000	2, 895, 000	2, 682, 000	1, 361, 694	1, 141, 480
Total	[6] 77, 981, 227	102, 834, 042	153, 703, 000	112, 466, 000	123, 751, 000	148, 231, 000	135, 053, 000	97, 106, 651	135, 976, 117

Forest Service and Census bulletins.

[1] Includes western pine, white pine, and lodgepole pine.
[2] Included with southern pine.
[3] Included with eastern larch.
[4] Includes 148,168 spruce crossties.
[5] Includes 373,387 white pine crossties.
[6] Steam railroads only.

TABLE 779.—*Veneers: Wood consumed in manufacture, by kinds, 1905–1911, 1919, 1921, 1923*

Kind of wood	Quantity (M feet log scale)									
	1905	1906	1907	1908	1909	1910	1911	1919	1921	1923
Domestic:										
Red gum	39,573	73,062	102,932	119,485	129,930	158,157	136,542	198,641	146,740	220,703
Yellow pine	12,688	45,581	32,450	42,342	48,143	40,324	35,400	67,071	42,195	65,100
Birch	12,643	16,823	18,079	17,769	24,643	27,633	24,208	54,079	37,070	43,936
Cottonwood	16,357	29,063	33,174	33,904	30,842	33,149	34,911	36,739	27,882	40,404
Tupelo	314	8,311	15,097	16,442	18,476	26,548	20,976	34,175	21,494	36,396
Yellow poplar	26,164	21,619	28,764	22,898	28,826	33,812	25,835	32,653	18,370	45,376
Douglas fir		370	90	333	1,111	2,006	6,262	10,604	16,518	55,123
Walnut	1,725	5,121	3,952	5,176	2,400	2,724	4,121	14,060	15,443	15,452
White oak	16,129	38,848	23,872	20,700	28,742	33,005	41,742	30,654	11,852	12,940
Maple	26,246	30,084	28,175	27,886	35,444	39,471	29,762	15,723	10,619	23,310
Elm	5,544	12,122	12,615	12,714	16,254	17,272	18,340	9,578	7,698	9,570
Basswood	11,376	15,659	13,561	11,609	13,715	11,003	11,602	11,134	5,977	8,771
Spruce		6,477	6,060	5,413	4,111	6,271	9,108	11,355	5,827	11,273
Red oak	4,955	8,109	4,629	4,449	6,661	9,769	9,297	3,161	4,407	12,334
Sycamore	576	4,530	3,554	5,279	4,404	2,548	2,316	1,802	3,675	4,182
Cypress				153	202		(1)	1,924	2,659	3,617
Cedar				104	101		(1)	(1)	2,394	11,137
Beech	1,400	5,324	4,367	8,515	9,950	10,550	12,023	3,922	2,140	5,210
Magnolia			90	315	252		(1)	268	994	1,439
Western pine				(1)	(1)		(1)	1,659	985	4,531
Ash	2,461	5,214	2,818	2,490	2,703	2,356	2,491	3,254	559	1,114
Chestnut	(1)		400	1,138	1,577	1,736	1,539	(1)	(1)	(2)
Redwood								(2)	439	(2)
Willow				(1)	60		(1)	(1)	207	1,322
All other	2,995	2,869	2,200	3,410	2,884	2,611	6,716	1,699	471	2,214
Imported:										
Mahogany			6,722	11,487	16,057	8,773	4,790	27,628	11,452	6,664
Spanish cedar			3,922	6,558	5,140	5,099	5,348	4,771	2,202	2,714
All other			1,000	1,973	3,353	2,662	1,557	27	119	961
Total	181,146	329,186	348,523	382,542	435,981	477,479	444,886	576,581	400,388	645,793

Bureau of the Census and the Forest Service.

[1] Included in "all other" domestic.

TABLE 780.—*Pulp wood: Consumption, by kinds of wood, by States, 1924*

[Quantities in cords of 128 cubic feet]

State	Number of establishments	Spruce		Hemlock	Yellow pine	Poplar		Balsam fir	Yellow poplar	White fir	Jack pine	Tamarack or larch	Gum	Basswood	All other	Slabs and other mill waste	Total
		Domestic	Imported			Domestic	Imported										
Maine	32	834,762	121,536	21,903	.....	102,238	45,509	81,951	.....	.....	.....	.....	.....	2,582	21,151	2,540	1,234,172
Wisconsin	43	264,706	68,351	525,990	.....	3,352	.....	92,579	.....	.....	65,774	47,779	.....	.....	24	2,729	1,071,284
New York	75	214,553	476,249	30,914	.....	28,265	74,015	76,705	.....	.....	.....	.....	.....	3,875	698	493	905,767
Pennsylvania	13	51,117	68,332	16,107	58,603	44,331	37,389	10,000	13,481	.....	.....	.....	20,233	.....	42,809	44,473	406,866
New Hampshire	8	219,926	28,979	1,500	.....	11	.....	5,350	.....	.....	.....	.....	.....	.....	.....	13,625	269,391
Virginia	7	27,305	28,855	38,270	117,148	8,340	.....	.....	34,177	.....	.....	.....	981	491	8,603	4,776	268,946
Michigan	12	70,234	57,992	58,091	.....	96	.....	35,011	.....	.....	9,045	12,201	.....	.....	167	.....	251,837
Minnesota	7	184,640	18,612	.....	.....	12,709	.....	5,709	.....	.....	956	14,679	.....	.....	992	295	238,592
Washington	6	41,361	412	112,553	.....	.....	.....	.....	.....	46,966	.....	.....	.....	.....	22,861	6,146	230,239
Louisiana	4	.....	.....	.....	106,593	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	106,593
West Virginia	4	35,040	.....	3,207	4,311	1,420	.....	.....	.....	.....	.....	.....	.....	.....	.....	15,821	59,799
Vermont	6	38,193	5,081	105	.....	349	.....	5,713	.....	.....	.....	.....	.....	.....	.....	.....	49,441
Massachusetts	3	40,215	2,236	.....	.....	5,456	464	.....	.....	.....	.....	.....	.....	.....	.....	.....	48,371
California and Oregon	6	36,409	.....	123,224	.....	.....	.....	.....	.....	46,330	.....	.....	.....	.....	5	.....	205,968
All other States [1]	13	11,721	13,888	33,495	141,306	11,469	.....	.....	80,379	.....	.....	.....	16,248	1,300	82,888	28,062	420,756
United States	239	2,079,182	890,523	965,359	427,961	218,036	157,368	313,018	128,037	93,296	75,775	74,659	37,462	8,248	180,198	118,960	5,768,082

Bureau of the Census.

[1] Delaware, 1 establishment; District of Columbia, 1; Georgia, 1; Maryland, 2; Mississippi, 1; North Carolina, 2; Ohio, 2; South Carolina, 1; Tennessee, 1; Texas, 1.

TABLE 781.—*Wood pulp: Production, by States, 1899, 1904, 1907–1911, 1914, 1916–1924*

[Quantities in tons of 2,000 pounds]

Year	California	Maine	Massachusetts	Michigan	Minnesota	New Hampshire	New York	North Carolina	Ohio	Oregon	Pennsylvania	Vermont	Virginia	Washington	West Virginia	Wisconsin	All other	Total
1899	----------	231,619	24,964	20,707	[1]	119,590	394,635	----------	13,805	1,154	85,433	64,951	6,117	----------	13,471	137,098	65,981	1,179,525
1904	7,500	456,921	28,445	38,612	22,479	173,888	606,014	----------	29,274	31,549	83,114	60,747	42,307	----------	28,695	241,537	70,686	1,921,768
1907	[1]	653,385	27,811	64,166	34,286	250,721	731,278	[1]	31,205	61,366	143,663	74,246	49,970	[1]	47,525	299,784	[2] 78,473	2,547,879
1908	[1]	490,365	20,626	54,288	32,572	181,338	566,658	36,024	23,253	64,852	124,377	107,067	35,443	[1]	46,986	268,461	[3] 66,637	2,118,947
1909	----------	603,852	25,804	64,369	37,295	212,599	686,323	53,926	26,977	83,692	135,525	59,356	48,641	[1]	48,797	324,509	[3] 79,741	[4] 2,491,406
1910	[1]	607,842	27,482	66,180	32,328	251,408	709,860	59,292	16,932	82,230	154,700	59,566	50,535	[1]	48,319	282,456	[3] 84,846	2,533,976
1911	[1]	623,242	30,522	70,168	33,562	245,974	773,607	62,967	14,496	90,842	147,624	67,311	47,272	[1]	55,043	334,363	[3] 89,141	2,686,134
1914	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	[5] 2,893,150
1916	188,782	852,276	19,247	99,601	138,799	341,365	787,397	35,348	[1]	[6]	216,964	73,813	68,595	[6]	58,913	451,651	[7] 102,250	3,435,001
1917	213,813	898,798	30,802	96,623	140,353	266,645	798,616	64,548	[1]	[6]	215,060	94,975	75,972	[6]	54,813	456,129	[8] 102,792	3,509,939
1918	168,654	872,779	30,674	101,036	121,444	229,774	749,176	54,169	[1]	[6]	195,451	83,548	69,895	[6]	48,261	473,890	[8] 115,110	3,313,861
1919	123,990	916,764	32,611	106,194	129,560	232,134	811,958	61,161	10,449	[6]	215,686	85,945	61,929	83,575	39,195	506,549	[8] 100,252	3,517,952
1920	148,877	942,730	34,687	132,776	170,216	239,634	830,045	64,773	12,549	[6]	238,013	96,666	86,320	95,465	35,821	548,528	[8] 144,604	3,821,704
1921	124,494	710,329	22,064	103,532	117,934	152,797	606,869	[1]	[1]	[6]	167,310	41,945	----------	95,161	27,623	488,501	[8] 217,042	2,875,601
1922	156,218	862,672	27,797	148,912	162,220	179,135	675,325	[1]	[1]	[6]	217,115	54,668	----------	102,349	19,051	564,696	[8] 351,486	3,521,644
1923	162,653	901,007	31,369	138,034	170,609	188,323	760,199	[1]	[1]	[6]	236,900	70,840	----------	136,943	23,072	577,993	[9] 390,730	3,788,672
1924	149,894	895,451	30,409	145,565	141,165	151,863	755,156	[1]	[1]	[6]	216,862	45,587	----------	159,539	27,703	609,081	[9] 394,991	3,723,266

Bureau of the Census and Forest Service.

[1] Included in "all other."
[2] Includes Delaware, Illinois, Indiana, Maryland, South Carolina, and Texas.
[3] Includes Delaware, Maryland, South Carolina, and Texas.
[4] 4,117 tons of unclassified pulp not included.
[5] Not reported by States. Total includes screenings.
[6] Included in California.
[7] Includes Delaware, Georgia, Louisiana, Maryland, Mississippi, South Carolina, and Texas.
[8] Includes Delaware, District of Columbia, Georgia, Louisiana, Maryland, Mississippi, South Carolina, Tennessee, and Texas.
[9] Includes Delaware, District of Columbia, Georgia, Louisiana, Maryland, Mississippi, North Carolina, Ohio, South Carolina, Tennessee, Texas.

TABLE 782.—*Wood pulp: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Austria			24, 272	100, 501				
Austria-Hungary	13, 366	205, 364						
Canada	9, 481	606, 203	34, 601	1, 636, 493	34, 458	1, 750, 718	48, 994	1, 563, 966
Finland	526	236, 881	1	549, 231	64	614, 375		952, 344
Germany	112, 660	384, 709	158, 765	162, 972	70, 008	246, 650	75, 135	337, 509
Norway	[1] 64, 911	1, 437, 078	176, 169	1, 334, 497	80, 073	1, 547, 596		1, 473, 056
Sweden	9, 515	1, 822, 023	7, 489	2, 586, 200	18, 152	2, 305, 812	11, 237	3, 114, 471
Switzerland	21, 059	13, 072	12, 601	25, 003	20, 115	29, 642	14, 465	23, 317
PRINCIPAL IMPORTING COUNTRIES								
Argentina	52, 016		31, 245		34, 000		35, 641	
Belgium	291, 254	80, 647	258, 140	7, 411	211, 171	4, 856	214, 099	4, 055
Denmark	110, 866		99, 689	302	125, 774		115, 292	
France	836, 899	1, 720	857, 586	119	831, 410	357	865, 399	707
Italy	179, 267	485	197, 253	1, 128	145, 998	3, 229	230, 095	3, 136
Japan	79, 260		148, 694	70	80, 015	6	134, 430	9
Netherlands			99, 826	670	81, 822	2, 183	101, 473	7, 822
Russia	56, 072	52, 735						
Spain	92, 770		144, 379		109, 128		[2] 53, 749	
United Kingdom	1, 891, 006		2, 067, 249	703	2, 534, 482	152	2, 742, 862	22
United States	1, 007, 239	24, 309	2, 517, 921	49, 000	2, 768, 183	46, 135	3, 050, 195	64, 196
Other countries	28, 796	73, 281	51, 107	127, 513	64, 540	134, 445	21, 127	538, 284
Total	4, 856, 963	4, 938, 507	6, 886, 987	6, 581, 813	7, 209, 393	6, 686, 156	7, 714, 193	8, 082, 894

Division of Statistical and Historical Research. Official sources. All kinds of pulp from wood are included, but no pulp made from other fibrous substances.

[1] Four-year average.
[2] Six months.

TABLE 783.—*Wood pulp, sulphite, domestic, unbleached: Average wholesale price per 100 pounds, New York, 1914–1925.*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average.[1]
	Dolls.	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*
1914	2. 125	2. 100	2. 050	2. 050	2. 050	2. 075	2. 075	2. 000	2. 375	2. 325	2. 325	2. 325	2. 156
1915	2. 125	2. 050	2. 150	2. 100	2. 100	2. 100	2. 075	2. 075	2. 075	2. 075	2. 150	2. 350	2. 119
1916	2. 575	2. 575	2. 850	3. 150	3. 625	3. 625	3. 625	3. 875	4. 250	5. 125	5. 125	5. 375	3. 815
1917	5. 375	5. 525	5. 400	5. 475	5. 475	5. 475	4. 975	4. 975	5. 375	3. 675	3. 225	2. 800	4. 813
1918	2. 800	2. 800	2. 913	3. 285	3. 594	4. 250	4. 250	4. 325	4. 638	4. 975	4. 500	3. 975	3. 837
1919	3. 688	3. 500	3. 500	3. 400	3. 375	3. 375	3. 375	3. 563	3. 625	3. 625	3. 625	3. 625	3. 522
1920	3. 625	3. 625	3. 825	5. 719	6. 938	7. 400	8. 250	8. 250	8. 250	8. 125	7. 750	6. 969	6. 579
Av. 1914–1920	3. 168	3. 168	3. 241	3. 597	3. 880	4. 043	4. 089	4. 152	4. 370	4. 275	4. 100	3. 917	3. 834
1921	6. 000	4. 656	4. 075	3. 344	3. 875	3. 625	3. 438	2. 625	2. 625	2. 625	2. 625	2. 625	3. 495
1922	2. 545	2. 525	2. 525	2. 525	2. 525	2. 525	2. 525	2. 525	2. 538	2. 635	2. 675	2. 675	2. 562
1923	2. 675	2. 675	2. 731	2. 888	3. 155	3. 225	3. 225	3. 200	3. 113	3. 105	2. 913	2. 706	2. 973
1924	2. 610	2. 625	2. 625	2. 625	2. 625	2. 600	2. 510	2. 525	2. 505	2. 506	2. 569	2. 625	2. 579
1925	2. 625	2. 625	2. 600	2. 600	2. 600	2. 660	2. 675	2. 675	2. 675	2. 725	2. 800	2. 900	2. 682
Av. 1921–1925	3. 291	3. 021	2. 911	2. 796	2. 956	2. 927	2. 875	2. 710	2. 691	2. 719	2. 716	2. 706	2. 858

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.

TABLE 784.—*Turpentine and rosin: Production from crude gum, by States, certain years, 1899–1923*

TURPENTINE

Year	Alabama	Florida	Georgia	Louisiana	Mississippi	North Carolina	South Carolina	Texas	Total
	Gallons	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*	*Gallons*
1899	3,703,900	11,838,900	15,289,550	215,200	3,213,350	1,994,150	1,478,450	-------	37,733,500
1904	3,108,118	12,872,869	9,542,316	245,300	3,160,371	993,665	764,412	-------	30,687,051
1907	3,544,300	15,572,700	10,119,500	1,134,100	2,232,500	916,400	586,950	74,350	34,180,800
1908	3,744,050	17,030,300	10,347,860	1,696,250	2,277,850	732,300	559,800	200,650	36,589,000
1909	2,840,212	13,809,785	8,056,752	1,231,254	1,588,786	781,197	460,186	220,752	28,988,954
1910	2,350,000	14,900,000	6,950,000	[1] 950,000	1,750,000	[2] 850,000	-------	-------	27,750,000
1914	2,721,777	12,363,232	6,228,041	2,252,118	2,385,054	182,378	201,221	647,160	26,980,981
1919	2,037,005	6,992,489	3,997,310	1,885,231	1,749,812	67,150	58,440	906,404	17,693,841
1921 [3]	2,827,782	8,298,850	7,034,333	2,910,163	2,660,834	22,186	278,080	346,626	24,378,854
1922 [3]	2,076,931	8,258,899	7,131,222	2,387,745	2,013,865	[2] 354,025	-------	171,450	22,394,137
1923 [3]	2,101,661	9,746,739	10,056,733	2,126,646	2,432,207	[4] 710,594	-------	-------	27,174,580

ROSIN

[Barrels of 500 lbs.]

Year	Alabama	Florida	Georgia	Louisiana	Mississippi	North Carolina	South Carolina	Texas	Total
	Barrels	*Barrels*	*Barrels*	*Barrels*	*Barrels*	*Barrels*	*Barrels*	*Barrels*	*Barrels*
1899	233,125	733,910	903,053	13,352	229,527	207,954	114,012	-------	2,434,933
1904	201,863	809,705	618,782	16,813	203,187	65,136	49,188	-------	1,964,674
1907	234,358	993,647	657,202	70,754	142,972	94,394	42,032	4,261	2,239,620
1908	250,269	1,081,984	673,713	109,650	155,514	73,868	40,390	16,050	2,401,438
1909	173,467	871,219	506,298	78,112	107,805	46,519	28,785	15,555	1,827,760
1910	173,000	1,018,000	437,000	[1] 46,000	119,000	[2] 63,000	-------	-------	1,906,000
1914	165,099	733,772	347,931	150,793	154,115	13,239	9,055	41,639	1,615,643
1919	120,839	486,432	234,690	112,900	115,984	4,086	3,550	60,179	1,138,660
1921 [3]	192,149	549,907	488,650	205,854	185,375	1,321	17,142	21,226	1,661,624
1922 [3]	133,702	556,355	467,349	166,912	139,159	[2] 23,701	-------	12,360	1,499,538
1923 [3]	151,641	660,009	627,305	145,223	162,231	[2] 43,678	-------	-------	1,790,087

Forest Service. Compiled from census publications. Calendar years except as otherwise noted. Additional production of turpentine distilled from wood in 1923 was 2,607,364 gallons. Additional production of rosin distilled from wood in 1923 was 200,778 barrels.

[1] Includes Texas.
[2] Includes South Carolina.
[3] Crop year beginning Apr. 1.
[4] Includes South Carolina and Texas.

TABLE. 785.—*Turpentine and rosin production in the United States, 1910–1925*

Year beginning Apr. 1—	Turpentine			Rosin		
	Gum	Wood	Total	Gum	Wood	Total
	Gallons	*Gallons*	*Gallons*	*Barrels, 500 lbs.*	*Barrels, 500 lbs.*	*Barrels. 500 lbs.*
1910 [1]	29,750,000	750,000	30,500,000	1,979,000	14,000	1,984,000
1911 [1]	31,900,000	1,000,000	32,900,000	2,125,000	23,000	2,148,000
1912 [1]	34,000,000	1,200,000	35,200,000	2,267,000	98,000	2,365,000
1913 [1]	32,000,000	1,250,000	33,250,000	2,132,000	130,000	2,262,000
1914 [2]	27,000,000	576,000	27,576,000	1,706,000	34,000	1,740,000
1915 [1]	23,500,000	700,000	24,200,000	1,565,000	40,000	1,605,000
1916 [1]	26,750,000	1,000,000	27,750,000	1,782,000	89,000	1,871,000
1917 [1]	23,700,000	1,800,000	25,500,000	1,531,000	160,000	1,691,000
1918 [1]	17,050,000	1,300,000	18,350,000	1,115,000	123,000	1,238,000
1919 [1]	18,300,000	1,535,000	19,835,000	1,237,000	158,000	1,395,000
1920 [3]	24,450,000	1,750,000	26,200,000	1,577,000	180,000	1,757,000
1921 [2]	24,378,000	442,000	24,820,000	1,662,000	53,000	1,715,000
1922 [2]	22,395,000	1,859,000	24,254,000	1,500,000	152,000	1,652,000
1923 [2]	27,175,000	2,607,000	29,782,000	1,790,000	201,000	1,991,000
1924 [4]	26,072,000	3,261,000	29,333,000	1,721,000	258,000	1,979,000
1925 [4]	23,923,000	[5] 3,123,000	27,046,000	1,579,000	289,000	1,868,000

Bureau of Chemistry.

[1] Trade estimates.
[2] Statistics compiled by Bureau of the Census.
[3] Statistics compiled by Bureau of Chemistry.
[4] Turpentine and Rosin Producers Association Statistics.
[5] Figures for wood turpentine in 1925 incomplete; do not include destructively distilled wood turpentine.

TABLE 786.—*Turpentine and rosin: Stocks, United States, March 31, 1919–1925*

TURPENTINE

Stocks	1919	1920	1921	1922	1923	1924	1925
	Casks, 50 gal.	*Casks, 50 gal.*	*Casks, 50 gal.*	*Casks, 50 gal.*	*Casks, 50 gal.*	*Casks, 50 gal.*	*Casks, 50 gal.*
Stocks at stills	24,050	28,394	30,429	20,732	12,194	22,441	[1] 9,151
Stocks at wood distillation plants	1,965	2,000	5,000	2,850	5,994	9,500	13,082
Stocks at primary southern ports	122,853	34,519	60,916	24,069	21,040	29,982	31,590
Stocks at eastern ports and distributing points	1,513	2,363	2,258	1,675	2,652	3,439	2,869
Stocks at central distributing points	5,771	14,558	10,364	8,195	10,881	14,232	12,044
Stocks at western ports and distributing points	2,751	2,634	848	900	2,225	8,426	4,742
Stocks at plants of consuming industries	28,500	26,340	30,528	26,717	16,670	18,692	25,300
Total	187,403	110,808	140,343	85,168	71,656	106,532	98,789

ROSIN

Stocks	1919	1920	1921	1922	1923	1924	1925
	Barrels, 500 lbs.	*Barrels, 500 lbs.*	*Barrels, 500 lbs.*	*Barrels, 500 lbs.*	*Barrels, 500 lbs.*	*Barrels, 500 lbs.*	*Barrels, 500 lbs.*
Stocks at stills	130,035	138,535	327,055	499,797	474,829	345,214	[1] 150,045
Stocks at wood distillation plants	12,304	23,000	40,000	19,143	25,063	50,000	45,462
Stocks at primary southern ports	326,933	211,238	432,237	347,730	278,414	307,543	225,188
Stocks at eastern ports and distributing points	81,440	23,417	11,063	11,359	8,078	14,060	8,134
Stocks at central distributing points	22,608	28,514	35,567	49,043	46,938	28,881	19,435
Stocks at western ports and distributing points	1,743	777	275	6,447	1,340	1,492	2,188
Stocks at plants of consuming industries	203,000	290,045	217,302	263,488	297,843	264,558	195,636
Total	778,063	715,526	1,063,499	1,199,007	1,132,505	1,011,748	646,088

Bureau of Chemistry. Compiled from reports of Bureau of Chemistry and Bureau of the Census.

[1] Turpentine and Rosin Producers Association estimates.

TABLE 787.—*Turpentine (spirits): Average wholesale price per gallon (in barrels), New York, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average.[1]
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	0.415	0.450	0.425	0.405	0.402	0.427	0.462	0.518	0.595	0.620	0.602	0.570	0.491
1910	.592	.632	.630	.630	.625	.592	.672	.715	.745	.705	.810	.785	.683
1911	.808	.872	.912	1.070	.772	.568	.560	.525	.548	.535	.492	.484	.679
1912	.549	.495	.500	.505	.530	.480	.479	.462	.425	.428	.420	.380	.470
1913	.425	.452	.455	.458	.408	.405	.398	.382	.422	.415	.452	.462	.428
Av. 1909–1913	.556	.580	.584	.614	.547	.494	.514	.520	.547	.553	.555	.536	.550
1914	.458	.510	.480	.488	.460	.472	.498	.480	.422	.478	.458	.477	.473
1915	.452	.445	.450	.472	.488	.435	.430	.420	.398	.415	.538	.570	.459
1916	.572	.578	.530	.552	.410	.435	.415	.468	.465	.462	.480	.525	.491
1917	.550	.540	.513	.488	.520	.448	.420	.428	.423	.485	.535	.505	.488
1918	.490	.474	.439	.426	.507	.636	.700	.622	.661	.658	.708	.716	.594
1919	.755	.709	.720	.773	.831	1.095	1.176	1.724	1.683	1.600	1.689	1.656	1.201
1920	1.885	1.985	2.238	2.575	2.475	1.868	1.599	1.624	1.473	1.230	1.098	.790	1.734
Av. 1914–1920	.737	.749	.767	.825	.813	.770	.748	.824	.789	.761	.799	.748	.777
1921	.724	.609	.584	.591	.717	.604	.613	.633	.718	.755	.810	.814	.681
1922	.909	.903	.869	.866	.944	1.110	1.207	1.194	1.298	1.530	1.578	1.403	1.150
1923	1.522	1.493	1.548	1.524	1.167	1.046	.943	.951	.971	1.007	.954	.938	1.171
1924	1.007	1.022	1.024	.965	.901	.844	.837	.893	.887	.880	.851	.837	.912
1925	.929	.938	.918	.958	1.060	.990	.969	1.013	1.121	1.128	1.116	1.017	1.013
Av. 1921–1925	1.018	.993	.989	.981	.958	.919	.914	.937	.999	1.060	1.062	1.002	.985

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.

TABLE 788.—*Turpentine (spirits): International trade, average 1909–1913, annual 1922–1924*

[Thousand gallons—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
France	48	2,594	18	2,370	100	2,376	77	2,704
Greece	2	368	-------	288	-------	297	-------	455
Russia	273	2,322	-------	-------	-------	-------	-------	-------
Spain	-------	1,156	6	1,297	32	835	[1] 5	[1] 780
Sweden	134	62	119	300	147	203	149	390
United States	-------	17,868	-------	9,369	-------	11,478	-------	11,510
PRINCIPAL IMPORTING COUNTRIES								
Argentina	554	-------	427	-------	617	-------	393	-------
Australia	564	-------	[2] 635	(2,3)	[2] 855	(2,3)	-------	-------
Austria	-------	-------	-------	-------	123	125	261	88
Austria-Hungary	2,581	53	-------	-------	-------	-------	-------	-------
Belgium	1,932	1,144	959	174	763	34	722	65
Brazil	[4] 311	-------	399	-------	368	-------	-------	-------
Canada	1,175	-------	1,267	1	1,082	5	1,173	8
Chile	198	-------	97	-------	189	-------	-------	-------
Czechoslovakia	-------	-------	542	14	766	86	744	-------
Denmark	117	(3)	176	(3)	180	(3)	191	(3)
Germany	9,368	460	2,036	127	1,518	145	2,612	142
Italy	940	3	852	16	1,044	12	1,023	24
Netherlands	3,998	2,750	1,225	34	1,227	28	1,160	75
New Zealand	178	-------	76	-------	158	-------	102	-------
Switzerland	466	9	571	-------	648	-------	659	-------
United Kingdom	7,782	-------	6,079	165	6,974	168	6,561	191
Union of South Africa	151	-------	138	-------	253	-------	53	-------
Other countries	428	154	512	264	1,044	290	1,126	800
Total	31,200	28,943	16,134	14,419	18,088	16,082	17,011	17,232

Division of Statistical and Historical Research. Official sources. "Spirits of turpentine" includes only "spirits" or "oil" of turpentine and, for Russia, skipidar; it excludes crude turpentine pitch, and for Russia, turpentine.

[1] Six months. [2] Year beginning July 1. [3] Less than 500 gallons. [4] Four-year average.

TABLE 789.—*Rosin, common to good, strained: Average wholesale price per barrel, New York, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average[1]
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	3.275	3.325	3.175	3.275	3.300	3.250	3.000	3.250	3.500	4.250	4.225	4.175	3.500
1910	4.200	4.400	4.550	4.650	4.500	4.500	5.300	6.050	6.100	6.400	6.100	6.050	5.233
1911	6.200	6.750	7.450	8.500	7.750	6.750	6.250	5.400	6.250	6.400	6.600	6.300	6.717
1912	7.150	6.650	6.700	6.900	6.500	6.550	6.450	6.475	6.850	6.600	6.500	6.375	6.642
1913	5.950	5.750	6.500	5.500	4.750	4.800	4.000	4.250	4.200	4.000	4.000	4.100	4.817
Av. 1909–1913	5.355	5.375	5.675	5.765	5.360	5.170	5.000	5.085	5.389	5.530	5.485	5.400	5.382
1914	4.000	4.400	4.250	4.150	4.100	4.050	4.200	3.950	3.750	3.850	3.750	3.750	4.017
1915	3.600	3.500	3.400	3.400	3.650	3.200	3.450	3.250	3.250	3.700	4.800	6.000	3.737
1916	5.950	5.750	5.400	5.200	4.300	5.100	5.500	6.650	6.150	6.250	6.350	6.800	5.850
1917	6.600	6.550	6.275	6.000	6.200	6.300	6.000	5.850	6.000	6.800	6.850	7.175	6.392
1918	7.120	6.969	6.588	6.070	7.725	9.381	11.000	11.525	13.644	15.155	15.956	14.940	10.584
1919	14.250	13.463	12.325	12.185	12.050	14.275	16.450	17.850	17.330	17.125	17.475	17.050	17.201
1920	18.588	18.125	18.080	18.500	19.750	16.700	12.413	13.900	13.713	12.825	11.830	9.063	15.278
Av. 1914–1920	8.587	8.394	8.045	7.929	8.268	8.515	8.430	8.996	9.120	9.386	9.602	9.257	8.720
1921	8.813	7.500	5.850	4.950	5.260	5.050	5.050	4.970	5.425	5.600	5.680	5.325	5.763
1922	5.353	5.325	5.188	5.213	5.300	5.350	5.538	5.900	6.356	6.865	6.581	6.219	5.781
1923	6.115	5.969	6.150	6.225	6.070	5.825	5.820	5.750	5.850	5.840	5.775	5.669	5.925
1924	5.770	5.800	5.725	5.780	5.588	5.525	5.590	5.813	6.115	7.163	7.600	7.600	6.172
1925	8.238	8.275	8.090	7.950	8.913	8.910	9.975	10.888	14.185	15.875	15.938	14.070	10.971
Av. 1921–1925	6.858	6.573	6.201	6.024	6.226	6.132	6.395	6.682	7.586	8.269	8.315	7.777	6.917

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.

TABLE 790.—*Rosin: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
China				2,179		1,131		1,474
France	2,432	118,286	908	120,519	562	106,235	2,667	93,078
Greece	35	10,423		9,359		7,656		16,661
Spain	1,827	20,073	290	24,213	439	20,958	[1] 213	[1] 12,366
United States		655,520		399,587		602,344		726,194
PRINCIPAL IMPORTING COUNTRIES								
Argentina	32,719	[2] 45	33,652		51,140		62,389	
Australia	13,724	1,255	[3] 14,401		[3] 14,494			
Austria			5,572	903	6,296	1,706	9,966	1,330
Austria-Hungary	75,705	2,205						
Belgium	47,163	32,830	31,250	13,724	17,365	3,974	19,540	1,800
Brazil	36,905		31,682		19,066			
British India	6,171		2,020		2,808		3,365	
Canada	25,506		27,210		30,868		27,767	
Chile	7,410		4,167		4,319			
Cuba	4,123		3,692		4,726			
Czechoslovakia			14,872	60	21,984	83	32,541	
Denmark	3,235		4,149	1	4,645	1	5,221	
Dutch East Indies	15,039		16,345		22,578	39	[4] 19,184	[4] 13
Finland	6,027	144	5,756	872	4,972	392	3,607	1,493
Germany	233,100	50,110	92,180	1,105	72,319	2,648	93,473	3,470
Italy	34,171	33	41,637	170	49,863	263	61,891	541
Japan	10,073		21,687		42,169		41,174	
Netherlands	73,991	59,366	9,952	75	12,002	84	14,561	434
Norway	6,732		4,515	117	5,523	123	5,058	
Rumania	5,004	[5] 1			10,159		7,819	
Russia	68,429							
Sweden	3,896	12	10,775	96	14,304	12	14,296	13
Switzerland	4,983	[6] 8	4,993	5	7,353		6,430	
United Kingdom	166,075		136,915		153,837		172,221	
Other countries	15,965	70	16,505	135	16,515	103	22,209	227
Total	900,441	950,381	535,125	573,120	590,306	747,752	625,592	859,094

Division of Statistical and Historical Research. Official sources. For rosin only the resinous substance known as "rosin" in the exports of the United States is taken.

[1] Six months.
[2] Four-year average.
[3] Year beginning July 1.
[4] Java and Madura only.
[5] One year only.
[6] Three-year average.

TABLE 791.—*Wood distillation: Quantity distilled, by States, 1899, 1904–1911, 1914, 1919, 1921, 1923*

State	1899	1904	1905	1906	1907	1908	1909
HARDWOOD CONSUMPTION	Cords	Cords	Cords	Cords	Cords	Cords	Cords
Michigan			239,992	541,119	602,216	310,910	457,362
New York			119,937	91,380	127,150	68,071	139,041
Pennsylvania			212,519	390,752	358,489	302,703	368,126
Wisconsin			(1)	(1)	(1)	(1)	(1)
All other			57,322	121,645	131,916	196,948	185,318
SOFTWOOD CONSUMPTION							
Alabama				3,236	(2)	(2)	46,478
Florida				10,100	11,224	15,480	25,318
Georgia			8,925	14,986	9,409	18,513	21,400
Louisiana			(2)	(2)	(2)	(2)	(2)
North Carolina			4,624	16,332	28,278	5,221	6,059
South Carolina			1,970	2,972	(2)	(2)	5,721
All other			1,450	2,608	[3] 13,438	[3] 59,998	10,334
Total	490,939	1,049,503	676,739	1,195,130	1,282,120	977,844	1,265,157

[1] Included in "all other hardwood."
[2] Included in "all other softwood."
[3] Includes mill waste and sawdust not shown by States.

TABLE 791.—*Wood distillation: Quantity distilled, by States, 1899, 1904–1911, 1914, 1919, 1921, 1923*—Continued

State	1910	1911	1914	1919	1921	1923
HARDWOOD CONSUMPTION						
	Cords	*Cords*	*Cords*	*Cords*	*Cords*	*Cords*
Michigan	518,342	396,916		648,910	142,251	434,163
New York	129,161	132,400		104,493	55,371	98,049
Pennsylvania	398,616	364,539		281,320	175,235	336,817
Wisconsin	(1)	(1)		60,544	22,846	55,293
All other	211,878	165,100		91,210	37,520	106,015
SOFTWOOD CONSUMPTION						
Alabama	64,963	(2)		41,416	2,320	34,117
Florida	52,144	41,499		86,065	10,447	97,865
Georgia	25,412	29,824		103,964	23,265	84,633
Louisiana	7,818	(2)		18,005	9,197	77,317
North Carolina	6,713	5,474		5,955	2,353	7,496
South Carolina	30,954	38,136				
All other	4,438	47,471		793	1,698	38,355
Total	1,450,439	1,221,359	1,042,517	1,442,675	482,503	1,370,120

Forest Service. Compiled from the Bureau of the Census bulletins.

[1] Included in "all other hardwood." [2] Included in "all other softwood."

TABLE 792.—*Rubber, Para Island, fine: Average wholesale price per pound, New York, 1909–1925*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Dols.	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*	*Dols.*
1909	1.155	1.155	1.215	1.185	1.232	1.335	1.430	1.845	1.710	1.985	1.810	1.715	1.481
1910	1.695	1.790	1.995	2.600	2.600	2.295	2.250	2.070	1.800	1.370	1.190	1.235	1.908
1911	1.150	1.180	1.580	1.360	1.130	.940	.925	1.040	1.080	1.050	.940	.950	1.119
1912	.975	1.060	1.085	1.145	1.100	1.045	1.010	1.045	1.135	1.065	.975	.980	1.052
1913	1.065	.975	.915	.835	.780	.835	.815	.730	.760	.715	.675	.645	.807
Av. 1909–1913	1.196	1.232	1.358	1.425	1.368	1.290	1.286	1.346	1.297	1.237	1.118	1.105	1.272
1914	.605	.655	.695	.695	.725	.610	.575	.580	.600	.525	.495	.640	.616
1915	.710	.550	.535	.535	.545	.545	.535	.522	.500	.508	.548	.685	.557
1916	.885	.685	.705	.695	.660	.590	.590	.585	.582	.665	.670	.720	.669
1917	.700	.680	.750	.740	.725	.725	.705	.613	.595	.568	.505	.468	.648
1918	.501	.479	.483	.516	.560	.590	.590	.590	.590	.572	.570	.548	.549
1919	.525	.491	.482	.478	.474	.474	.475	.475	.480	.483	.483	.479	.485
1920	.463	.432	.412	.411	.404	.385	.353	.303	.253	.217	.192	.180	.333
Av. 1914–1920	.627	.567	.580	.581	.586	.560	.546	.524	.514	.505	.495	.526	.551
1921	.173	.168	.180	.178	.179	.164	.164	.165	.174	.210	.215	.211	.182
1922	.193	.163	.161	.171	.176	.169	.172	.176	.171	.196	.219	.223	.183
1923	.272	.307	.290	.274	.249	.250	.239	.238	.246	.215	.204	.203	.248
1924	.199	.191	.171	.168	.173	.164	.170	.211	.227	.262	.286	.315	.212
1925	.318	.307	.346	.340	.420	.619	.825	.663	.590	.773	.853	.764	.569
Av. 1921–1925	.231	.227	.230	.226	.239	.273	.314	.291	.282	.331	.355	.348	.279

Division of Statistical and Historical Research. Compiled from Bureau of Labor Statistics reports.

[1] Derived from the figures upon which the monthly averages are based.

TABLE 793.—*Rubber: International trade, average 1909–1913, annual 1922–1924*

[Thousand pounds—i. e., 000 omitted]

Country	Year ended Dec. 31							
	Average 1909–1913		1922		1923		1924 preliminary	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
PRINCIPAL EXPORTING COUNTRIES								
Angola		5,620		174		198		
Belgian Congo		7,735		2,443		[1] 1,413		[1] 4,300
Bolivia		8,395		[1] 6,786		[1] 6,568		[1] 6,237
Brazil		84,998	[1] 58	43,180		38,980		47,549
British India		[2] 1,504	1	10,875	13	14,371	129	17,241
British Malaya	[1] 53,472	[1] 85,435	79,788	553,380	157,481	564,765	241,928	584,123
British North Borneo [3]		31		8,399		9,571		10,417
Ceylon	[2] 1,299	10,953	5,475	104,595	5,645	83,851	6,862	83,040
Dutch East Indies	[2] 1	7,679		229,237		301,849		[4] 95,078
Ecuador		1,040				1,297		72
French Congo	[5]	3,797		[1] 1,536		[1] 2,091		
French Guinea	[1] 241	3,937	[1] 43	[1] 666	[1] 31	[1] 2,631		[1] 2,527
French Indo-China	1	398	[1] 2	[1] 10,192	[1] 4	[1] 12,558	[1] 7	[1] 14,982
Gold Coast		2,382		[1] 16		[1] 313		[1] 272
Kamerun		6,209		[1] 1,236		[1] 1,677		[1] 2,134
Nigeria		3,054		278		478		[1] 1,340
Peru		5,030		1,331		4		198
Sarawak Territory [3]	[6] 580	11,674		9,405		8,209		14,385
Senegal	[2] 4	1,087		[1] 21	[4, 5]	[1] 45	[1] 21	[1] 19
Venezuela		772	65	9	76		[8] 40	
PRINCIPAL IMPORTING COUNTRIES								
Austria			5,430	407	5,396	969	5,410	646
Austria-Hungary	6,696	1,619						
Belgium	25,881	20,749	5,316	4,932	7,411	2,518	7,973	1,940
Canada	3,945		21,076		29,696	[9]	32,300	
Czechoslovakia			[1] 655	[1] 52	[1] 603	[1] 27	4,675	[1] 13
Denmark	250		194		794	[1] 10	1,062	[1] 3
France	32,703	21,615	59,746	5,198	71,840	10,482	90,749	13,248
Germany	42,004	9,844	63,486	1,779	43,538	2,056	52,592	1,684
Hungary			791	5	985	3	[1] 1,624	[1] 35
Italy	5,281	225	14,435	32	19,244	226	19,878	248
Japan	1,417		37,142		38,793		44,281	
Netherlands	16,822	7,172	19,628	28,153	17,791	16,016	12,864	14,672
Russia	19,131		[1] 5,345		[1] 5,581		[1] 4,548	
Spain	4,097		5,103		4,870		[8] 3,985	
Sweden	1,695	1	2,774	125	3,078	141	3,917	123
Switzerland	291	795	450	210	552	260	646	359
United Kingdom	43,141		26,262		28,449		[9]—25,872	
United States	100,280		674,410		692,483		734,845	
Other countries	5,799	72,353	3,381	3,091	4,387	4,213	6,815	3,956
Total	356,582	386,501	1,031,953	1,029,745	1,138,539	1,087,790	1,250,680	920,841

Division of Statistical and Historical Research. Official sources except where otherwise noted. Figures for rubber include "India rubber", so-called, caoutchouc, caucho, jebe (Peru), hule (Mexico), borracha, assaconduba, mangabeira, mangaba, sorva and seringa (Brazil), gomelastiek (Dutch East Indies), caura, ser nambi (Venezuela).

[1] International Institute of Agriculture.
[2] Three-year average.
[3] One year only.
[4] Java and Madura only.
[5] Less than 500 pounds.
[6] Four-year average.
[7] Two-year average.
[8] Six months.
[9] Reexports in excess of imports.

METEOROLOGICAL STATISTICS

TABLE 794.—*Temperature: Monthly normal [1] and mean temperature at selected points in the United States, 1914–1925*

Station	Normal for Jan.	January monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me.	12.8	9.7	16.4	15.1	12.4	6.4	15.6	4.6	15.2	11.0	8.7	13.9	7.0
Boston, Mass.	27.9	28.7	33.0	33.0	30.2	21.0	33.2	21.0	32.1	27.2	27.0	31.9	27.2
Buffalo, N. Y.	24.6	27.9	25.3	32.0	24.4	14.1	31.0	15.6	29.1	23.2	25.4	24.4	21.7
Canton, N. Y.	16.3	13.0	19.4	25.0	14.4	7.5	22.0	4.1	20.9	12.8	10.8	18.0	8.2
Trenton, N. J.	30.5	32.2	34.0	35.5	32.4	20.4	34.8	23.2	33.4	28.4	31.0	32.6	29.4
Pittsburgh, Pa.	30.7	34.4	30.6	37.5	31.6	18.6	34.4	24.4	34.6	28.8	33.4	28.7	29.6
Scranton, Pa.	26.6	28.2	30.2	33.6	28.4	17.4	31.7	18.7	29.4	24.1	26.8	29.0	24.1
Cincinnati, Ohio	30.3	37.8	31.4	37.6	32.4	16.3	35.2	25.4	35.9	29.2	36.5	26.8	30.8
Cleveland, Ohio	26.5	32.0	26.0	34.8	27.3	15.0	32.6	19.0	32.0	25.6	30.2	24.0	25.6
Evansville, Ind.	33.5	39.6	31.5	38.6	36.3	19.4	38.5	30.4	39.4	32.3	40.8	28.9	34.6
Indianapolis, Ind.	28.4	34.6	26.8	33.8	30.6	14.6	34.0	22.2	34.3	26.7	34.6	23.5	29.0
Chicago, Ill.	25.1	32.4	24.1	28.8	24.2	13.3	31.0	18.5	32.4	24.8	30.8	19.8	25.9
Peoria, Ill.	23.1	32.2	21.0	27.2	24.4	10.4	29.2	13.6	32.2	23.8	31.8	19.0	23.5
Grand Rapids, Mich.	24.5	29.0	23.3	28.7	22.8	12.5	30.0	16.0	30.5	23.6	26.2	20.3	22.2
Marquette, Mich.	16.3	21.8	16.3	17.4	12.6	8.8	24.6	9.2	22.4	17.2	19.2	10.5	17.9
Madison, Wis.	16.7	25.9	15.4	20.2	13.8	5.6	24.1	10.0	25.4	17.0	22.0	11.4	18.4
Duluth, Minn.	7.9	15.4	9.2	5.1	3.1	0.8	17.8	3.0	16.6	8.6	13.0	0.8	9.6
St. Paul, Minn.	12.6	21.2	12.4	10.4	6.8	3.7	21.8	7.0	21.4	12.8	17.6	7.1	13.6
Des Moines, Iowa	20.1	29.6	20.8	20.8	20.0	11.8	29.8	18.4	30.4	22.6	29.3	17.0	22.3
Dubuque, Iowa	19.1	28.2	17.2	21.6	16.6	8.2	25.9	13.4	28.5	19.7	25.8	13.6	21.6
St. Louis, Mo.	31.1	39.7	29.6	34.1	34.8	18.8	37.8	28.4	39.2	30.2	39.5	26.6	33.0
Springfield, Mo.	33.5	39.5	32.2	33.8	36.0	18.4	36.6	31.4	39.8	31.8	42.7	28.4	33.2
Bismarck, N. Dak.	7.8	17.9	9.2	−5.0	6.3	1.4	24.4	7.4	18.8	8.4	12.3	6.2	12.0
Devils Lake, N. Dak.	0.3	9.6	2.6	−8.2	−3.0	−4.6	14.4	−2.3	10.5	4.1	6.0	−0.6	6.4
Pierre, S. Dak.	16.0	25.5	15.6	2.4	14.8	8.0	29.7	19.0	27.9	13.6	24.9	11.8	15.6
North Platte, Nebr.	22.9	31.0	20.1	15.0	22.8	14.8	28.6	28.9	30.1	21.6	32.9	21.4	20.2
Omaha, Nebr.	21.9	30.6	21.6	17.2	22.6	12.7	31.9	23.2	32.0	23.6	32.5	17.4	22.5
Concordia, Kans.	26.4	36.2	26.5	21.5	28.8	15.3	33.6	30.2	36.2	27.0	37.2	20.8	23.0
Dodge City, Kans.	29.0	39.4	30.6	23.8	31.3	21.1	31.0	32.8	36.4	28.6	39.0	28.1	28.8
Iola, Kans.	27.6	37.2	30.4	28.5	33.7	17.6	33.6	30.5	38.4	30.0	40.6	27.1	28.4
Washington, D. C.	33.4	38.6	35.6	39.8	35.0	23.7	38.1	28.7	36.6	32.0	36.8	35.0	32.9
Lynchburg, Va.	37.5	42.0	38.4	43.2	39.4	27.0	41.0	34.4	39.0	35.1	39.8	36.2	37.4
Norfolk, Va.	40.6	44.1	42.2	47.0	42.8	31.6	43.8	37.4	43.6	39.2	43.9	42.2	41.0
Parkersburg, W. Va.	32.5	37.6	31.9	38.8	33.2	20.3	35.6	28.4	37.4	31.8	37.0	30.2	33.0
Charlotte, N. C.	41.2	43.8	41.6	47.6	46.1	32.4	45.0	39.8	42.2	40.2	44.6	40.0	40.5
Charleston, S. C.	49.9	50.0	49.7	55.9	54.6	42.4	51.1	51.0	51.8	47.4	53.7	48.9	50.6
Atlanta, Ga.	42.6	45.0	41.9	48.8	47.9	34.8	43.8	42.7	45.9	43.0	48.2	38.2	43.1
Thomasville, Ga.	51.0	52.2	51.0	60.1	58.2	46.0	51.4	53.9	55.6	51.6	56.8	49.4	55.9
Jacksonville, Fla.	55.4	55.2	-----	62.4	61.2	50.0	55.3	57.3	58.0	53.4	59.2	53.7	58.6
Miami, Fla.	67.3	64.4	67.0	72.0	69.8	62.8	65.1	68.6	67.8	67.6	68.8	69.5	73.0
Memphis, Tenn.	40.9	46.1	39.4	46.2	44.7	27.6	43.0	39.3	47.2	40.0	49.2	36.4	41.6
Nashville, Tenn.	38.6	42.6	36.2	44.6	41.8	26.4	40.1	38.6	43.2	38.9	45.3	33.4	39.8
Birmingham, Ala.	45.1	47.4	42.8	51.2	49.4	36.6	43.9	46.2	49.3	45.9	51.8	40.0	46.6
Mobile, Ala.	51.5	53.6	49.6	57.2	57.2	45.7	49.6	53.6	56.0	53.0	58.4	47.4	53.1
New Orleans, La.	54.2	56.6	51.8	61.3	59.8	48.1	51.2	56.0	59.2	56.0	61.0	49.4	55.3
Shreveport, La.	47.0	52.6	45.2	51.6	50.5	38.2	46.0	46.2	53.4	44.6	55.9	42.8	46.1
Amarillo, Tex.	35.3	45.4	34.0	35.2	36.6	30.7	28.7	35.2	41.0	34.0	46.2	35.1	36.6
Brownsville, Tex.	59.8	62.6	58.8	67.2	62.6	58.0	56.0	58.2	65.8	57.8	67.6	55.2	58.8
El Paso, Tex.	45.0	48.4	41.2	50.4	44.8	41.5	40.7	44.5	48.6	43.5	49.1	42.2	41.8
Fort Worth, Tex.	45.4	53.0	45.4	46.2	48.6	36.8	45.8	43.0	51.4	43.0	55.5	41.4	43.4
Galveston, Tex.	53.8	57.0	51.2	58.4	56.6	47.8	50.6	54.0	58.2	52.0	62.0	50.4	51.7
San Antonio, Tex.	52.3	56.4	50.6	56.2	55.2	47.0	49.7	49.4	58.4	49.4	62.0	47.4	50.5
Oklahoma City, Okla.	36.4	45.4	37.1	33.4	39.0	28.0	38.4	35.2	43.0	35.2	47.8	34.0	34.2
Little Rock, Ark.	41.4	47.0	40.2	45.2	45.0	28.6	43.2	40.8	47.2	39.8	49.7	36.9	41.8
Havre, Mont.	12.9	18.8	11.4	−13.3	11.2	10.8	34.1	13.0	26.0	13.8	19.4	11.0	17.0
Kalispell, Mont.	20.4	29.2	20.2	4.4	20.1	21.8	26.8	24.2	26.1	16.9	25.4	17.9	27.3
Cheyenne, Wyo.	25.5	31.4	25.8	17.6	21.8	19.8	31.8	33.5	28.2	21.0	32.2	24.7	26.6
Sheridan, Wyo.	18.9	29.2	17.8	1.8	18.2	15.6	27.9	22.8	27.6	14.6	28.4	14.2	24.6
Pueblo, Colo.	29.9	38.6	29.6	27.1	30.1	22.8	30.8	35.0	35.4	26.1	39.6	27.8	26.7
Santa Fe, N. Mex.	28.8	33.5	24.4	30.6	28.0	26.2	24.4	33.9	32.4	28.6	34.9	27.0	25.4
Phoenix, Ariz.	51.2	54.8	50.0	50.8	49.0	49.6	50.8	53.3	52.0	48.6	55.4	50.4	52.0
Modena, Utah.	26.7	32.2	24.2	24.4	13.6	28.2	25.6	28.7	28.7	16.6	33.5	24.4	24.4
Salt Lake City, Utah	29.2	35.2	28.2	29.4	21.2	30.4	32.0	30.8	35.7	22.2	36.0	25.0	28.9
Winnemucca, Nev.	28.6	34.6	29.3	22.1	11.8	31.8	29.2	31.5	32.6	14.8	30.4	20.7	31.4
Boise, Idaho	29.8	37.8	27.6	27.4	23.2	34.4	32.8	30.1	34.8	20.6	35.5	23.6	32.6
Seattle, Wash.	39.5	43.2	40.6	31.0	38.0	43.7	41.4	40.2	40.4	35.5	40.4	41.0	42.6
Walla Walla, Wash.	32.7	45.6	30.8	18.6	34.0	39.8	36.8	31.6	37.8	23.0	40.8	30.7	41.0
Portland, Oreg.	39.4	45.8	39.2	29.6	39.6	45.4	42.2	39.4	41.6	35.2	42.8	38.5	44.8
Roseburg, Oreg.	41.2	45.4	40.3	35.8	38.0	45.8	41.3	41.2	42.0	37.2	42.6	41.5	45.8
Eureka, Calif.	46.9	49.6	48.8	43.0	42.6	48.4	49.0	47.9	45.6	43.2	46.9	48.0	48.2
Fresno, Calif.	46.2	50.0	47.4	45.6	42.8	46.4	48.2	48.2	46.4	41.7	46.2	46.7	48.0
Los Angeles, Calif.	54.6	56.8	55.9	50.8	51.2	55.7	60.2	56.6	54.1	53.4	58.1	58.5	57.6
Sacramento, Calif.	45.8	48.8	46.3	43.6	42.4	47.5	46.2	46.8	46.2	40.6	43.8	45.1	47.0
San Diego, Calif.	54.3	56.3	55.2	52.5	51.6	54.4	56.6	54.6	53.6	52.5	56.3	55.2	54.4
San Francisco, Calif.	49.9	51.5	50.8	47.0	47.6	52.7	51.2	52.2	49.5	46.8	48.1	50.2	51.4

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal*[1] *and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for Feb.	February monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	12.4	5.9	20.4	11.9	9.1	10.2	18.2	15.0	16.3	14.8	7.3	10.0	23.4
Boston, Mass	28.8	24.3	33.2	25.5	25.8	26.9	32.6	27.6	32.6	32.0	23.4	26.6	38.0
Buffalo, N. Y	24.3	16.9	29.6	18.9	18.0	23.1	23.8	19.9	29.4	27.1	20.7	21.4	30.8
Canton, N. Y	18.0	8.3	20.8	11.6	9.5	15.6	21.8	15.4	20.9	20.1	9.2	10.0	25.1
Trenton, N. J	30.7	25.6	36.0	27.8	28.5	30.0	34.4	28.3	34.2	34.2	26.4	29.6	40.2
Pittsburgh, Pa	32.3	24.3	36.8	26.8	27.0	32.7	33.5	28.2	35.6	35.2	27.4	29.3	39.2
Scranton, Pa	27.3	19.8	33.2	23.6	24.1	26.8	32.3	24.8	31.6	31.5	23.0	25.7	35.9
Cincinnati, Ohio	32.8	27.4	40.1	29.6	29.0	34.5	34.4	30.6	37.0	36.0	28.3	31.6	40.3
Cleveland, Ohio	27.4	19.8	32.8	23.0	21.3	28.2	31.3	24.5	32.1	31.7	23.8	25.4	33.8
Evansville, Ind	36.3	29.9	41.2	34.3	32.5	37.3	37.7	35.0	40.0	38.9	32.6	35.6	43.2
Indianapolis, Ind	31.1	21.8	37.0	28.0	25.1	31.9	33.2	29.2	36.2	33.4	26.0	30.5	37.8
Chicago, Ill	27.4	20.2	34.5	25.0	19.8	27.2	30.5	25.8	33.4	29.4	22.3	28.8	32.2
Peoria, Ill	25.9	19.3	35.4	24.4	20.8	27.9	30.8	27.6	34.4	29.9	23.2	28.0	33.1
Grand Rapids, Mich	23.7	15.8	31.1	21.1	17.4	22.4	28.5	21.2	30.0	27.5	19.6	24.0	28.8
Marquette, Mich	16.3	11.6	25.4	13.9	6.4	12.8	23.3	15.6	23.5	17.0	12.4	21.0	18.7
Madison, Wis	19.1	12.1	27.7	17.1	11.1	19.5	23.7	18.4	26.4	20.3	15.0	23.2	25.0
Duluth, Minn	11.4	2.7	20.6	7.0	1.8	10.8	13.8	12.4	19.0	7.6	5.4	17.7	15.2
St. Paul, Minn	15.8	8.0	25.5	11.5	6.2	17.4	17.0	15.5	23.8	11.0	9.8	21.2	21.1
Des Moines, Iowa	23.7	19.7	31.6	21.3	19.2	26.4	26.5	25.3	33.2	26.4	22.4	27.2	30.7
Dubuque, Iowa	22.2	15.8	30.2	20.1	14.2	23.0	25.7	21.1	29.8	23.8	18.3	25.7	27.7
St. Louis, Mo	34.8	27.4	40.5	32.8	30.4	35.6	36.7	34.8	42.1	36.4	30.4	35.6	40.8
Springfield, Mo	35.2	31.2	39.8	34.0	33.0	37.6	35.8	36.9	42.4	38.2	32.0	36.4	41.5
Bismarck, N. Dak	10.3	5.3	20.6	11.8	1.8	14.2	10.0	17.2	22.8	2.2	7.2	24.5	20.0
Devils Lake, N. Dak	4.5	−3.6	15.4	3.2	−3.8	8.6	3.6	8.0	15.4	−0.4	2.0	16.4	12.2
Pierre, S. Dak	18.6	10.4	23.4	19.2	10.4	20.2	14.0	26.1	32.3	9.6	18.7	26.4	28.2
North Platte, Nebr	26.6	23.3	29.7	28.8	26.8	29.1	23.6	29.6	34.3	24.3	26.2	32.4	35.7
Omaha, Nebr	25.5	21.4	31.0	23.6	21.6	27.5	27.8	28.9	35.8	24.8	25.6	29.8	31.6
Concordia, Kans	29.8	26.6	35.1	28.2	28.6	32.6	30.9	33.9	39.6	31.0	30.0	34.2	37.4
Dodge City, Kans	33.2	30.0	39.0	34.9	32.1	37.5	31.0	35.1	38.7	34.0	32.0	35.9	41.3
Iola, Kans	32.2	30.0	39.6	32.2	31.8	34.8	35.1	36.8	41.8	36.4	32.2	36.0	40.0
Washington, D. C	35.3	30.1	38.8	34.2	32.8	36.8	37.2	32.7	39.0	38.6	32.6	34.2	43.0
Lynchburg, Va	40.3	35.2	42.2	38.8	36.9	41.2	39.8	35.4	41.4	42.0	37.8	37.8	46.6
Norfolk, Va	42.7	38.6	45.4	41.1	38.8	43.7	42.6	38.0	45.0	44.8	39.2	40.5	49.2
Parkersburg, W. Va	34.2	27.6	39.7	30.0	30.8	36.8	35.8	32.1	38.2	38.4	31.2	33.4	40.4
Charlotte, N. C	43.9	39.6	45.7	43.6	42.9	48.6	42.8	39.8	45.5	48.4	42.2	40.6	50.6
Charleston, S. C	52.4	48.6	51.5	52.0	50.8	55.2	51.6	48.2	53.6	56.4	50.3	49.5	55.6
Atlanta, Ga	45.3	43.1	45.8	44.1	44.4	50.8	44.4	41.8	48.1	50.1	43.7	42.2	51.1
Thomasville, Ga	55.0	51.4	52.8	54.4	53.2	60.5	53.8	50.6	56.4	61.2	55.6	52.6	58.0
Jacksonville, Fla	58.0	55.3	.....	57.2	56.8	62.8	57.6	53.9	59.6	62.0	58.0	54.6	60.2
Miami, Fla	68.8	67.4	65.6	65.7	64.8	70.4	66.6	64.2	68.8	70.3	69.8	64.0	68.9
Memphis, Tenn	44.3	40.2	46.0	42.5	43.2	46.8	44.6	43.6	47.6	47.2	41.0	42.8	49.7
Nashville, Tenn	41.6	38.0	44.0	39.1	39.8	44.7	41.2	39.4	45.1	45.0	38.5	38.8	47.4
Birmingham, Ala	48.0	44.4	47.8	45.6	47.8	52.6	46.0	44.5	50.0	52.8	45.8	46.2	52.0
Mobile, Ala	54.7	52.0	53.3	53.0	54.4	59.4	53.6	53.2	56.0	59.4	53.6	52.4	57.4
New Orleans, La	57.3	53.2	56.2	56.6	58.8	63.0	56.6	56.6	60.2	62.7	57.0	55.2	61.2
Shreveport, La	50.9	46.4	51.4	50.6	51.6	55.1	49.6	51.8	53.6	54.0	48.4	49.0	56.2
Amarillo, Tex	38.1	38.2	41.4	43.5	40.6	44.0	37.9	40.5	41.6	40.8	36.3	40.6	46.6
Brownsville, Tex	62.6	62.8	64.3	64.8	66.3	65.2	62.6	65.4	63.8	66.7	62.5	62.0	66.8
El Paso, Tex	49.0	49.0	47.8	53.4	48.8	51.8	46.0	53.4	49.4	50.5	46.2	48.9	53.4
Fort Worth, Tex	48.3	44.3	52.2	48.8	49.9	52.0	47.3	50.4	52.0	52.5	46.4	47.4	55.9
Galveston, Tex	56.3	52.8	56.9	58.3	57.2	57.0	55.4	58.8	58.0	59.9	56.3	55.6	60.6
San Antonio, Tex	55.4	53.2	58.4	58.6	57.6	56.6	53.0	57.7	58.4	58.2	52.0	54.4	61.5
Oklahoma City, Okla	39.6	36.7	43.8	39.3	39.1	43.1	40.2	42.2	44.2	42.8	38.0	40.7	46.2
Little Rock, Ark	44.9	41.8	46.4	44.0	44.8	48.0	45.0	46.2	49.0	48.2	42.4	44.1	50.0
Havre, Mont	13.6	7.6	16.6	14.2	6.8	17.8	14.9	21.3	28.8	0.4	13.6	29.4	23.4
Kalispell, Mont	23.3	22.3	28.4	24.4	22.0	21.7	23.0	25.9	30.2	15.4	17.0	33.0	35.8
Cheyenne, Wyo	27.3	25.6	31.2	31.8	27.2	29.4	25.6	26.8	30.2	23.9	23.9	31.6	34.6
Sheridan, Wyo	22.4	20.6	22.5	22.0	20.5	23.1	21.6	27.0	31.9	11.4	18.8	28.1	31.0
Pueblo, Colo	32.9	32.0	36.5	36.0	35.4	37.4	30.9	34.8	38.2	33.2	29.6	38.8	40.6
Santa Fe, N. Mex	33.1	32.6	32.4	36.9	32.8	35.8	27.2	37.5	34.8	32.2	32.2	35.4	35.8
Phoenix, Ariz	55.1	55.1	53.8	59.6	53.8	55.2	51.2	57.6	57.6	54.4	55.3	58.8	60.6
Modena, Utah	31.0	32.6	31.8	36.1	26.2	31.8	29.4	31.8	34.6	29.0	22.0	37.3	37.6
Salt Lake City, Utah	33.8	34.5	38.2	36.0	28.6	31.7	34.2	37.4	36.8	29.8	26.6	39.2	40.2
Winnamucca, Nev	33.5	36.4	37.6	37.4	28.9	32.1	33.4	34.5	36.8	25.9	27.7	39.9	40.2
Boise, Idaho	34.8	36.0	40.8	38.6	30.5	36.0	35.8	35.4	35.3	31.9	30.7	42.0	42.0
Seattle, Wash	41.1	42.3	44.5	41.9	39.3	40.0	40.8	40.3	42.9	39.4	37.3	46.0	45.6
Walla Walla, Wash	37.1	36.3	42.0	32.6	36.9	38.7	39.0	37.1	40.7	33.4	29.8	46.4	47.0
Portland, Oreg	42.1	43.4	45.4	42.2	41.5	41.6	42.6	42.2	45.2	39.9	37.4	48.0	46.4
Roseburg, Oreg	43.4	44.5	45.0	48.8	41.2	43.4	43.2	41.2	46.4	41.2	41.8	48.1	47.6
Eureka, Calif	47.2	47.9	48.4	50.4	44.2	47.0	47.0	46.0	47.8	45.0	45.7	50.3	50.8
Fresno, Calif	51.1	52.2	52.2	54.9	51.4	51.4	49.5	52.2	51.5	49.0	50.2	56.4	54.4
Los Angeles, Calif	55.5	59.4	54.7	58.7	55.3	56.0	53.6	57.6	57.4	54.0	56.6	62.6	57.7
Sacramento, Calif	50.1	51.1	51.0	53.8	50.0	49.3	48.4	50.4	50.9	47.1	50.2	55.2	52.1
San Diego, Calif	55.1	57.4	55.4	56.4	54.7	55.1	53.6	56.8	55.2	53.7	55.2	59.0	56.6
San Francisco, Calif	52.2	54.0	52.8	55.8	52.0	51.8	51.6	52.8	52.9	50.2	52.2	57.0	55.2

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal [1] and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for Mar.	March monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	23.5	25.2	23.2	18.8	25.0	23.3	28.7	27.5	32.2	28.5	17.6	27.0	29.0
Boston, Mass	35.6	36.7	35.8	30.6	37.2	36.7	40.8	39.2	46.2	39.8	33.9	37.4	43.0
Buffalo, N. Y	31.1	30.1	27.8	27.1	33.2	34.7	35.5	36.0	41.6	35.2	29.2	31.2	35.8
Canton, N. Y	27.7	26.0	25.2	19.0	28.4	28.4	29.8	30.7	37.3	32.0	20.6	28.8	34.1
Trenton, N. J	39.1	35.6	36.0	32.2	39.2	41.8	43.0	40.4	50.0	41.2	38.3	39.3	45.0
Pittsburgh, Pa	39.6	36.8	33.2	34.1	40.6	44.6	42.2	42.6	50.7	43.0	38.6	37.0	42.4
Scranton, Pa	35.7	34.1	31.6	28.9	36.4	39.6	39.1	38.2	45.8	38.7	34.2	35.8	41.0
Cincinnati, Ohio	40.9	40.6	37.5	38.9	43.0	47.6	43.7	44.0	52.4	44.8	40.4	37.7	44.8
Cleveland, Ohio	34.6	34.0	30.4	30.1	37.3	40.2	37.1	40.0	45.6	38.8	34.8	33.0	39.0
Evansville, Ind	45.9	42.0	39.0	43.6	47.2	52.2	47.7	46.6	55.6	48.6	45.0	40.6	48.9
Indianapolis, Ind	40.0	37.7	35.5	37.9	41.6	47.4	42.6	42.3	49.9	43.6	38.2	35.6	43.2
Chicago, Ill	36.3	35.7	34.8	34.6	38.8	42.2	38.5	40.2	45.8	39.4	33.0	34.6	39.7
Peoria, Ill	37.0	36.8	34.1	37.4	40.0	45.6	40.8	41.5	47.3	41.2	34.2	34.8	41.1
Grand Rapids, Mich	33.4	32.0	31.4	28.8	35.0	38.4	35.4	36.1	41.0	36.7	28.7	32.2	36.4
Marquette, Mich	24.8	25.0	26.5	19.6	25.3	31.7	28.6	28.0	28.4	29.8	17.8	27.7	27.8
Madison, Wis	30.6	30.4	29.6	28.6	31.8	37.9	33.2	34.6	37.4	34.1	24.7	29.0	35.1
Duluth, Minn	23.7	23.2	25.0	18.9	23.2	31.4	23.9	25.3	24.6	26.2	13.5	25.3	26.2
St. Paul, Minn	29.1	30.8	28.0	26.2	27.3	38.3	30.6	30.5	33.7	32.3	21.0	30.4	34.6
Des Moines, Iowa	35.9	37.2	31.2	37.6	37.5	45.0	39.9	39.8	44.2	40.6	31.5	33.2	41.2
Dubuque, Iowa	34.0	34.6	32.0	33.6	34.8	41.6	36.6	37.2	41.2	37.4	27.6	32.0	38.4
St. Louis, Mo	44.1	43.5	38.5	45.0	46.6	52.6	47.1	46.6	54.0	46.2	41.4	39.8	48.6
Springfield, Mo	45.2	44.0	35.1	47.8	47.0	52.6	48.4	45.6	52.8	45.2	41.6	38.3	50.1
Bismarck, N. Dak	24.2	27.6	24.0	24.7	24.3	36.5	19.1	26.0	27.8	27.3	21.4	26.8	31.6
Devils Lake, N. Dak	18.5	23.0	23.8	17.0	21.8	34.2	14.4	19.1	21.0	25.6	12.4	24.2	24.6
Pierre, S. Dak	31.5	32.3	20.8	34.6	29.6	42.7	29.4	32.0	38.3	33.8	29.4	29.2	38.6
North Platte, Nebr	36.6	38.3	26.8	43.0	33.0	45.4	37.0	37.9	43.4	38.8	34.2	29.0	42.8
Omaha, Nebr	37.0	37.4	30.0	39.5	38.5	47.1	40.5	41.6	45.6	40.6	32.7	33.8	43.2
Concordia, Kans	41.0	41.3	30.6	44.5	41.6	48.4	42.0	44.8	47.6	41.8	37.9	35.2	46.6
Dodge City, Kans	42.8	43.7	32.6	48.1	41.8	49.4	43.8	45.0	48.1	41.0	40.0	33.6	49.2
Iola, Kans	42.4	45.4	34.6	47.1	45.8	51.0	47.8	46.4	52.1	45.6	41.7	39.0	49.7
Washington, D. C	42.6	39.4	38.8	37.9	43.4	48.4	46.4	45.5	55.5	45.4	45.4	42.6	46.4
Lynchburg, Va	47.3	42.6	41.2	44.6	46.6	52.3	49.4	47.4	57.1	48.8	47.9	45.5	49.2
Norfolk, Va	48.2	42.4	42.4	44.1	47.2	52.6	50.4	50.0	58.1	51.2	49.6	48.8	51.4
Parkersburg, W. Va	42.8	38.9	35.4	39.4	42.2	47.8	44.6	45.2	53.3	46.7	42.1	40.0	45.8
Charlotte, N. C	50.4	46.2	43.1	49.8	50.3	55.8	52.0	49.8	59.6	53.2	52.6	48.6	54.2
Charleston, S. C	57.4	51.2	49.6	55.2	59.4	62.0	59.5	54.6	65.1	59.0	59.6	54.0	59.2
Atlanta, Ga	52.0	48.6	43.6	50.7	52.6	59.2	54.0	49.6	61.1	53.6	52.1	48.9	55.3
Thomasville, Ga	60.2	55.8	52.2	58.2	62.8	65.0	63.0	57.4	68.2	62.0	61.0	58.4	63.2
Jacksonville, Fla	62.6	57.7	55.8	59.5	65.6	67.6	63.8	59.5	70.0	64.8	64.6	58.2	64.0
Miami, Fla	72.0	65.4	63.0	65.8	72.4	72.4	71.7	67.6	73.8	72.8	73.8	66.8	70.0
Memphis, Tenn	52.3	49.3	42.7	52.0	53.5	58.1	53.6	51.8	61.4	52.9	49.8	48.0	56.3
Nashville, Tenn	49.2	46.0	41.3	47.2	49.9	56.3	50.1	48.5	59.0	51.3	47.6	45.6	52.8
Birmingham, Ala	55.4	50.1	45.4	52.8	56.2	61.8	56.5	52.1	64.0	55.4	54.0	50.2	57.2
Mobile, Ala	59.7	55.1	52.4	59.9	63.4	65.9	61.6	57.8	66.8	60.2	58.8	56.0	62.2
New Orleans, La	62.8	57.6	55.0	63.8	66.1	68.9	64.0	60.3	70.6	62.5	61.6	58.7	65.2
Shreveport, La	58.3	55.0	47.2	60.6	58.4	62.5	58.2	56.9	65.7	57.1	55.0	53.3	60.7
Amarillo, Tex	46.9	47.3	37.2	53.7	46.2	52.6	46.4	47.2	52.0	45.3	42.8	38.9	53.4
Brownsville, Tex	68.2	63.4	59.0	71.4	69.5	71.2	69.2	66.4	74.3	68.7	65.0	65.6	69.5
El Paso, Tex	55.8	53.1	49.3	60.4	53.3	56.2	54.6	53.6	59.3	53.6	51.2	51.6	60.1
Fort Worth, Tex	57.7	55.5	46.8	62.4	58.3	62.2	56.1	56.4	63.4	56.4	53.6	50.8	62.2
Galveston, Tex	62.4	57.2	53.8	63.8	63.3	66.6	60.7	60.0	68.0	61.6	59.6	58.8	66.2
San Antonio, Tex	62.8	58.8	53.2	68.6	63.6	66.6	61.0	60.4	67.0	61.6	58.6	58.6	67.6
Oklahoma City, Okla	50.0	50.0	38.4	54.4	51.0	56.8	51.0	50.1	56.6	49.0	46.2	41.8	56.0
Little Rock, Ark	53.0	51.0	43.2	54.8	54.0	58.8	53.8	53.0	61.3	52.4	49.6	47.3	56.8
Havre, Mont	27.1	33.8	24.9	34.0	22.0	35.6	17.4	27.6	28.6	26.8	30.6	28.0	30.9
Kalispell, Mont	32.9	35.4	37.1	35.4	26.2	36.1	32.8	31.2	33.3	29.9	32.6	34.1	35.9
Cheyenne, Wyo	33.1	34.0	27.6	38.6	25.6	40.8	33.7	31.5	37.6	33.8	28.2	21.6	37.3
Sheridan, Wyo	32.7	34.6	30.2	38.0	24.0	37.4	33.0	30.4	35.6	32.2	28.9	23.2	36.8
Pueblo, Colo	41.6	41.2	35.0	48.5	37.6	46.8	41.6	40.5	47.6	41.6	37.0	31.8	47.4
Santa Fe, N. Mex	39.7	39.4	35.8	43.6	35.6	42.8	37.6	37.4	42.6	36.4	34.6	33.7	43.4
Phoenix, Ariz	60.7	65.6	58.6	64.0	56.2	62.4	57.5	58.4	64.7	57.0	58.9	56.6	65.0
Modena, Utah	38.2	41.8	39.8	42.6	31.0	40.5	36.8	35.3	42.0	36.4	34.8	30.6	39.2
Salt Lake City, Utah	41.7	45.0	45.1	46.3	33.0	45.4	42.6	39.2	46.2	36.8	37.0	36.3	44.3
Winnemucca, Nev	40.0	44.6	43.2	44.2	32.8	42.2	39.2	38.5	43.8	33.9	37.5	35.7	41.6
Boise, Idaho	42.7	46.0	47.2	46.0	33.2	45.5	42.8	40.8	45.2	38.8	40.6	39.0	44.7
Seattle, Wash	44.9	47.6	50.0	44.4	41.0	44.0	44.7	44.4	44.6	41.5	44.0	44.4	44.9
Walla Walla, Wash	46.1	49.4	49.7	47.7	39.8	49.0	46.8	45.2	47.2	43.2	46.6	44.4	47.8
Portland, Oreg	46.9	51.1	52.6	47.0	42.6	46.7	48.2	45.8	48.0	43.3	47.2	45.8	47.4
Roseburg, Oreg	47.1	51.8	51.5	48.4	42.6	48.0	47.4	44.8	48.4	45.2	47.2	45.6	48.4
Eureka, Calif	48.3	49.3	52.1	48.6	43.8	48.5	47.6	47.0	49.8	47.1	47.4	46.6	47.9
Fresno, Calif	55.0	58.9	58.4	57.4	51.2	56.4	52.7	52.7	56.8	52.6	56.8	54.4	56.8
Los Angeles, Calif	57.5	63.0	61.4	62.0	56.7	59.1	55.6	56.8	59.4	55.6	61.0	56.4	58.8
Sacramento, Calif	54.3	58.1	57.4	56.6	50.8	53.6	51.2	51.0	55.0	50.8	56.4	52.8	54.5
San Diego, Calif	56.7	61.4	59.4	59.2	54.6	58.5	55.0	55.6	57.5	54.6	58.4	56.6	57.2
San Francisco, Calif	54.2	58.4	57.9	56.6	51.7	54.9	52.6	52.6	54.6	52.4	56.8	54.5	55.4

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal [1] and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for April	April monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	36.4	31.5	40.8	29.2	35.1	39.7	36.4	36.0	43.0	39.4	34.9	35.6	39.0
Boston, Mass	46.4	45.3	50.8	45.6	44.0	47.8	46.8	45.0	51.8	48.7	48.2	47.2	49.8
Buffalo, N. Y	42.8	40.2	46.8	42.8	40.4	42.4	42.5	39.8	51.3	44.8	40.4	41.1	44.7
Canton, N. Y	42.5	39.5	50.0	43.8	40.5	42.3	39.3	40.2	48.5	43.6	39.6	40.5	42.2
Trenton, N. J	49.8	48.5	54.9	48.8	49.1	50.1	49.9	47.8	56.6	51.6	50.2	49.4	51.8
Pittsburgh, Pa	51.2	49.4	55.5	49.2	49.6	49.3	51.0	47.0	56.9	52.6	49.8	49.8	54.4
Scranton, Pa	48.1	46.2	53.9	47.2	47.6	48.1	47.9	45.4	55.6	48.6	48.3	46.2	49.4
Cincinnati, Ohio	52.4	53.9	58.4	51.6	51.2	50.9	52.6	48.0	56.2	55.6	51.7	53.8	58.2
Cleveland, Ohio	46.2	45.4	51.8	45.9	45.4	45.8	47.0	42.6	53.9	48.6	45.8	45.3	50.6
Evansville, Ind	56.7	55.4	61.9	54.2	55.9	53.0	57.6	52.8	58.8	59.2	55.9	58.4	62.8
Indianapolis, Ind	52.1	51.9	58.0	50.5	49.2	48.9	52.2	46.8	55.8	54.2	49.9	53.4	57.6
Chicago, Ill	47.7	48.3	56.3	48.0	44.8	44.0	48.0	43.0	54.2	48.7	46.6	49.0	52.6
Peoria, Ill	50.9	51.2	58.8	49.8	47.4	45.8	51.3	44.2	54.3	52.5	49.4	53.5	57.8
Grand Rapids, Mich	47.0	45.6	53.8	46.7	43.1	44.0	45.6	41.1	52.6	48.0	45.0	45.6	51.8
Marquette, Mich	37.8	35.1	47.4	38.4	33.4	37.5	39.2	32.9	44.6	37.9	36.6	36.6	43.0
Madison, Wis	45.4	45.1	54.0	45.3	42.4	41.6	45.8	40.4	50.6	45.8	44.9	45.2	51.5
Duluth, Minn	37.0	33.6	45.4	38.0	33.2	36.3	39.2	31.6	40.8	37.2	37.5	36.6	42.0
St. Paul, Minn	45.6	44.4	55.8	43.8	42.2	43.6	45.5	38.8	50.4	45.2	43.7	43.6	52.6
Des Moines, Iowa	50.1	50.4	59.4	48.6	46.8	46.8	49.3	43.9	52.8	50.8	50.2	52.3	58.2
Dubuque, Iowa	48.6	48.5	57.7	48.2	46.4	44.2	49.0	42.8	52.2	48.8	47.0	49.4	54.8
St. Louis, Mo	56.1	56.4	63.2	54.4	53.7	51.1	57.5	51.2	58.1	58.2	55.0	58.4	62.6
Springfield, Mo	58.0	54.8	61.8	52.8	54.0	51.8	56.4	51.6	55.6	57.6	55.2	56.2	62.0
Bismarck, N. Dak	42.1	43.1	51.5	41.0	38.5	43.0	43.4	34.6	43.4	44.8	41.1	41.0	51.0
Devils Lake, N. Dak	38.2	37.4	48.3	37.8	36.1	41.2	40.5	31.2	39.2	41.8	37.4	37.1	45.6
Pierre, S. Dak	46.8	47.4	54.8	44.6	42.6	45.2	46.2	38.1	48.1	49.2	47.0	46.9	55.2
North Platte, Nebr	48.6	50.0	55.0	47.8	44.8	42.7	47.5	40.5	48.6	48.1	48.1	50.0	54.6
Omaha, Nebr	51.2	51.8	60.0	49.5	47.9	47.4	49.1	44.2	54.2	52.6	51.2	53.4	60.0
Concordia, Kans	53.5	54.2	59.6	50.2	51.0	47.6	51.0	45.6	54.6	54.4	53.7	54.6	60.2
Dodge City, Kans	53.6	54.2	58.8	50.2	51.4	47.8	52.6	48.8	53.8	53.0	54.1	53.4	59.6
Ice, Kans	54.2	55.0	61.0	52.6	53.8	51.7	55.8	52.1	56.2	57.2	56.5	57.0	61.0
Washington, D. C	53.3	53.5	59.4	53.4	54.2	53.2	53.8	52.6	59.2	55.6	53.6	51.9	56.9
Lynchburg, Va	56.7	56.7	59.8	54.7	57.4	53.3	55.6	54.3	59.1	57.8	55.8	54.1	59.6
Norfolk, Va	56.8	55.8	60.2	56.4	57.6	56.4	56.9	57.3	61.2	59.7	57.2	55.4	59.2
Parkersburg, W. Va	56.4	53.9	57.3	52.5	52.6	51.6	52.9	50.6	57.6	56.2	52.6	53.6	57.0
Charlotte, N. C	59.8	60.6	61.8	59.0	62.3	57.4	60.0	57.8	61.6	61.0	59.0	58.8	63.9
Charleston, S. C	64.5	65.2	63.3	64.0	67.2	63.5	64.4	64.0	66.3	68.2	64.4	64.0	66.8
Atlanta, Ga	61.6	61.8	64.4	60.0	63.7	57.9	61.7	58.6	61.0	62.8	60.2	59.2	66.4
Thomasville, Ga	66.7	68.6	66.4	65.9	68.1	64.5	66.4	66.4	66.4	69.8	67.7	67.4	69.7
Jacksonville, Fla	68.7	70.1	66.9	67.0	69.6	67.0	67.3	68.8	67.8	71.4	69.2	67.7	69.0
Miami, Fla	74.2	74.6	69.5	70.2	72.0	73.6	72.6	75.0	74.0	75.8	74.9	74.6	72.2
Memphis, Tenn	61.8	61.1	65.9	60.2	61.7	60.0	61.7	59.4	61.0	64.0	61.5	62.0	68.2
Nashville, Tenn	59.0	58.6	63.5	57.2	59.7	57.0	59.2	56.2	59.2	61.6	58.3	59.3	64.2
Birmingham, Ala	63.3	62.8	66.0	61.2	64.0	60.4	62.8	61.2	62.6	66.2	62.2	62.0	68.2
Mobile, Ala	66.3	67.8	66.5	64.8	66.6	64.8	65.6	66.4	65.8	70.2	67.8	66.6	70.0
New Orleans, La	68.8	68.9	68.8	67.8	68.2	67.8	68.1	69.1	68.2	73.3	69.7	69.1	72.4
Shreveport, La	65.8	64.7	67.3	63.5	63.8	63.8	65.2	64.4	63.1	67.8	66.0	65.4	70.9
Amarillo, Tex	55.8	56.0	57.0	52.9	54.8	53.2	54.5	51.0	55.0	54.8	56.0	55.1	61.1
Brownsville, Tex	72.7	71.6	71.4	72.5	74.4	76.2	74.3	75.8	74.4	78.4	75.7	73.6	75.0
El Paso, Tex	63.4	64.0	62.7	62.7	62.3	62.0	65.0	60.1	61.0	61.6	63.6	61.4	67.6
Fort Worth, Tex	65.0	63.2	66.2	62.3	63.8	63.4	65.0	63.6	62.8	65.3	66.0	65.2	72.3
Galveston, Tex	68.7	66.7	66.1	67.0	67.8	68.3	68.4	67.3	67.4	71.6	69.4	67.2	72.2
San Antonio, Tex	66.1	66.8	67.5	67.6	69.0	68.9	68.4	69.4	67.5	70.2	69.2	69.2	74.2
Oklahoma City, Okla	59.8	58.0	63.0	55.4	57.6	56.0	58.8	56.2	58.7	60.0	59.3	60.0	66.3
Little Rock, Ark	62.1	61.8	65.5	60.6	61.2	60.7	61.6	60.2	60.4	64.2	62.4	62.6	68.2
Havre, Mont	43.7	44.9	53.6	43.8	39.4	42.3	47.2	36.0	43.1	42.7	43.2	42.8	47.1
Kalispell, Mont	43.6	44.8	49.2	43.5	39.6	42.6	46.4	39.2	42.1	40.1	42.6	42.9	47.0
Cheyenne, Wyo	40.9	40.2	46.9	40.2	36.4	34.8	41.7	31.6	38.8	38.2	39.6	39.4	45.2
Sheridan, Wyo	43.4	43.2	52.0	43.2	40.1	37.2	45.2	36.4	43.0	40.3	40.2	41.5	48.2
Pueblo, Colo	50.1	49.0	53.4	48.6	46.8	45.8	50.6	43.6	48.0	48.8	51.0	48.4	54.4
Santa Fe, N. Mex	46.7	48.0	47.7	46.6	46.1	45.0	48.0	40.8	43.4	44.3	45.6	45.6	50.6
Phoenix, Ariz	67.0	68.5	66.4	68.2	64.2	67.5	69.2	64.6	66.1	63.2	66.6	65.0	70.8
Modena, Utah	46.0	46.8	48.2	48.2	42.6	44.6	49.0	43.1	43.0	40.2	44.4	45.8	46.7
Salt Lake City, Utah	49.6	51.8	56.4	51.6	45.6	47.6	52.1	44.0	47.0	44.4	47.1	49.6	51.7
Winnemucca, Nev	46.7	48.6	50.4	49.0	44.4	45.5	48.8	43.6	45.1	41.4	45.2	46.8	49.2
Boise, Idaho	50.4	51.2	55.3	51.4	46.4	48.8	51.8	45.4	47.0	45.0	49.4	49.8	52.7
Seattle, Wash	49.4	51.4	52.6	49.0	46.5	50.0	49.6	45.6	47.5	46.6	51.0	49.0	50.6
Walla Walla, Wash	53.1	53.4	56.9	53.1	49.0	53.2	54.0	49.0	50.2	49.2	54.1	52.8	57.2
Portland, Oreg	51.8	53.8	55.6	53.0	49.4	52.8	53.4	48.2	50.8	48.7	54.2	53.0	54.2
Roseburg, Oreg	51.0	53.5	54.4	52.6	50.0	52.0	53.0	49.2	50.8	48.6	52.8	53.3	53.6
Eureka, Calif	49.9	51.9	52.3	50.2	49.0	50.7	50.5	48.0	48.4	46.1	50.5	49.7	50.9
Fresno, Calif	60.2	60.8	60.0	62.4	59.3	61.8	62.4	59.4	59.2	57.4	59.3	62.0	60.6
Los Angeles, Calif	59.4	62.8	60.4	62.4	57.9	61.7	60.9	58.8	59.0	57.6	58.4	60.4	60.0
Sacramento, Calif	58.1	58.8	58.3	61.0	57.8	59.2	58.8	57.1	57.6	56.4	57.1	60.6	58.0
San Diego, Calif	58.5	61.4	59.7	60.2	57.0	60.4	59.2	57.6	57.4	56.3	59.0	59.4	58.6
San Francisco, Calif	55.0	58.2	57.1	57.6	55.1	57.2	56.0	54.9	55.0	53.5	56.1	57.4	57.0

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal*[1] *and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for May	May monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	49.5	52.1	47.6	49.9	43.2	54.4	51.0	50.0	53.4	52.6	48.6	47.2	47.6
Boston, Mass	57.1	60.4	56.6	58.6	50.7	63.2	59.1	54.6	58.0	61.4	57.6	56.2	57.4
Buffalo, N. Y	54.6	54.2	51.1	52.8	47.4	58.0	54.0	53.2	56.8	60.2	52.6	48.3	49.0
Canton, N. Y	56.2	57.2	50.7	53.9	46.8	58.2	54.8	55.0	57.6	58.5	51.1	49.2	50.6
Trenton, N. J	61.1	64.1	58.4	62.2	54.6	65.2	62.0	58.0	60.3	64.2	60.6	57.2	59.4
Pittsburgh, Pa	62.4	62.8	58.0	63.2	54.6	67.6	60.8	59.6	62.4	65.0	60.1	55.4	56.2
Scranton, Pa	59.4	61.5	54.6	60.4	51.6	64.6	60.0	57.2	60.1	62.2	58.1	55.0	55.6
Cincinnati, Ohio	63.1	66.8	60.2	64.5	56.6	68.8	60.1	60.8	64.6	66.8	61.2	57.2	58.6
Cleveland, Ohio	57.9	60.0	54.2	58.0	51.2	64.4	56.4	55.6	59.8	61.3	54.5	52.4	53.6
Evansville, Ind	68.7	67.9	65.2	68.6	60.4	71.9	63.8	65.6	68.1	70.4	64.8	60.2	63.2
Indianapolis, Ind	62.9	65.6	59.7	63.4	56.0	68.8	59.4	61.0	65.3	67.5	60.6	56.0	59.6
Chicago, Ill	58.5	62.3	54.1	59.3	52.6	63.7	55.2	55.4	61.7	63.8	54.4	54.4	54.7
Peoria, Ill	61.7	65.0	58.6	61.4	55.6	66.4	58.2	60.8	65.1	65.6	61.0	55.5	57.8
Grand Rapids, Mich	58.0	60.0	53.3	57.8	51.7	61.8	56.4	57.1	62.2	64.0	56.8	50.7	53.8
Marquette, Mich	49.0	54.4	45.6	48.7	44.8	50.8	50.2	50.4	51.6	54.9	49.4	44.1	46.6
Madison, Wis	57.6	60.3	51.8	57.3	52.0	61.0	55.2	56.6	60.4	63.6	57.0	51.2	54.4
Duluth, Minn	47.3	53.2	44.2	47.4	46.0	46.9	50.5	51.0	50.5	51.4	48.9	45.8	48.2
St. Paul, Minn	57.9	59.9	52.2	56.6	54.8	59.8	58.0	59.0	59.8	62.5	58.6	49.8	54.3
Des Moines, Iowa	61.3	64.0	57.3	61.7	57.3	67.2	59.8	61.2	65.4	64.3	60.7	55.7	59.4
Dubuque, Iowa	60.3	62.6	54.8	60.0	54.8	64.9	57.8	58.8	63.6	64.8	60.0	53.8	56.0
St. Louis, Mo	67.0	69.4	64.6	68.0	60.6	70.8	63.0	64.8	68.5	69.4	64.1	59.4	63.3
Springfield, Mo	64.5	65.6	63.2	65.8	59.1	68.6	62.0	65.0	65.4	66.4	62.4	57.7	61.2
Bismarck, N. Dak	54.5	55.6	51.0	52.8	52.6	54.2	56.0	54.8	54.8	57.6	56.2	49.2	55.6
Devils Lake, N. Dak	52.7	54.8	50.7	50.3	51.0	48.9	55.7	54.4	54.2	56.8	54.5	45.6	52.6
Pierre, S. Dak	58.0	59.0	53.6	56.9	54.8	59.2	58.4	56.9	58.2	60.3	58.5	53.2	59.1
North Platte, Nebr	58.7	59.8	55.2	58.2	52.6	61.6	58.2	57.8	61.0	59.5	57.2	53.2	59.4
Omaha, Nebr	62.4	64.4	58.9	63.0	57.6	67.8	61.6	61.7	65.9	64.6	60.9	55.7	61.2
Concordia, Kans	63.2	64.4	60.0	63.2	57.6	67.8	61.1	61.4	65.8	64.2	60.2	57.4	62.0
Dodge City, Kans	63.5	62.8	59.4	63.6	57.0	67.0	61.2	61.6	64.8	63.6	60.8	57.0	63.4
Iola, Kans	64.5	65.6	62.4	66.0	58.8	68.8	63.3	66.2	67.6	67.6	63.6	60.0	62.6
Washington, D. C	63.7	67.0	62.5	66.7	59.6	69.6	64.6	60.0	62.3	66.8	63.4	60.0	60.6
Lynchburg, Va	67.3	68.4	65.4	69.0	60.7	70.0	65.0	61.8	63.2	67.2	63.8	61.4	61.3
Norfolk, Va	66.2	68.3	66.0	69.2	62.4	70.5	67.9	61.4	63.0	67.9	65.6	65.2	64.4
Parkersburg, W. Va	63.8	64.8	61.6	65.9	57.6	69.0	63.0	61.4	64.2	66.0	62.2	57.7	58.8
Charlotte, N. C	68.9	70.6	69.3	72.6	63.6	72.3	69.0	65.6	66.0	69.4	66.2	66.0	66.2
Charleston, S. C	72.7	72.5	75.5	74.4	70.2	73.2	74.2	68.8	70.5	73.6	70.7	72.4	71.0
Atlanta, Ga	69.9	71.2	71.5	72.6	64.0	72.2	67.7	67.1	68.4	69.0	65.8	65.8	68.0
Thomasville, Ga	74.0	76.2	77.8	76.4	70.3	74.3	72.7	72.8	72.2	75.3	72.2	71.0	73.2
Jacksonville, Fla	75.0	74.8	77.8	75.6	73.1	74.2	74.8	71.9	72.9	76.4	72.3	74.0	72.5
Miami, Fla	78.6	77.6	78.0	76.7	75.6	76.2	76.4	76.2	74.6	77.2	76.0	77.7	75.9
Memphis, Tenn	70.6	70.6	71.2	73.0	64.2	74.6	67.0	70.5	70.7	72.4	68.0	64.8	68.2
Nashville, Tenn	68.2	68.2	70.1	70.5	61.8	71.0	66.0	67.0	68.4	69.9	65.6	62.4	64.3
Birmingham, Ala	71.1	70.6	73.1	72.7	65.0	73.2	68.3	69.8	71.0	71.6	69.0	66.7	69.3
Mobile, Ala	74.4	74.8	76.2	76.4	69.9	74.6	72.4	75.1	72.3	74.1	72.6	71.0	72.3
New Orleans, La	75.4	75.5	77.4	77.1	72.2	76.0	74.0	78.0	74.3	75.7	74.3	74.2	74.8
Shreveport, La	73.6	72.5	74.6	73.8	67.7	75.2	70.1	75.2	73.6	75.3	71.4	68.6	73.0
Amarillo, Tex	64.1	63.2	61.5	67.0	58.2	67.5	61.8	64.1	65.4	65.0	63.8	60.7	65.0
Brownsville, Tex	78.6	78.7	78.8	80.3	77.6	79.4	80.2	80.8	78.2	81.4	80.6	77.4	77.6
El Paso, Tex	71.5	71.2	69.6	72.9	66.6	69.8	72.0	73.1	71.9	73.0	74.0	72.2	73.4
Fort Worth, Tex	72.3	70.2	72.7	72.8	66.8	75.2	69.8	73.4	73.4	74.1	73.4	69.0	73.8
Galveston, Tex	74.8	74.6	75.3	75.0	71.6	75.2	73.0	76.6	74.8	77.3	76.0	72.9	77.2
San Antonio, Tex	75.1	74.4	75.6	76.1	71.6	75.9	73.4	76.8	75.4	77.0	77.2	71.6	77.2
Oklahoma City, Okla	67.7	65.8	65.3	69.1	62.4	71.0	65.7	68.6	69.6	68.8	66.3	63.3	67.0
Little Rock, Ark	70.3	70.6	70.4	72.2	64.0	74.1	67.1	71.0	70.2	71.5	67.4	65.6	69.0
Havre, Mont	53.4	54.7	52.7	49.1	52.8	51.6	56.7	53.7	53.8	53.8	56.1	53.0	56.2
Kalispell, Mont	51.4	53.0	51.4	47.1	51.3	48.3	51.0	48.0	53.0	50.4	50.8	53.4	54.3
Cheyenne, Wyo	50.3	51.1	46.4	48.6	43.0	50.7	51.2	49.4	50.4	49.8	50.3	48.8	52.5
Sheridan, Wyo	50.7	52.4	50.5	49.0	48.3	50.6	54.8	51.2	53.4	52.4	53.4	49.8	54.5
Pueblo, Colo	59.2	60.4	55.6	59.0	53.2	61.2	59.7	59.2	62.2	59.4	58.4	55.2	63.3
Santa Fe, N. Mex	55.7	56.2	52.3	55.6	48.9	55.7	56.0	56.2	56.0	55.9	55.8	56.0	59.2
Phoenix, Ariz	75.0	75.6	70.8	74.0	69.6	75.2	76.9	75.9	73.6	76.4	77.6	78.8	81.2
Modena, Utah	53.5	56.6	50.8	51.7	48.6	51.0	58.8	54.4	52.0	53.2	55.2	57.3	58.2
Salt Lake City, Utah	57.4	62.4	56.7	54.8	53.7	56.4	62.5	57.8	59.1	57.6	59.4	62.0	63.3
Winnemucca, Nev	53.9	59.4	52.3	50.3	50.1	51.6	59.4	54.2	54.1	54.4	54.8	60.6	58.6
Boise, Idaho	57.1	61.2	55.0	52.5	55.0	54.8	59.3	55.0	57.2	56.4	56.8	63.8	61.8
Seattle, Wash	54.5	56.3	56.0	52.0	52.4	52.4	53.6	51.6	53.6	54.5	54.1	57.4	57.8
Walla Walla, Wash	59.6	62.2	58.0	55.8	57.0	56.8	59.4	57.9	60.4	59.0	60.0	66.4	62.6
Portland, Oreg	56.9	61.1	57.7	54.8	58.6	55.6	57.2	55.1	57.1	58.0	57.6	61.2	61.2
Roseburg, Oreg	56.0	59.7	56.4	54.2	54.5	54.8	57.0	55.0	55.9	57.7	57.0	61.6	60.2
Eureka, Calif	52.0	53.0	53.6	50.4	50.0	50.6	52.1	49.3	50.8	51.0	51.7	52.4	53.9
Fresno, Calif	67.1	68.8	63.0	64.2	62.4	63.8	69.8	68.2	63.6	68.6	67.1	72.6	68.8
Los Angeles, Calif	62.2	60.3	61.5	61.3	58.7	61.2	61.6	62.1	58.8	62.6	64.6	64.8	62.8
Sacramento, Calif	63.3	62.8	59.8	61.4	59.8	61.8	65.2	65.0	60.7	65.9	63.3	68.5	64.9
San Diego, Calif	60.8	60.2	60.6	60.8	58.4	60.8	61.0	59.8	58.4	60.3	63.2	63.0	62.3
San Francisco, Calif	56.8	56.2	57.6	55.8	54.0	54.6	57.2	55.8	54.4	58.0	57.2	59.1	59.0

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal [1] and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for June	June monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	58.9	56.3	58.8	57.5	58.1	55.6	63.8	59.8	60.0	61.1	60.4	57.8	59.6
Boston, Mass	66.5	67.3	63.9	62.6	65.8	63.9	67.2	65.8	68.2	68.6	69.3	66.6	70.9
Buffalo, N. Y	64.4	63.2	64.0	61.4	60.2	61.9	72.4	64.0	66.6	65.0	64.8	62.4	66.0
Canton, N. Y	65.8	61.0	63.0	61.2	62.0	59.6	69.4	63.6	65.7	64.6	63.8	62.0	65.7
Trenton, N. J	69.5	69.4	67.8	65.8	70.5	67.2	70.8	69.0	71.1	71.8	73.5	67.8	75.2
Pittsburgh, Pa	70.7	71.0	67.1	65.3	67.6	68.0	75.0	68.5	73.0	71.2	71.6	68.6	73.1
Scranton, Pa	67.8	66.8	65.8	63.0	66.8	65.4	71.7	66.9	69.4	68.7	70.2	65.4	71.2
Cincinnati, Ohio	71.2	76.2	69.3	67.3	69.0	70.4	75.3	70.4	75.4	73.7	72.0	71.4	76.1
Cleveland, Ohio	67.1	68.3	63.9	62.8	64.8	67.4	73.4	67.4	69.8	68.6	70.8	64.8	71.6
Evansville, Ind	75.1	80.0	73.2	71.9	73.4	75.9	78.2	74.2	80.0	77.8	75.4	75.4	79.2
Indianapolis, Ind	71.6	74.8	69.5	67.2	68.8	71.2	75.8	71.1	76.0	73.8	72.8	70.4	74.4
Chicago, Ill	68.2	70.2	63.8	63.5	63.8	66.9	72.6	69.1	73.8	70.8	70.8	64.5	71.8
Peoria, Ill	70.9	74.2	67.8	65.8	67.7	71.4	74.8	72.0	76.8	73.2	73.0	69.2	73.4
Grand Rapids, Mich	67.8	67.6	63.4	62.5	62.6	66.2	74.2	69.2	73.4	69.6	71.8	65.2	70.4
Marquette, Mich	58.9	58.8	55.2	52.9	52.0	57.2	62.3	58.9	65.2	60.0	60.2	56.0	60.4
Madison, Wis	67.2	66.6	62.0	61.8	61.8	65.9	71.2	69.0	72.2	68.6	71.2	63.8	67.9
Duluth, Minn	57.2	57.0	53.2	53.8	53.0	57.4	58.1	57.9	62.6	59.9	60.8	55.9	58.7
St. Paul, Minn	67.1	66.2	62.4	62.7	62.8	66.3	70.0	68.0	73.5	68.3	70.0	63.6	66.2
Des Moines, Iowa	70.6	74.4	67.0	66.5	67.9	72.7	73.4	72.5	76.3	74.0	72.0	69.0	72.0
Dubuque, Iowa	69.4	69.8	64.7	64.0	65.2	68.7	72.8	70.9	75.0	71.2	72.7	66.0	70.2
St. Louis, Mo	75.0	81.1	72.0	71.5	73.3	77.1	77.3	75.2	78.4	78.2	75.2	73.4	78.4
Springfield, Mo	72.5	78.8	70.3	70.0	70.9	77.0	73.6	71.8	74.2	75.7	72.8	72.4	77.2
Bismarck, N. Dak	63.7	64.0	58.2	59.2	61.9	65.8	69.0	64.4	71.2	66.2	66.6	60.4	63.2
Devils Lake, N. Dak	62.6	61.6	55.4	57.5	59.2	61.2	66.1	62.4	66.9	63.8	67.0	59.0	60.8
Pierre, S. Dak	68.5	68.8	63.1	63.5	65.3	71.7	71.0	66.6	76.0	70.5	68.7	64.2	67.6
North Platte, Nebr	67.5	72.1	63.8	64.6	67.0	73.8	69.3	68.4	71.8	72.8	69.2	67.4	71.7
Omaha, Nebr	71.6	75.2	67.6	68.0	69.6	76.1	73.4	73.1	77.4	75.6	72.4	69.0	73.6
Concordia, Kans	73.0	78.6	68.3	69.2	72.6	78.9	72.8	73.3	75.8	76.0	73.0	72.4	77.1
Dodge City, Kans	72.5	77.3	68.8	70.6	73.4	77.9	70.7	72.6	72.8	74.5	71.8	75.2	78.1
Iola, Kans	73.4	79.6	71.1	71.4	73.2	79.2	74.6	73.0	76.4	76.6	75.2	75.3	77.9
Washington, D. C	72.2	73.8	70.6	69.7	72.6	70.8	73.9	71.6	74.2	74.5	75.6	71.3	77.4
Lynchburg, Va	74.6	76.6	71.6	71.0	72.8	71.2	73.4	71.9	74.3	74.8	75.6	72.1	77.5
Norfolk, Va	74.4	75.0	71.3	72.1	74.2	72.6	73.4	74.3	74.8	75.9	77.2	73.9	77.8
Parkersburg, W. Va	71.4	73.4	69.6	67.6	68.6	70.0	76.0	70.2	75.0	72.2	73.0	71.0	73.5
Charlotte, N. C	75.5	79.8	73.1	74.1	75.2	75.2	75.8	75.6	78.0	77.6	77.0	77.0	80.4
Charleston, S. C	78.2	80.6	78.0	78.0	77.6	78.6	77.4	78.4	80.0	79.8	78.6	81.2	79.8
Atlanta, Ga	76.6	80.8	75.3	75.2	75.0	76.8	76.8	76.4	78.8	76.8	75.0	77.6	80.0
Thomasville, Ga	79.5	83.2	81.1	78.6	79.4	80.3	78.6	79.0	80.6	80.0	77.6	80.6	80.2
Jacksonville, Fla	79.9	82.8	79.8	79.4	79.2	79.8	77.4	78.6	80.0	80.0	78.8	81.2	79.4
Miami, Fla	80.4	81.2	79.4	79.4	79.1	79.4	79.0	79.2	79.7	79.5	79.8	81.1	80.0
Memphis, Tenn	77.6	84.2	76.6	75.9	76.1	80.4	78.8	76.5	80.6	79.8	77.0	78.6	83.2
Nashville, Tenn	75.6	81.8	74.6	72.9	73.0	77.0	78.2	73.8	80.0	77.0	74.9	77.0	79.4
Birmingham, Ala	77.9	81.9	77.4	76.2	77.0	79.1	78.2	76.7	82.0	78.1	77.0	78.9	81.6
Mobile, Ala	80.3	83.7	81.6	79.6	78.9	82.0	80.0	79.8	81.2	80.8	78.6	81.5	80.0
New Orleans, La	80.6	84.2	83.8	81.6	80.4	83.2	80.0	80.8	81.2	81.8	79.9	83.3	81.4
Shreveport, La	80.7	83.9	80.7	79.4	80.2	83.6	77.8	78.5	80.4	80.8	79.7	82.5	84.2
Amarillo, Tex	72.8	76.2	72.4	74.6	73.6	77.3	68.9	72.4	70.2	73.4	72.4	78.0	77.2
Brownsville, Tex	82.4	82.6	84.4	84.4	83.5	84.5	82.6	81.5	82.6	82.8	83.0	82.6	82.2
El Paso, Tex	79.6	78.9	81.6	83.8	80.8	80.4	77.6	77.4	79.6	81.4	81.4	84.8	80.2
Fort Worth, Tex	79.9	83.9	80.3	80.2	80.6	84.4	76.7	78.3	78.8	80.2	80.6	83.4	85.3
Galveston, Tex	80.7	82.3	82.6	81.0	80.3	82.8	77.4	79.6	80.6	81.2	81.4	81.5	80.8
San Antonio, Tex	81.0	82.0	83.8	84.0	83.0	83.6	77.5	78.4	81.0	79.4	83.2	81.2	84.6
Oklahoma City, Okla	76.0	80.8	73.7	74.6	76.9	81.3	73.8	74.6	76.0	77.9	76.9	80.4	82.6
Little Rock, Ark	77.4	84.0	76.2	76.6	76.2	80.5	77.2	75.4	79.0	79.4	77.5	79.3	82.9
Havre, Mont	62.0	60.7	56.8	59.3	59.6	67.2	67.6	61.8	67.8	65.6	63.8	58.9	63.4
Kalispell, Mont	57.7	57.3	55.8	55.3	55.5	62.2	60.2	55.6	60.9	63.8	58.1	56.5	59.5
Cheyenne, Wyo	60.4	61.4	54.6	58.4	58.2	65.1	62.6	59.4	61.6	63.8	59.4	60.2	61.2
Sheridan, Wyo	61.1	61.1	55.6	59.0	58.0	67.9	63.0	60.8	66.6	64.6	61.8	58.2	61.2
Pueblo, Colo	69.0	70.6	66.0	69.3	67.2	74.0	68.4	68.4	68.9	71.8	69.5	71.2	72.6
Santa Fe, N. Mex	64.8	67.0	64.0	66.2	66.0	68.4	63.1	63.6	62.9	66.4	65.2	68.6	65.8
Phoenix, Ariz	84.5	84.6	83.4	83.9	84.4	88.6	85.4	84.4	84.8	86.2	80.8	87.5	86.2
Modena, Utah	63.3	61.6	60.8	63.0	62.8	70.4	64.3	62.0	64.8	65.7	59.1	65.8	61.4
Salt Lake City, Utah	67.4	64.9	64.2	65.9	65.8	75.4	74.0	68.0	71.2	73.0	64.2	70.7	65.6
Winnemucca, Nev	62.8	61.2	61.0	61.6	63.3	70.6	64.2	62.1	65.2	67.4	57.8	64.8	63.6
Boise, Idaho	65.3	63.0	61.8	61.8	62.5	73.2	66.4	64.1	68.2	70.3	62.6	66.8	66.4
Seattle, Wash	59.0	58.9	59.8	58.8	57.2	61.6	57.5	58.6	59.8	60.8	60.6	59.9	60.1
Walla Walla, Wash	66.5	64.9	66.1	64.4	64.8	73.1	66.4	65.0	70.4	73.9	65.0	69.2	70.0
Portland, Oreg	62.4	61.4	62.6	62.0	61.8	67.1	60.6	62.1	64.4	65.5	62.5	64.3	62.4
Roseburg, Oreg	62.5	61.3	62.0	61.4	62.1	67.4	60.6	62.4	64.8	67.0	63.0	65.2	63.8
Eureka, Calif	54.3	52.8	54.0	52.8	52.6	54.3	53.6	54.3	57.2	55.6	54.3	54.1	55.2
Fresno, Calif	75.8	73.6	75.0	73.2	77.0	82.5	75.6	74.9	76.0	76.5	69.4	77.4	77.0
Los Angeles, Calif	66.4	64.8	66.7	63.6	68.6	69.8	68.7	65.8	65.6	67.7	63.6	68.2	67.4
Sacramento, Calif	69.4	67.1	69.8	68.0	72.6	76.0	69.4	70.2	71.9	71.0	65.9	71.0	72.1
San Diego, Calif	63.9	63.8	64.8	61.4	63.7	66.8	66.2	63.6	63.1	64.3	62.3	65.5	64.6
San Francisco, Calif	58.5	56.6	58.9	57.4	58.6	59.2	57.8	60.2	61.4	60.0	57.2	59.8	60.7

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal*[1] *and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for July	July monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	65.4	63.4	63.6	67.4	66.4	66.0	66.6	63.6	70.6	64.6	62.0	65.2	62.6
Boston, Mass	71.7	68.6	70.1	72.6	73.3	71.0	74.0	72.4	73.2	72.0	76.0	73.8	72.4
Buffalo, N. Y	69.8	70.0	67.8	74.7	69.5	68.8	70.4	66.1	76.2	70.1	69.8	67.6	67.6
Canton, N. Y	70.5	66.6	67.2	72.5	70.0	69.1	69.1	66.0	76.4	68.7	66.2	67.4	65.5
Trenton, N. J	74.5	72.0	73.7	74.9	75.1	73.2	75.1	73.0	76.8	73.4	73.0	73.2	73.3
Pittsburgh, Pa	74.6	74.0	72.0	76.6	73.6	72.0	75.4	70.4	77.6	73.9	73.3	74.1	72.4
Scranton, Pa	71.7	70.4	70.4	74.2	72.7	70.4	72.4	69.6	76.0	71.4	70.8	69.8	69.4
Cincinnati, Ohio	75.1	79.2	73.5	78.7	74.0	72.4	77.0	72.8	79.7	75.4	75.6	72.4	74.6
Cleveland, Ohio	71.4	71.8	69.8	75.6	71.4	70.3	73.2	69.2	76.8	71.6	71.2	69.2	70.8
Evansville, Ind	78.9	82.2	77.0	82.0	78.2	76.6	82.1	77.8	84.0	78.5	80.2	75.6	79.6
Indianapolis, Ind	75.7	78.5	73.0	80.6	74.0	73.0	78.6	73.4	81.1	74.6	76.2	72.9	74.7
Chicago, Ill	73.9	75.0	70.2	78.4	72.2	71.2	77.0	71.5	81.2	73.3	74.4	70.2	73.0
Peoria, Ill	75.4	78.8	71.9	81.0	75.0	72.8	78.4	73.6	79.8	74.7	77.6	71.0	75.0
Grand Rapids, Mich	72.3	73.8	69.4	78.8	71.6	71.6	75.7	68.9	79.8	71.2	73.4	68.9	70.9
Marquette, Mich	64.9	66.4	60.2	70.4	64.6	62.9	68.4	62.2	72.4	63.0	65.9	61.8	63.3
Madison, Wis	72.1	73.8	67.7	78.1	71.8	70.3	74.8	69.1	78.1	69.6	74.2	68.3	70.7
Duluth, Minn	63.9	65.4	59.8	68.0	64.5	63.3	67.1	62.8	70.8	63.6	64.6	62.4	65.4
St. Paul, Minn	72.1	74.6	67.1	78.2	72.4	69.9	73.6	70.2	76.7	68.8	75.2	69.0	70.0
Des Moines, Iowa	75.4	78.6	71.0	81.4	76.6	75.6	79.8	73.8	79.6	73.0	78.2	71.9	76.3
Dubuque, Iowa	74.1	76.4	69.6	80.3	73.8	72.3	76.6	71.2	79.0	71.0	76.8	70.0	72.5
St. Louis, Mo	78.8	83.1	76.4	84.2	78.9	78.4	81.6	78.8	83.2	78.8	80.6	75.0	79.0
Springfield, Mo	76.8	78.8	74.0	80.6	76.5	76.2	78.6	76.0	79.2	76.4	77.2	73.2	76.6
Bismarck, N. Dak	69.8	73.3	62.6	75.0	73.2	68.0	73.3	71.0	71.2	67.9	75.3	67.5	68.6
Devils Lake, N. Dak	68.1	71.8	62.4	72.9	70.0	63.2	70.0	67.2	70.0	65.7	71.8	66.2	65.8
Pierre, S. Dak	75.3	78.7	67.5	80.1	78.2	73.2	76.8	73.1	77.3	72.0	77.0	71.6	73.9
North Platte, Nebr	72.9	76.0	69.4	80.0	76.2	74.7	77.2	74.8	76.8	72.7	75.9	72.6	76.2
Omaha, Nebr	76.7	79.4	71.3	83.0	79.0	77.2	81.8	76.4	79.6	74.0	79.5	73.2	78.0
Concordia, Kans	78.0	82.1	73.7	81.2	81.1	78.2	81.6	77.4	79.2	75.4	78.8	75.4	79.4
Dodge City, Kans	78.4	79.3	74.3	80.3	80.4	78.5	79.6	77.9	78.4	77.2	78.3	75.1	79.4
Iola, Kans	78.1	80.4	75.0	82.4	80.5	78.9	80.6	77.7	80.8	77.6	80.2	74.8	80.4
Washington, D. C	76.8	75.9	76.1	77.8	76.6	74.4	77.2	75.0	79.3	76.6	75.7	75.0	76.8
Lynchburg, Va	77.5	76.0	76.2	76.4	76.4	72.8	77.2	74.8	78.8	76.4	76.5	74.0	78.2
Norfolk, Va	78.7	76.7	77.4	77.4	77.2	75.0	77.8	76.4	79.8	78.0	77.0	76.6	79.6
Parkersburg, W. Va	75.4	76.0	73.7	77.7	74.4	72.6	77.2	72.0	78.6	75.3	74.7	72.6	74.5
Charlotte, N. C	78.4	78.4	79.4	76.0	77.4	76.3	78.6	77.8	79.5	78.8	78.6	77.0	80.4
Charleston, S. C	81.4	81.0	82.2	79.1	80.8	79.4	80.6	80.0	80.6	82.3	80.1	81.2	82.8
Atlanta, Ga	78.1	79.1	78.6	76.4	78.0	76.6	77.3	77.6	78.8	77.8	77.1	78.2	80.8
Thomasville, Ga	81.8	81.8	82.6	79.4	80.4	79.2	79.6	80.4	80.0	80.9	78.3	80.4	81.6
Jacksonville, Fla	82.1	82.0	81.8	80.4	81.0	79.0	81.6	80.2	79.4	82.0	80.0	81.2	82.2
Miami, Fla	81.9	81.2	81.9	80.8	81.0	80.4	80.8	81.2	81.2	80.6	80.7	82.0	82.5
Memphis, Tenn	80.7	83.2	79.8	82.2	79.0	79.0	82.1	79.4	82.6	80.0	80.2	79.8	82.2
Nashville, Tenn	79.1	81.4	78.6	78.8	77.2	76.2	80.6	77.6	82.0	78.2	78.5	76.5	80.4
Birmingham, Ala	80.2	80.8	79.4	77.8	79.5	77.6	79.0	78.8	81.8	79.5	78.5	79.8	81.4
Mobile, Ala	81.4	81.8	82.9	80.0	81.4	81.0	81.6	81.0	82.2	81.0	79.8	82.0	81.6
New Orleans, La	82.4	82.6	84.7	82.3	82.6	83.1	82.6	82.3	83.1	82.4	80.2	84.0	82.6
Shreveport, La	83.2	85.5	81.4	83.4	83.3	81.2	82.6	81.5	82.8	81.8	82.4	83.8	85.4
Amarillo, Tex	76.8	77.8	74.6	79.0	79.4	78.3	76.2	78.1	74.8	78.8	78.3	75.4	78.4
Brownsville, Tex	83.6	85.0	85.0	83.4	84.2	85.6	83.5	84.9	85.2	84.6	83.6	83.1	84.0
El Paso, Tex	84.1	78.0	81.1	81.3	83.9	81.0	79.4	82.6	79.8	81.9	82.1	81.0	82.4
Fort Worth, Tex	83.6	86.6	84.9	84.8	84.6	85.1	81.4	82.8	83.4	85.0	85.2	83.6	88.2
Galveston, Tex	83.4	83.0	83.0	82.8	83.3	83.6	82.0	82.2	82.2	82.2	81.3	82.7	82.9
San Antonio, Tex	85.8	85.6	84.3	82.8	84.8	85.2	80.7	83.8	83.6	84.1	83.6	82.5	86.0
Oklahoma City, Okla	80.6	85.2	78.2	82.0	82.6	82.8	81.4	80.0	80.3	82.0	84.0	79.2	83.2
Little Rock, Ark	80.9	82.7	80.0	82.6	80.1	80.4	82.2	82.4	82.2	80.6	80.0	79.2	81.5
Havre, Mont	68.3	72.0	62.4	68.3	73.7	68.0	71.8	72.4	69.8	67.2	71.2	68.6	69.1
Kalispell, Mont	64.1	66.7	60.0	62.7	67.4	64.7	67.0	69.6	65.0	64.6	68.0	65.6	68.4
Cheyenne, Wyo	66.7	66.6	62.3	69.1	67.4	65.7	69.8	65.8	66.8	65.5	67.5	65.8	68.0
Sheridan, Wyo	67.3	70.4	61.2	70.8	71.2	66.4	72.6	68.6	69.9	66.0	72.9	66.0	69.4
Pueblo, Colo	74.2	73.2	71.1	76.1	76.0	73.8	76.0	74.4	74.2	74.9	75.0	74.2	75.2
Santa Fe, N. Mex	69.0	67.0	67.6	68.8	71.5	69.3	67.8	68.7	67.1	70.2	69.7	67.8	69.8
Phoenix, Ariz	89.8	88.8	87.3	89.0	90.0	88.3	88.2	90.6	89.2	90.6	89.2	90.2	92.7
Modena, Utah	70.6	69.0	69.2	69.2	71.5	68.8	73.4	69.8	71.9	72.1	72.0	70.4	72.0
Salt Lake City, Utah	75.7	75.2	75.2	76.8	79.0	75.6	80.3	78.6	77.4	76.6	78.3	77.5	78.8
Winnemucca, Nev	70.6	72.0	69.7	69.3	75.9	70.4	74.0	70.6	72.0	71.4	72.2	72.1	74.4
Boise, Idaho	72.9	75.2	70.6	70.8	77.4	74.4	75.6	76.2	74.1	75.6	75.4	74.0	78.9
Seattle, Wash	63.1	64.2	64.3	61.1	63.1	63.0	63.0	64.2	60.8	62.9	64.4	64.5	65.0
Walla Walla, Wash	74.0	77.2	73.0	69.8	77.2	75.1	76.4	76.5	73.8	78.0	76.0	75.4	79.0
Portland, Oreg	66.7	68.6	67.2	64.2	69.0	67.8	68.0	68.0	65.7	68.2	67.8	67.0	69.8
Roseburg, Oreg	67.4	69.6	67.8	64.8	71.2	67.0	69.3	67.8	66.9	71.0	68.6	68.3	71.4
Eureka, Calif	55.5	54.1	56.8	56.4	54.8	55.4	54.2	56.9	53.8	55.1	58.2	54.6	56.0
Fresno, Calif	82.1	80.5	80.3	79.5	86.0	79.9	82.9	79.4	83.9	83.8	79.8	80.5	83.8
Los Angeles, Calif	70.2	66.8	70.0	66.8	72.3	69.9	71.0	71.2	71.8	69.5	70.0	69.4	72.2
Sacramento, Calif	73.2	71.0	72.8	74.2	78.6	72.2	72.8	71.6	75.3	75.9	73.6	72.2	75.4
San Diego, Calif	67.2	65.8	67.5	65.0	68.9	68.0	68.6	67.0	68.4	67.7	67.0	67.0	70.2
San Francisco, Calif	58.5	57.0	60.2	60.0	59.8	58.8	57.0	57.8	59.8	60.2	60.8	59.0	61.2

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal [1] and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for Aug.	August monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	62.5	61.9	61.4	65.2	64.7	62.6	60.8	66.6	61.0	63.2	59.2	63.6	63.5
Boston, Mass	69.9	70.4	69.1	71.8	72.8	70.4	68.8	72.0	69.8	70.4	69.4	71.8	71.2
Buffalo, N. Y	68.6	68.8	66.2	71.6	68.2	70.6	66.9	70.2	68.3	68.2	67.2	67.8	69.4
Canton, N. Y	67.8	65.6	64.5	69.2	67.8	67.0	65.2	69.0	66.8	66.2	64.5	65.8	67.0
Trenton, N. J	73.0	74.4	70.9	74.0	74.8	75.4	70.6	72.4	70.2	71.0	71.6	73.4	72.2
Pittsburgh, Pa	72.9	73.2	69.1	74.2	72.2	76.6	70.0	71.6	70.2	70.8	71.0	72.2	72.3
Scranton, Pa	69.8	70.8	67.4	71.8	71.5	73.3	67.6	70.8	67.8	68.7	68.4	69.3	69.0
Cincinnati, Ohio	73.6	76.7	68.6	76.3	73.2	78.6	73.2	71.2	72.8	73.7	74.0	74.3	74.0
Cleveland, Ohio	70.0	71.8	67.1	72.4	69.8	74.5	69.8	69.4	69.3	69.6	69.0	70.0	70.9
Evansville, Ind	77.4	78.0	71.4	79.0	76.6	82.4	77.2	75.6	77.0	77.8	78.4	78.2	79.4
Indianapolis, Ind	73.7	74.6	67.5	76.6	72.5	78.4	73.4	72.0	73.2	74.4	73.2	73.4	74.3
Chicago, Ill	72.8	74.2	66.6	76.6	70.4	75.7	73.4	71.0	72.8	73.2	70.8	71.0	73.6
Peoria, Ill	72.5	75.4	67.2	76.0	70.8	77.5	71.9	72.2	73.8	74.5	73.4	72.7	73.9
Grand Rapids, Mich	69.7	71.0	65.2	72.8	68.6	74.1	69.8	69.9	70.6	71.2	68.2	68.0	71.6
Marquette, Mich	63.8	63.0	60.4	66.7	60.4	63.6	65.2	62.8	64.2	64.8	60.8	63.4	67.8
Madison, Wis	69.8	70.3	63.8	72.8	67.0	72.6	69.0	68.8	70.0	71.2	67.9	68.2	70.6
Duluth, Minn	62.6	62.0	61.6	65.1	59.8	64.6	65.0	63.6	63.6	64.2	60.3	61.9	67.5
St. Paul, Minn	69.4	68.8	65.4	71.6	66.5	70.4	68.5	69.2	70.0	72.0	66.9	67.0	71.3
Des Moines, Iowa	73.1	75.9	67.3	75.8	70.9	78.7	73.4	71.4	73.2	74.8	71.4	73.6	73.8
Dubuque, Iowa	71.7	72.8	65.6	75.0	68.6	74.6	70.8	69.6	71.6	72.5	69.6	70.0	72.2
St. Louis, Mo	77.5	78.9	70.4	78.7	75.3	82.6	77.1	75.1	77.5	79.1	77.9	78.2	78.3
Springfield, Mo	75.7	76.4	68.8	78.8	72.8	80.0	77.2	72.4	77.0	77.0	78.6	77.0	77.2
Bismarck, N. Dak	67.3	64.5	65.2	67.4	66.6	68.8	70.6	70.4	70.2	72.6	65.4	65.9	69.6
Devils Lake, N. Dak	65.1	63.2	64.6	65.6	64.4	65.2	67.0	68.4	65.5	70.0	62.0	63.4	67.8
Pierre, S. Dak	72.8	71.9	68.0	71.6	71.0	74.2	75.1	70.8	74.0	76.6	69.8	72.4	76.2
North Platte, Nebr	70.8	74.0	68.2	74.0	69.4	74.0	73.0	70.0	73.0	76.8	70.2	74.6	73.9
Omaha, Nebr	74.4	77.0	68.4	76.5	71.8	80.8	75.0	72.6	75.6	77.7	72.9	76.0	75.5
Concordia, Kans	76.5	79.3	70.1	78.7	72.8	82.5	77.0	72.4	78.9	80.6	76.2	79.5	77.2
Dodge City, Kans	77.7	77.1	70.0	78.6	73.6	80.6	79.4	72.4	77.8	80.0	77.9	79.0	76.0
Iola, Kans	76.3	78.4	70.0	80.9	74.1	83.8	78.4	74.0	78.4	79.4	80.8	78.4	79.0
Washington, D. C	75.0	76.4	74.0	75.2	75.9	77.6	73.6	74.8	72.8	73.1	74.4	74.8	73.0
Lynchburg, Va	75.6	76.3	74.2	75.3	75.4	77.6	73.9	73.7	74.5	72.8	74.8	76.0	74.0
Norfolk, Va	77.4	78.2	78.0	76.9	77.8	79.6	76.6	76.8	76.4	75.0	77.4	77.6	76.2
Parkersburg, W. Va	73.9	74.9	69.8	75.2	73.6	78.6	72.4	72.9	72.4	72.3	73.0	74.9	74.2
Charlotte, N. C	77.1	77.7	76.0	77.6	76.8	78.8	77.0	74.9	76.1	74.9	78.4	80.0	78.2
Charleston, S. C	81.0	81.3	82.0	81.8	80.2	82.2	81.0	80.2	80.8	78.1	81.8	82.2	81.2
Atlanta, Ga	77.0	76.8	77.2	78.0	75.4	78.8	76.4	75.1	76.7	75.8	77.4	80.4	79.8
Thomasville, Ga	81.0	81.0	82.2	81.0	80.4	80.4	80.8	80.0	81.0	79.4	79.9	82.6	80.9
Jacksonville, Fla	81.7	82.0	82.8	81.6	81.2	81.2	81.5	80.6	80.5	78.8	81.9	82.2	80.2
Miami, Fla	82.0	81.6	82.6	80.6	81.3	81.5	82.6	80.0	81.1	81.2	81.6	82.9	82.1
Memphis, Tenn	79.4	78.7	75.9	80.8	77.8	82.6	80.4	77.4	80.8	79.7	80.5	81.6	81.4
Nashville, Tenn	77.8	77.6	74.1	78.4	75.6	81.2	77.6	75.0	78.0	76.8	76.4	79.6	79.4
Birmingham, Ala	79.2	78.0	77.6	79.2	77.8	81.5	78.6	77.2	80.3	79.4	78.4	82.6	81.0
Mobile, Ala	81.0	80.6	81.4	82.0	81.0	81.2	81.9	80.2	82.5	81.1	80.6	83.8	82.4
New Orleans, La	82.2	81.8	82.7	83.4	82.6	82.0	83.2	81.3	84.2	83.0	82.0	85.8	82.6
Shreveport, La	82.0	80.5	78.4	83.2	80.6	83.4	82.6	79.8	84.0	82.1	83.0	86.0	84.0
Amarillo, Tex	75.7	75.6	71.4	76.6	74.0	78.0	77.6	71.6	76.4	81.6	77.2	78.2	74.8
Brownsville, Tex	83.9	85.1	86.0	82.6	85.4	85.7	86.2	86.2	84.2	84.8	84.4	85.0	84.2
El Paso, Tex	79.2	78.5	77.7	77.8	79.2	77.4	81.0	77.0	80.4	82.6	78.8	82.7	77.8
Fort Worth, Tex	83.0	80.0	79.1	83.6	84.2	87.0	82.0	78.1	86.4	85.2	85.2	87.0	84.8
Galveston, Tex	83.0	82.2	81.3	83.0	83.5	82.7	83.4	82.4	83.6	83.1	82.4	85.2	82.1
San Antonio, Tex	83.5	82.5	82.5	82.0	85.6	85.1	82.2	82.9	85.2	85.8	84.2	86.0	84.0
Oklahoma City, Okla	79.7	79.6	73.4	83.0	77.7	85.6	82.0	75.3	82.9	84.4	83.6	86.0	81.2
Little Rock, Ark	79.8	78.2	75.3	81.3	77.7	82.8	81.0	77.4	81.4	81.5	81.5	82.8	81.1
Havre, Mont	65.4	64.4	70.0	64.9	65.5	66.6	70.4	69.6	69.0	70.0	65.0	64.8	65.7
Kalispell, Mont	62.8	63.1	69.1	61.6	63.5	60.1	65.0	63.6	64.0	65.8	64.0	61.2	61.8
Cheyenne, Wyo	65.6	65.4	61.0	63.8	61.4	65.0	68.0	62.8	65.6	69.0	63.7	66.4	64.0
Sheridan, Wyo	65.4	65.1	65.4	65.9	64.0	65.8	68.2	67.0	68.0	71.1	64.4	64.5	66.6
Pueblo, Colo	72.7	72.6	67.9	71.9	70.4	73.9	74.6	69.8	72.8	76.5	70.8	74.6	71.6
Santa Fe, N. Mex	67.4	65.8	65.4	66.8	67.8	67.8	69.0	65.0	66.0	70.7	65.8	68.0	65.6
Phoenix, Ariz	88.5	89.2	89.1	87.0	87.2	84.6	88.6	86.4	87.1	89.4	87.2	89.4	87.2
Modena, Utah	69.2	69.8	69.7	65.8	69.4	66.5	71.3	69.0	68.4	69.6	67.2	68.8	66.1
Salt Lake City, Utah	74.5	75.6	78.0	72.9	73.9	72.4	77.4	73.7	74.6	76.2	73.0	75.4	73.0
Winnemucca, Nev	69.3	70.6	72.0	66.4	71.0	65.7	71.2	68.6	69.8	67.8	67.8	68.1	66.6
Boise, Idaho	71.8	72.8	78.2	70.4	74.0	67.3	74.4	72.2	74.0	74.4	73.1	70.4	70.8
Seattle, Wash	63.1	63.2	66.8	63.6	65.2	62.6	63.0	64.4	62.0	62.7	65.7	62.4	62.6
Walla Walla, Wash	72.7	75.2	79.3	74.0	76.8	70.0	75.6	73.8	74.6	74.2	75.4	72.8	73.6
Portland, Oreg	66.7	68.0	71.2	68.0	70.3	67.4	68.6	69.3	67.0	67.2	70.6	66.5	66.0
Roseburg, Oreg	68.0	68.6	70.7	68.2	69.4	67.4	69.6	70.0	67.6	66.6	70.0	68.0	67.4
Eureka, Calif	56.0	54.6	57.9	56.0	54.0	56.6	55.9	56.1	55.8	56.9	59.7	56.4	56.2
Fresno, Calif	80.7	80.3	81.9	78.2	81.2	79.2	81.2	81.5	79.9	79.1	79.0	79.8	78.6
Los Angeles, Calif	71.1	68.2	72.6	68.6	70.0	71.7	70.2	72.4	70.6	73.3	69.6	69.1	69.9
Sacramento, Calif	72.9	71.2	75.0	71.8	72.6	74.0	72.8	76.0	72.1	72.8	73.5	72.2	71.0
San Diego, Calif	68.7	66.2	69.5	67.0	68.6	69.8	68.4	70.4	68.2	70.7	67.8	67.0	68.8
San Francisco, Calif	59.1	58.2	61.3	58.5	57.6	60.9	58.4	60.1	59.6	60.4	61.7	59.1	61.2

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal [1] and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for Sept.	September monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	55.0	56.8	58.4	56.2	53.4	52.2	53.4	56.6	57.2	55.4	56.2	53.5	52.7
Boston, Mass	63.2	64.6	66.8	65.0	60.2	61.2	63.9	65.2	68.5	65.2	64.2	62.2	64.0
Buffalo, N. Y	62.4	61.6	64.6	62.0	59.4	56.0	63.1	64.3	67.6	64.4	62.9	58.3	62.4
Canton, N. Y	59.3	57.4	61.4	60.1	56.6	54.4	58.8	61.4	63.2	61.2	59.4	55.9	57.8
Trenton, N. J	66.9	65.2	69.4	66.1	62.0	62.6	66.0	67.2	70.6	67.2	67.6	63.1	68.6
Pittsburgh, Pa	66.4	63.6	68.8	64.2	62.1	59.8	66.4	66.8	70.8	69.6	67.4	61.4	70.6
Scranton, Pa	62.9	60.9	65.8	62.2	59.4	58.6	63.9	63.9	68.1	65.6	64.0	59.0	64.2
Cincinnati, Ohio	67.1	68.4	68.4	65.2	64.9	59.9	69.6	67.8	72.3	70.6	68.3	62.5	73.9
Cleveland, Ohio	63.9	62.6	67.0	63.8	60.5	58.2	66.4	65.8	69.0	67.0	64.7	60.4	67.2
Evansville, Ind	70.7	69.6	72.6	69.4	70.4	63.5	74.4	72.8	75.6	74.6	70.8	66.2	78.2
Indianapolis, Ind	66.9	66.4	68.1	65.4	65.2	59.8	70.3	69.4	70.8	71.2	67.0	61.7	73.2
Chicago, Ill	66.3	66.6	67.2	64.4	63.7	59.6	68.9	69.3	70.0	69.5	65.1	60.3	70.2
Peoria, Ill	64.3	66.2	67.8	63.6	63.7	58.2	68.2	68.5	70.0	69.6	65.4	60.4	71.6
Grand Rapids, Mich	62.7	62.6	64.4	61.4	60.3	56.2	65.3	65.9	67.8	65.2	63.0	58.2	66.2
Marquette, Mich	57.5	58.2	57.6	55.1	55.8	49.3	59.2	60.8	62.2	61.6	56.8	53.2	58.2
Madison, Wis	62.4	62.5	62.6	59.4	60.0	55.9	64.2	65.5	66.0	65.1	61.7	56.8	65.9
Duluth, Minn	55.1	56.0	55.6	53.0	53.6	50.4	55.8	60.3	58.2	58.2	56.4	52.7	56.4
St. Paul, Minn	61.3	61.8	60.0	59.2	59.4	54.6	63.9	65.0	63.2	65.0	62.4	56.7	65.2
Des Moines, Iowa	65.6	65.8	65.6	64.3	64.0	60.2	68.9	68.0	69.4	68.0	65.2	60.5	70.4
Dubuque, Iowa	64.0	64.4	64.4	62.2	61.8	57.4	66.1	66.4	66.9	65.9	62.8	58.2	67.8
St. Louis, Mo	70.5	69.6	72.4	68.3	69.0	63.6	75.6	72.5	74.4	73.8	69.0	65.0	77.2
Springfield, Mo	68.9	70.6	70.7	68.2	68.0	62.8	72.6	70.0	74.3	72.7	69.2	63.8	74.6
Bismarck, N. Dak	58.1	61.0	56.0	56.8	57.6	53.9	61.9	60.3	59.2	61.4	61.0	57.2	59.8
Devils Lake, N. Dak	55.6	58.4	55.0	55.0	55.9	50.4	57.1	59.4	56.6	59.4	58.2	54.3	56.2
Pierre, S. Dak	63.8	66.0	61.2	62.2	62.6	58.9	66.4	64.5	63.4	67.6	64.4	61.9	65.6
North Platte, Nebr	62.1	65.5	62.1	62.8	63.6	58.9	67.8	64.2	65.0	67.8	63.8	60.5	67.2
Omaha, Nebr	66.8	68.2	66.4	65.4	66.2	62.4	70.8	68.8	71.4	71.0	67.4	62.2	70.9
Concordia, Kans	68.3	72.4	68.6	67.2	68.4	63.2	71.4	69.7	73.8	73.0	69.6	64.4	72.3
Dodge City, Kans	69.4	72.6	68.4	67.0	69.4	63.4	73.1	69.4	73.0	72.4	69.6	66.0	70.3
Iola, Kans	68.6	71.8	70.6	68.4	69.8	63.8	73.0	71.0	75.0	72.8	71.9	65.7	74.6
Washington, D. C	68.1	66.0	71.0	66.6	63.8	64.2	69.4	68.8	74.4	69.9	69.6	64.3	72.8
Lynchburg, Va	69.0	66.7	70.6	66.8	64.9	64.3	69.8	69.5	75.5	70.9	70.0	64.0	74.6
Norfolk, Va	71.6	69.4	74.2	70.3	68.2	69.1	72.6	73.9	77.8	73.6	73.6	68.8	75.4
Parkersburg, W. Va	67.3	65.5	69.4	64.2	64.0	61.0	68.6	68.8	72.8	70.4	68.4	62.8	74.0
Charlotte, N. C	71.5	69.2	73.2	70.0	67.6	67.0	72.7	72.7	79.2	73.5	73.7	67.6	80.5
Charleston, S. C	76.6	74.4	79.2	75.1	73.4	73.2	76.3	77.8	81.9	76.8	77.8	74.6	82.2
Atlanta, Ga	72.4	71.4	74.9	71.4	70.0	68.2	74.2	73.9	79.4	75.3	74.6	68.2	80.0
Thomasville, Ga	76.8	75.3	80.3	76.0	75.2	74.0	77.6	78.8	82.2	78.1	78.6	75.6	84.6
Jacksonville, Fla	78.3	77.2	79.8	76.8	75.9	75.8	77.4	78.8	81.6	76.8	78.6	77.2	83.2
Miami, Fla	81.5	78.8	81.0	79.6	79.2	79.5	80.4	80.4	80.9	80.1	80.0	80.8	82.2
Memphis, Tenn	73.6	73.8	76.0	72.0	72.2	67.6	76.2	74.8	80.0	76.3	73.8	69.2	83.0
Nashville, Tenn	71.8	71.0	73.8	69.2	70.3	65.4	72.8	72.2	78.0	74.2	71.8	67.9	84.4
Birmingham, Ala	74.8	72.5	76.3	73.6	72.6	70.0	75.9	76.3	81.6	78.8	75.8	72.1	84.2
Mobile, Ala	78.1	76.8	79.8	77.0	76.8	74.3	78.6	79.9	82.2	79.4	79.6	76.3	83.7
New Orleans, Ala	79.2	78.8	81.2	79.3	78.2	76.9	80.2	81.5	83.4	80.8	81.2	79.4	85.2
Shreveport, La	76.9	77.2	77.6	76.2	74.1	72.2	76.4	78.6	81.7	78.8	75.6	75.0	83.2
Amarillo, Tex	69.3	72.8	68.8	67.8	69.4	65.4	71.2	70.8	73.5	73.1	69.8	67.6	68.6
Brownsville, Tex	80.6	80.9	82.2	80.0	78.8	80.8	82.3	84.4	83.0	80.7	83.0	80.2	80.7
El Paso, Tex	73.9	74.3	73.6	73.0	73.8	73.6	72.6	75.1	76.5	75.6	73.5	74.6	76.6
Fort Worth, Tex	76.9	77.4	77.1	77.4	75.8	73.0	75.6	77.9	81.9	79.4	78.5	74.3	82.0
Galveston, Tex	80.1	80.2	81.2	79.4	79.4	77.0	80.0	81.4	82.6	80.2	79.8	80.2	81.0
San Antonio, Tex	79.0	79.6	79.8	78.0	79.3	76.4	77.8	82.1	81.7	79.6	79.2	78.4	80.8
Oklahoma City, Okla	72.8	75.5	73.8	72.2	73.3	68.0	74.3	73.8	78.0	77.0	74.0	70.1	76.4
Little Rock, Ark	74.1	74.6	76.0	72.8	72.5	69.0	75.3	75.2	79.6	77.7	73.2	69.8	81.9
Havre, Mont	56.4	56.8	51.8	55.4	56.6	55.2	57.0	58.7	52.6	60.8	57.8	57.0	54.9
Kalispell, Mont	53.5	52.6	51.4	53.0	56.8	56.8	54.0	54.2	48.8	57.8	57.0	53.8	53.9
Cheyenne, Wyo	57.0	58.0	54.6	55.8	58.6	54.1	59.0	57.1	58.4	63.8	55.8	54.6	58.0
Sheridan, Wyo	56.3	57.2	52.8	55.2	57.9	55.0	59.6	57.5	55.0	60.8	56.6	54.8	56.6
Pueblo, Colo	64.6	66.8	64.2	63.2	65.5	60.8	67.5	64.2	66.7	68.3	63.0	63.4	65.9
Santa Fe, N. Mex	60.9	63.0	59.6	60.8	62.6	60.4	61.4	60.4	63.5	63.8	58.6	60.4	61.4
Phoenix, Ariz	82.7	84.5	79.9	80.9	83.2	82.4	81.5	80.4	82.6	84.0	80.2	85.6	80.4
Modena, Utah	60.0	60.6	58.8	60.4	60.3	60.8	61.2	59.0	60.2	65.1	58.2	60.6	57.1
Salt Lake City, Utah	64.4	64.4	62.4	65.3	66.4	66.6	66.8	64.7	62.6	69.2	64.2	64.4	63.6
Winnemucca, Nev	59.2	57.8	57.1	59.1	61.4	61.6	59.4	60.0	57.4	62.4	60.4	58.5	57.0
Boise, Idaho	61.9	61.4	60.4	62.5	66.0	65.2	62.2	63.2	57.6	66.0	65.7	63.8	61.4
Seattle, Wash	58.1	56.7	59.1	58.8	58.9	62.2	59.6	57.8	57.0	59.8	60.8	59.5	59.5
Walla Walla, Wash	63.8	61.6	63.4	64.2	66.8	68.8	63.0	63.4	59.6	68.4	67.1	65.2	64.5
Portland, Oreg	61.7	59.4	62.4	62.5	63.1	67.4	62.5	61.2	60.5	63.8	64.5	63.4	62.9
Roseburg, Oreg	62.9	60.1	61.7	62.6	63.5	66.8	61.0	61.2	60.5	65.1	64.3	62.4	62.0
Eureka, Calif	55.9	55.0	54.5	55.8	56.4	56.6	56.5	57.2	55.4	56.0	57.2	54.9	57.8
Fresno, Calif	73.4	71.6	73.0	73.2	75.4	72.5	73.2	72.2	72.8	79.1	76.4	75.2	69.4
Los Angeles, Calif	69.0	67.9	68.0	65.2	70.8	72.2	68.3	68.4	69.3	73.1	70.4	70.0	69.2
Sacramento, Calif	69.3	67.5	68.9	70.2	71.4	67.4	69.7	67.5	70.6	75.6	72.7	70.8	66.4
San Diego, Calif	67.1	66.0	66.4	64.4	68.2	70.6	66.5	66.2	66.8	70.0	68.2	66.4	66.6
San Francisco, Calif	60.9	60.8	62.4	62.2	64.0	62.2	62.0	60.4	63.3	63.3	64.0	62.4	62.7

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal* [1] *and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for Oct.	October monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	45.6	46.6	46.7	45.7	42.1	45.4	43.0	50.4	45.4	43.0	47.0	46.5	36.4
Boston, Mass	53.6	57.0	55.7	55.5	51.9	56.2	55.1	59.8	55.2	55.1	55.5	54.6	49.3
Buffalo, N. Y	51.9	55.2	52.8	52.6	45.5	53.4	55.2	57.2	52.2	51.9	50.3	52.7	43.0
Canton, N. Y	47.2	50.4	50.4	48.2	42.8	48.0	47.5	52.8	47.8	46.3	46.6	47.3	39.8
Trenton, N. J	55.6	59.0	56.6	56.1	51.6	58.1	58.5	59.6	55.0	57.7	54.8	56.2	49.7
Pittsburgh, Pa	55.7	58.4	56.2	54.8	48.9	58.2	60.6	59.6	54.0	56.4	52.3	56.4	47.2
Scranton, Pa	51.9	55.8	53.4	52.2	47.4	55.4	55.6	57.5	52.6	54.3	51.6	51.8	45.5
Cincinnati, Ohio	55.7	60.5	58.0	54.9	48.0	59.0	61.8	60.2	55.2	57.9	53.8	59.4	48.4
Cleveland, Ohio	53.6	56.8	55.4	52.7	46.5	56.0	58.8	59.5	53.6	55.4	52.2	55.6	45.2
Evansville, Ind	59.4	60.8	61.8	60.0	51.5	62.4	64.2	64.2	58.6	62.4	57.6	65.0	51.2
Indianapolis, Ind	55.7	58.4	57.6	56.1	46.9	58.3	60.4	61.6	54.9	59.1	53.1	61.0	46.6
Chicago, Ill	55.1	59.4	56.4	54.4	45.0	57.4	57.2	61.9	54.8	57.6	52.5	59.8	45.0
Peoria, Ill	52.0	57.2	55.6	54.2	44.2	56.2	55.8	60.2	55.6	58.0	50.4	59.2	43.4
Grand Rapids, Mich	51.2	56.5	52.8	51.1	42.9	53.8	54.6	58.8	52.0	53.0	49.6	56.4	42.9
Marquette, Mich	46.7	52.9	47.5	45.6	38.5	47.8	45.0	56.0	47.6	46.6	46.4	53.0	38.0
Madison, Wis	50.3	55.4	51.8	49.2	40.0	52.9	50.2	57.4	50.8	53.9	48.2	56.6	39.9
Duluth, Minn	44.1	49.2	44.8	42.0	33.8	45.4	39.4	51.8	45.6	46.0	44.4	50.8	34.2
St. Paul, Minn	48.6	55.4	50.6	46.4	38.3	50.2	44.2	55.6	50.6	52.3	47.2	55.8	37.7
Des Moines, Iowa	53.4	57.4	56.8	53.2	44.7	56.6	52.1	60.2	56.5	57.4	50.0	59.6	41.6
Dubuque, Iowa	51.9	56.7	54.0	51.6	41.9	54.0	52.0	58.6	52.9	55.4	48.4	57.5	40.9
St. Louis, Mo	58.8	60.8	61.7	59.2	51.1	62.3	60.8	64.0	59.6	62.2	54.9	64.6	49.5
Springfield, Mo	58.2	58.8	60.4	59.4	50.5	61.6	59.9	61.3	58.8	61.0	53.8	63.7	49.5
Bismarck, N. Dak	44.9	51.0	48.6	41.8	36.4	47.5	34.6	50.6	48.9	47.6	45.6	53.0	34.4
Devils Lake, N. Dak	40.5	50.8	45.4	38.4	32.4	44.4	31.8	48.9	46.4	44.7	42.8	50.4	32.4
Pierre, S. Dak	49.8	54.0	53.8	47.8	42.9	53.4	40.8	55.2	53.0	52.2	49.3	57.1	38.8
North Platte, Nebr	49.7	53.4	54.6	49.4	45.1	54.4	45.3	55.3	54.9	53.6	47.1	56.8	40.7
Omaha, Nebr	54.3	57.8	58.2	53.8	46.6	57.7	50.6	61.0	58.6	59.6	51.8	61.4	42.7
Concordia, Kans	55.9	58.6	58.4	56.1	49.0	59.6	52.1	60.8	59.4	59.8	51.6	61.5	45.4
Dodge City, Kans	56.1	57.8	58.0	56.2	50.2	59.8	53.3	59.8	59.6	59.0	51.0	59.4	47.4
Iola, Kans	56.9	58.9	59.4	58.9	50.6	61.6	57.4	61.9	60.0	60.4	54.4	62.4	49.0
Washington, D. C	57.4	60.2	58.6	56.6	52.0	60.6	63.2	61.2	57.0	59.4	56.1	57.4	52.0
Lynchburg, Va	58.5	60.9	60.6	57.7	53.0	61.0	65.4	60.8	57.6	60.6	56.6	58.4	52.8
Norfolk, Va	62.5	63.9	64.4	63.0	58.2	65.2	70.0	64.6	62.0	64.3	61.0	62.0	58.7
Parkersburg, W. Va	56.1	59.2	57.8	55.3	50.0	59.2	63.4	59.8	55.7	57.6	54.4	57.6	50.9
Charlotte, N. C	61.7	62.2	64.4	61.0	57.0	64.0	69.9	62.7	60.8	62.8	61.3	60.9	59.4
Charleston, S. C	67.8	68.4	70.8	67.4	63.7	70.7	76.8	67.5	66.6	68.7	66.4	65.8	68.8
Atlanta, Ga	63.0	62.4	65.3	62.3	56.6	65.8	70.8	64.7	61.0	63.2	62.1	63.4	61.2
Thomasville, Ga	68.2	68.2	70.6	68.9	64.4	73.0	78.5	67.1	67.0	69.7	67.0	66.3	70.4
Jacksonville, Fla	71.1	71.5	73.4	69.5	67.0	74.5	78.6	68.8	69.2	72.6	69.9	68.4	72.6
Miami, Fla	77.8	76.0	78.9	77.2	77.4	78.9	80.1	75.2	77.2	78.0	75.8	76.8	80.0
Memphis, Tenn	63.3	63.3	65.6	64.0	56.6	66.6	68.0	66.5	62.9	65.3	60.8	67.2	58.9
Nashville, Tenn	61.0	61.9	63.0	60.8	53.2	64.0	68.2	62.6	58.5	62.4	59.2	63.6	57.0
Birmingham, Ala	64.8	63.8	66.9	65.6	57.9	68.2	74.5	66.4	62.8	65.8	63.6	66.6	63.6
Mobile, Ala	69.3	68.8	70.9	68.8	63.7	73.8	77.5	68.8	68.0	68.7	67.5	68.4	70.4
New Orleans, La	71.0	70.3	73.4	71.6	66.4	74.6	79.5	71.4	71.2	71.6	70.2	72.0	72.2
Shreveport, La	66.6	66.8	67.9	67.4	61.6	68.8	71.4	66.9	66.8	67.0	64.5	69.4	64.2
Amarillo, Tex	57.7	58.0	59.0	57.2	55.7	60.0	57.8	60.7	62.8	60.4	52.1	60.0	50.2
Brownsville, Tex	74.9	75.1	75.2	74.8	73.2	77.4	80.2	75.8	75.8	73.7	73.8	74.9	74.5
El Paso, Tex	63.5	63.5	63.9	64.7	64.6	64.6	65.1	63.2	66.5	64.0	63.1	66.8	64.4
Fort Worth, Tex	66.7	66.2	67.6	68.1	64.0	69.0	68.4	67.6	67.9	67.6	62.5	69.4	63.6
Galveston, Tex	72.7	71.7	74.2	72.5	68.6	72.7	77.6	72.3	72.2	71.0	71.1	73.7	71.0
San Antonio, Tex	70.3	70.2	72.2	70.9	68.6	71.6	73.8	71.0	70.4	71.4	68.0	72.0	68.6
Oklahoma City, Okla	61.5	61.6	62.8	62.4	57.3	65.2	59.7	63.9	61.0	63.3	56.5	66.3	53.2
Little Rock, Ark	63.6	63.2	65.4	64.3	57.9	66.5	66.6	65.4	62.9	65.2	60.8	67.2	59.3
Havre, Mont	44.5	46.2	49.2	39.9	41.8	48.9	34.4	46.7	50.6	47.9	44.2	49.0	35.4
Kalispell, Mont	43.5	43.2	46.2	40.5	43.5	47.0	36.4	42.4	46.4	47.6	44.0	44.7	38.4
Cheyenne, Wyo	44.8	47.6	48.0	42.9	43.3	48.2	40.5	46.0	50.8	47.5	38.7	47.8	37.3
Sheridan, Wyo	43.7	46.6	48.4	39.6	41.0	48.5	35.7	44.5	49.2	47.3	41.0	47.8	34.1
Pueblo, Colo	52.0	53.6	54.0	51.6	49.9	55.8	49.9	53.2	56.5	54.2	47.6	55.4	46.9
Santa Fe, N. Mex	50.4	49.4	52.0	50.8	51.9	52.0	47.1	48.8	53.0	51.4	45.8	51.2	49.6
Phoenix, Ariz	70.6	71.2	73.8	66.2	72.7	71.8	66.7	67.0	73.8	71.6	67.3	71.2	64.4
Modena, Utah	48.0	49.9	50.6	45.0	51.1	51.1	42.2	44.3	54.0	49.5	44.8	45.5	46.9
Salt Lake City, Utah	52.5	55.8	56.3	49.8	54.2	55.0	44.6	49.4	58.6	55.9	48.7	52.4	51.9
Winnemucca, Nev	48.3	50.2	50.2	44.9	51.7	51.6	42.0	44.6	51.9	49.0	46.6	47.0	47.2
Boise, Idaho	51.1	54.4	54.4	48.7	53.2	53.6	44.9	48.4	55.6	56.2	50.2	52.8	50.0
Seattle, Wash	51.4	54.6	53.7	49.1	52.5	53.4	48.5	50.1	53.2	53.5	54.6	52.8	51.4
Walla Walla, Wash	53.5	54.4	56.8	52.4	56.6	57.0	50.2	52.0	57.0	56.5	52.7	55.3	53.8
Portland, Oreg	54.2	57.4	55.8	53.2	57.3	56.4	50.9	53.1	57.0	55.4	57.1	54.6	55.8
Roseburg, Oreg	53.9	56.3	54.6	50.9	54.9	56.4	49.4	52.2	57.1	55.2	54.2	53.8	53.6
Eureka, Calif	53.6	54.8	52.3	50.2	51.6	54.2	50.6	54.6	54.5	54.8	54.4	54.4	53.9
Fresno, Calif	64.0	64.6	67.4	59.8	69.3	66.7	62.0	60.0	66.6	64.2	64.0	61.9	63.4
Los Angeles, Calif	65.3	68.6	65.2	59.7	68.2	71.0	63.8	63.2	66.7	65.4	66.8	62.6	65.0
Sacramento, Calif	62.9	62.2	65.2	58.2	68.0	64.2	60.6	58.6	64.0	61.9	63.1	59.5	62.6
San Diego, Calif	63.7	66.0	62.8	59.3	64.6	68.1	62.0	61.4	64.6	64.0	64.4	60.5	63.6
San Francisco, Calif	60.5	62.0	61.3	56.9	62.3	64.0	60.7	60.2	61.5	60.6	62.4	59.4	62.2

[1] Normals are based on records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal [1] and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for Nov.	November monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me	30.7	28.4	32.6	29.2	27.2	32.6	30.6	28.4	27.2	31.2	34.8	33.0	30.2
Boston, Mass	42.0	42.7	45.4	42.6	39.4	45.0	42.8	41.7	41.6	43.8	44.6	44.6	43.6
Buffalo, N. Y	39.4	40.0	42.4	39.2	35.0	43.0	38.4	38.4	37.6	42.0	40.2	39.8	38.6
Canton, N. Y	33.9	34.6	37.7	33.8	28.0	37.4	34.2	32.0	30.8	37.0	36.8	36.2	34.2
Trenton, N. J	44.4	43.5	44.5	43.7	40.6	44.8	43.8	43.2	44.6	45.0	44.0	44.1	43.0
Pittsburgh, Pa	43.2	42.9	45.2	44.5	39.8	43.8	42.6	42.2	44.6	45.3	43.2	42.8	40.6
Scranton, Pa	40.5	40.2	42.1	40.8	36.8	42.4	41.0	40.2	41.2	42.4	41.4	40.9	39.8
Cincinnati, Ohio	42.5	46.7	46.6	45.4	41.4	43.4	42.2	42.3	45.8	46.4	43.8	43.6	42.2
Cleveland, Ohio	40.9	41.8	43.9	42.3	38.2	43.2	41.1	41.2	42.0	44.2	42.0	41.2	39.6
Evansville, Ind	46.6	49.2	50.4	49.5	46.8	47.2	46.3	44.7	49.7	49.3	47.6	47.4	45.0
Indianapolis, Ind	42.3	44.3	45.5	45.0	43.0	43.2	41.6	41.5	44.5	45.4	44.2	42.6	40.4
Chicago, Ill	41.2	44.4	44.2	43.2	43.0	43.5	39.2	40.2	40.8	44.6	43.8	41.5	39.0
Peoria, Ill	37.5	43.4	43.8	42.4	41.8	41.9	37.9	38.6	39.9	43.2	42.2	41.2	37.7
Grand Rapids, Mich	38.4	39.6	41.5	39.8	38.2	42.2	37.2	38.2	38.7	42.4	40.4	39.7	37.0
Marquette, Mich	33.3	33.7	35.6	32.4	35.4	37.4	30.0	33.8	29.9	37.6	38.2	33.8	33.3
Madison, Wis	35.2	38.2	38.8	35.8	38.2	39.4	32.6	34.2	31.9	41.0	38.9	36.0	33.8
Duluth, Minn	30.0	29.8	29.8	29.2	34.4	33.6	21.6	28.4	23.2	34.2	35.8	27.2	28.2
St. Paul, Minn	32.5	36.0	35.3	33.8	38.2	37.3	26.6	32.6	27.0	38.8	38.3	32.2	31.7
Des Moines, Iowa	38.4	43.2	42.6	39.7	43.0	41.6	35.8	37.6	35.8	44.0	42.2	40.4	37.8
Dubuque, Iowa	37.0	40.6	41.2	37.6	40.2	41.2	34.6	35.6	34.2	42.7	40.0	38.4	35.7
St. Louis, Mo	45.4	50.3	50.9	49.2	47.7	46.2	44.8	43.7	47.3	48.8	47.9	47.6	43.4
Springfield, Mo	45.7	50.6	50.7	48.3	47.4	45.3	44.4	41.6	48.4	48.1	47.0	48.5	45.0
Bismarck, N. Dak	28.5	34.6	32.6	30.6	40.2	31.4	18.2	29.6	22.6	33.2	38.8	30.8	30.8
Devils Lake, N. Dak	22.6	29.6	26.3	26.8	35.6	27.1	12.8	27.2	18.6	31.8	33.6	23.8	26.8
Pierre, S. Dak	33.6	41.3	38.2	35.4	43.4	36.2	23.3	32.2	29.4	36.7	42.6	37.5	36.2
North Platte, Nebr	36.6	43.7	41.2	35.8	45.5	36.8	28.2	34.6	38.0	38.8	42.5	39.6	38.4
Omaha, Nebr	38.5	45.4	43.9	40.6	45.8	41.6	36.0	37.2	36.9	44.2	43.8	42.0	40.2
Concordia, Kans	41.4	47.5	47.0	42.8	47.3	42.9	38.2	38.2	44.1	44.8	44.0	44.8	41.4
Dodge City, Kans	42.6	48.4	47.4	42.0	48.6	41.7	38.7	39.4	43.6	45.5	45.2	45.9	42.6
Iola, Kans	43.0	49.5	49.8	46.8	47.5	45.6	44.0	41.6	45.6	47.8	47.2	47.4	44.2
Washington, D. C	45.2	45.4	46.2	46.3	42.8	46.3	43.8	45.9	47.5	47.9	45.1	46.0	44.3
Lynchburg, Va	47.2	46.6	48.1	48.4	45.2	46.8	48.2	46.4	50.6	48.4	46.1	47.7	45.6
Norfolk, Va	51.4	51.0	52.4	52.4	47.8	52.0	53.0	52.6	53.8	51.8	50.6	51.6	50.2
Parkersburg, W. Va	43.8	45.4	47.0	45.5	40.6	44.2	44.8	43.0	47.2	46.0	44.0	44.6	42.6
Charlotte, N. C	50.6	50.5	53.3	53.9	49.2	50.7	52.9	49.4	54.0	54.6	49.0	52.2	47.9
Charleston, S. C	58.1	57.0	61.4	59.2	54.4	58.6	62.2	57.4	62.0	60.1	56.0	58.8	58.2
Atlanta, Ga	52.1	52.4	54.2	52.4	51.3	51.6	53.7	50.2	54.7	52.9	49.8	54.6	49.8
Thomasville, Ga	58.5	58.1	61.7	59.8	55.9	57.8	64.2	56.8	63.8	62.2	56.4	60.2	57.0
Jacksonville, Fla	62.2	61.6	66.0	63.1	58.0	60.4	66.8	61.6	65.8	64.8	59.6	62.4	60.0
Miami, Fla	72.0	70.6	73.2	71.9	67.0	72.2	73.4	72.2	73.5	73.1	68.4	71.6	72.4
Memphis, Tenn	51.7	53.6	55.9	54.0	51.8	51.0	52.1	48.7	56.8	54.8	52.6	53.8	51.4
Nashville, Tenn	49.0	49.6	52.8	50.2	47.9	48.0	48.7	46.7	52.4	51.3	48.9	50.0	48.0
Birmingham, Ala	53.9	53.0	56.1	54.9	51.8	52.4	56.0	50.8	57.6	56.4	52.0	55.9	51.8
Mobile, Ala	58.6	59.0	61.8	60.6	56.6	59.0	63.8	56.2	63.3	62.8	57.2	61.6	58.0
New Orleans, La	61.6	61.2	66.2	62.6	59.0	61.7	66.4	58.2	66.6	66.6	59.9	65.5	60.8
Shreveport, La	56.0	56.8	59.3	56.4	55.1	54.1	57.8	52.2	62.6	58.3	55.6	59.2	55.0
Amarillo, Tex	45.5	50.4	49.5	44.4	50.8	42.6	42.6	42.8	51.0	47.2	45.4	50.8	46.2
Brownsville, Tex	67.2	67.2	70.2	66.5	68.7	65.8	70.5	64.5	71.8	67.6	68.8	72.2	66.6
El Paso, Tex	52.7	54.7	52.8	51.2	55.4	49.1	52.4	51.6	54.4	50.1	51.2	56.4	52.3
Fort Worth, Tex	55.5	57.1	60.1	55.4	57.4	53.6	53.6	51.9	61.6	57.5	56.0	59.2	55.9
Galveston, Tex	63.3	63.1	67.0	62.9	62.6	60.9	65.1	59.2	67.7	65.6	60.6	67.4	61.6
San Antonio, Tex	60.3	61.2	63.8	59.0	63.4	57.4	60.8	57.4	65.6	61.9	58.7	66.5	60.2
Oklahoma City, Okla	48.8	53.6	53.8	49.7	52.4	48.2	45.4	45.2	51.5	51.3	50.2	52.8	49.0
Little Rock, Ark	52.1	54.2	55.5	53.5	52.9	51.0	52.8	48.4	55.8	54.2	52.6	54.2	51.4
Havre, Mont	31.2	36.7	32.4	31.5	41.0	29.9	21.2	33.6	25.8	30.8	37.8	29.5	34.5
Kalispell, Mont	32.4	36.4	32.2	28.0	36.2	32.8	26.7	32.6	30.3	30.0	33.7	31.1	33.3
Cheyenne, Wyo	34.8	41.4	37.0	31.2	40.8	30.9	30.6	31.8	38.6	31.4	37.4	38.5	35.0
Sheridan, Wyo	32.8	36.6	32.6	28.9	41.8	29.4	24.4	28.3	29.6	32.8	38.4	34.6	32.2
Pueblo, Colo	39.4	43.5	42.8	38.3	41.8	36.3	36.8	37.8	42.8	37.6	41.3	43.0	39.0
Santa Fe, N. Mex	38.9	43.0	39.8	38.9	45.1	35.0	38.6	37.7	43.0	35.8	38.8	41.3	37.4
Phoenix, Ariz	59.7	63.9	59.2	55.8	60.9	57.2	57.0	58.6	60.9	55.0	59.1	62.8	57.8
Modena, Utah	36.4	38.4	38.0	33.6	39.0	33.9	34.8	36.1	41.7	34.2	39.0	36.7	36.3
Salt Lake City, Utah	41.1	43.4	43.6	36.2	44.0	38.8	38.4	40.4	45.9	38.0	43.2	40.4	39.8
Winnemucca, Nev	38.4	37.8	37.2	33.0	41.9	34.2	36.0	37.6	41.0	33.6	39.7	37.3	38.3
Boise, Idaho	41.0	41.8	39.5	36.5	44.4	39.6	37.0	40.8	44.7	37.0	42.6	40.7	40.4
Seattle, Wash	45.6	47.2	43.7	43.0	49.6	45.8	44.9	47.0	45.4	43.6	47.4	44.6	43.9
Walla Walla, Wash	42.8	44.6	42.7	38.3	46.6	42.7	40.5	41.8	43.9	36.9	44.8	39.6	41.4
Portland, Oreg	46.8	47.0	45.4	43.7	50.6	46.6	45.0	46.8	48.8	43.6	50.4	45.6	46.0
Roseburg, Oreg	45.9	46.8	47.4	42.8	49.0	45.8	44.8	45.6	49.8	44.3	49.2	46.2	48.0
Eureka, Calif	51.1	50.8	49.8	47.5	52.8	50.0	48.2	51.2	52.0	48.2	53.6	51.6	51.7
Fresno, Calif	54.2	57.4	53.8	51.2	56.7	52.8	53.0	54.0	57.0	51.0	58.2	55.1	54.2
Los Angeles, Calif	60.9	67.0	61.8	59.4	63.7	60.8	61.5	60.1	63.2	59.8	66.4	64.1	62.4
Sacramento, Calif	53.6	55.6	53.0	50.5	55.2	50.6	52.4	51.0	54.8	49.8	58.5	51.8	53.0
San Diego, Calif	59.7	64.4	59.6	56.5	60.8	59.8	58.6	58.2	60.4	58.0	64.0	60.0	60.8
San Francisco, Calif	56.3	59.0	56.1	54.4	58.7	55.6	56.0	55.4	57.8	54.3	60.8	56.7	56.6

[1] Normals are based upon records of 30 or more years of observations.

TABLE 794.—*Temperature: Monthly normal[1] and mean temperature at selected points in the United States, 1914–1925*—Continued

Station	Normal for Dec.	December monthly mean temperature											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	°	°	°	°	°	°	°	°	°	°	°	°	°
Greenville, Me.	18.0	15.8	22.0	17.8	7.8	20.6	11.4	20.2	16.4	15.1	26.8	14.2	17.1
Boston, Mass.	32.5	30.4	34.2	32.6	23.7	34.7	28.7	35.6	31.4	30.9	40.4	31.2	33.6
Buffalo, N. Y.	29.8	26.0	27.8	28.4	20.8	35.0	23.3	32.7	29.9	28.9	37.6	25.2	27.2
Canton, N. Y.	22.7	20.6	23.1	18.6	8.6	24.0	17.2	23.3	21.8	21.4	31.7	17.4	21.6
Trenton, N. J.	34.4	30.6	32.4	32.2	24.7	38.4	28.9	37.4	33.0	32.9	42.0	34.8	34.4
Pittsburgh, Pa.	34.2	29.9	31.8	32.9	24.5	41.0	28.2	35.6	34.0	35.6	43.0	31.4	30.8
Scranton, Pa.	30.7	28.0	29.4	30.4	21.3	36.2	24.9	33.6	29.6	30.8	38.7	28.8	31.0
Cincinnati, Ohio	33.4	30.2	32.7	31.6	22.3	41.8	27.4	35.4	36.4	35.2	43.5	31.0	30.7
Cleveland, Ohio	31.2	27.0	30.8	29.0	22.4	38.7	25.7	33.6	32.6	31.8	40.4	27.6	28.9
Evansville, Ind.	37.1	31.0	36.8	35.2	26.6	44.7	32.2	38.4	41.0	39.4	46.6	33.3	33.7
Indianapolis, Ind.	32.2	28.8	31.0	29.5	22.8	40.3	26.1	33.2	35.2	33.4	42.4	28.2	28.5
Chicago, Ill.	30.6	24.1	29.1	26.0	22.4	37.7	21.4	32.4	32.5	29.9	39.7	23.4	25.4
Peoria, Ill.	28.1	20.8	27.8	25.2	19.8	36.6	20.6	30.8	32.2	28.8	38.0	21.8	24.8
Grand Rapids, Mich.	28.5	24.6	27.0	25.4	21.1	34.5	21.4	32.0	30.2	27.7	36.6	23.2	26.7
Marquette, Mich.	22.6	18.4	24.6	18.6	11.6	28.8	13.7	27.0	22.9	19.1	31.4	14.6	21.0
Madison, Wis.	22.8	16.4	23.9	18.0	13.9	31.4	12.6	26.2	24.4	21.6	32.5	15.0	17.6
Duluth, Minn.	15.9	9.4	18.6	8.8	4.4	23.6	5.6	19.3	14.8	11.8	24.0	3.6	12.7
St. Paul, Minn.	19.0	12.1	22.6	12.2	10.1	28.7	10.2	23.0	20.2	17.8	29.4	8.8	15.3
Des Moines, Iowa	26.0	18.7	27.8	22.0	16.7	34.2	16.6	28.8	30.0	25.6	35.8	17.7	23.0
Dubuque, Iowa	24.7	18.4	25.5	19.3	15.8	33.0	14.4	27.3	27.2	23.8	34.4	16.4	20.0
St. Louis, Mo.	34.9	28.6	35.4	33.6	26.8	43.0	29.6	37.5	38.6	36.7	44.4	30.0	32.8
Springfield, Mo.	36.2	27.4	37.6	33.2	26.5	41.3	32.6	38.1	38.4	39.2	42.8	30.4	34.0
Bismarck, N. Dak.	11.7	7.4	19.3	3.6	3.2	21.6	11.5	17.8	18.6	13.0	25.4	5.5	19.6
Devils Lake, N. Dak.	8.0	3.6	12.4	0.8	3.6	14.9	5.0	11.6	15.2	6.0	20.4	0.7	13.8
Pierre, S. Dak.	21.8	15.1	25.8	12.5	13.1	25.5	13.6	24.9	25.9	16.4	29.7	12.6	22.4
North Platte, Nebr.	26.7	18.0	28.2	19.4	23.7	28.5	19.4	27.0	30.7	27.8	30.4	15.2	28.0
Omaha, Nebr.	26.4	18.2	29.6	22.2	18.0	34.8	19.4	28.7	31.7	27.2	35.2	17.4	26.0
Concordia, Kans.	30.7	19.9	33.4	25.6	23.5	35.0	24.4	32.1	34.3	31.4	35.6	21.7	31.7
Dodge City, Kans.	32.6	23.4	34.6	29.0	28.2	34.0	29.6	35.1	33.4	33.7	34.5	24.0	34.0
Iola, Kans.	32.5	26.2	36.8	30.2	25.4	38.8	28.6	37.0	36.6	36.0	38.6	28.0	32.8
Washington, D. C.	36.6	32.8	35.2	35.5	27.9	41.6	32.6	39.3	37.9	37.6	45.0	36.4	37.0
Lynchburg, Va.	39.6	35.0	38.9	38.6	29.0	42.9	36.1	40.2	42.3	42.5	47.4	40.2	39.4
Norfolk, Va.	43.1	43.0	40.5	42.7	35.8	47.4	40.5	45.6	44.2	46.6	51.1	44.4	40.8
Parkersburg, W. Va.	35.2	30.6	34.2	34.2	24.8	43.3	30.4	37.8	37.4	37.4	45.2	33.6	33.4
Charlotte, N. C.	43.0	38.4	41.4	43.3	33.4	47.2	41.6	43.0	47.1	46.6	50.2	44.1	42.2
Charleston, S. C.	51.7	48.8	48.2	53.0	42.0	53.5	51.4	51.4	55.0	56.3	56.9	52.8	49.2
Atlanta, Ga.	44.7	40.3	43.7	45.0	36.2	48.2	41.8	43.1	48.3	50.5	51.3	45.6	42.4
Thomasville, Ga.	52.5	50.4	50.8	54.6	46.0	54.8	53.0	51.4	57.8	59.5	59.4	55.6	51.2
Jacksonville, Fla.	56.3	54.6	53.5	58.0	48.4	58.2	56.1	55.4	59.7	61.6	61.8	58.4	54.1
Miami, Fla.	68.0	69.5	65.6	69.0	63.6	67.8	68.8	68.0	69.6	71.8	70.6	72.2	68.4
Memphis, Tenn.	45.6	36.2	45.0	43.4	34.0	50.2	40.4	44.6	48.1	48.4	51.5	41.8	41.0
Nashville, Tenn.	41.0	33.8	42.1	38.8	31.4	47.1	38.3	41.6	44.8	46.0	49.4	39.6	35.2
Birmingham, Ala.	46.4	41.9	46.7	46.8	39.2	50.4	45.8	45.6	50.2	53.2	53.3	46.8	43.1
Mobile, Ala.	52.2	49.4	53.8	53.9	48.2	55.0	55.0	51.0	57.4	60.1	58.2	53.6	50.0
New Orleans, La.	55.6	50.8	56.7	57.4	51.4	57.5	57.0	54.1	60.8	63.5	60.9	55.7	52.3
Shreveport, La.	49.1	41.5	50.4	49.8	43.2	52.0	48.8	48.6	54.6	54.8	54.9	47.8	46.0
Amarillo, Tex.	37.0	30.4	40.2	36.6	36.1	32.4	37.0	39.0	43.5	41.8	33.9	31.9	37.6
Brownsville, Tex.	61.2	54.2	65.2	65.3	62.9	61.7	60.8	64.1	67.7	67.4	61.8	57.9	53.7
El Paso, Tex.	44.9	42.8	44.8	45.0	49.6	41.2	47.2	43.4	49.4	49.2	42.6	42.6	40.8
Fort Worth, Tex.	47.5	39.7	50.9	48.0	41.6	49.8	44.4	48.3	51.2	52.8	50.8	44.9	46.0
Galveston, Tex.	56.4	50.2	57.9	57.7	52.8	56.8	57.2	56.0	60.2	62.4	58.8	54.6	51.0
San Antonio, Tex.	53.7	46.3	56.8	54.6	50.4	54.7	51.7	54.7	59.0	59.6	55.6	52.6	49.7
Oklahoma City, Okla.	39.3	31.4	43.4	37.6	31.6	40.8	33.8	40.8	42.7	42.6	42.2	32.6	38.4
Little Rock, Ark.	44.2	36.9	46.0	43.4	35.4	49.6	40.6	44.6	48.0	48.4	41.2	41.8	40.9
Havre, Mont.	20.4	10.8	24.4	7.0	8.4	26.4	16.9	22.6	20.0	11.4	25.6	8.8	26.8
Kalispell, Mont.	24.9	19.0	23.3	14.9	26.2	28.1	17.6	27.9	21.0	18.3	24.5	14.7	33.4
Cheyenne, Wyo.	28.5	20.2	28.8	21.9	30.4	26.7	28.0	27.9	30.2	29.5	27.4	21.3	27.8
Sheridan, Wyo.	22.1	14.2	24.8	14.6	21.2	28.0	13.7	24.6	22.6	17.0	23.6	15.8	29.4
Pueblo, Colo.	31.5	21.6	32.6	29.8	35.4	30.2	30.9	33.8	34.2	36.5	32.2	23.5	33.4
Santa Fe, N. Mex.	30.7	26.0	32.1	27.9	38.2	27.0	34.2	27.4	36.6	34.0	29.1	25.4	29.0
Phoenix, Ariz.	52.0	50.3	51.6	41.7	54.6	49.6	54.2	49.7	56.0	55.0	52.0	52.0	53.5
Modena, Utah.	28.1	21.2	28.8	23.4	36.1	26.6	26.1	27.6	34.4	33.2	26.9	20.2	31.0
Salt Lake City, Utah.	31.9	29.0	33.7	27.8	41.8	31.2	24.6	31.7	36.4	33.1	29.3	24.2	35.4
Winnemucca, Nev.	30.0	18.9	30.7	26.6	37.2	24.9	28.2	31.2	31.6	30.9	25.2	17.2	32.4
Boise, Idaho	32.1	24.0	33.6	28.4	43.2	29.6	33.6	34.3	32.9	30.0	34.6	21.8	35.0
Seattle, Wash.	41.7	39.7	42.0	38.0	45.0	40.9	38.6	43.4	39.1	38.4	42.2	37.2	45.6
Walla Walla, Wash.	35.5	26.0	38.2	30.5	46.1	37.8	22.6	39.8	34.3	30.8	38.0	26.6	40.4
Portland, Oreg.	41.2	36.8	42.0	38.1	48.4	42.3	33.6	44.1	39.1	38.0	41.5	36.6	45.8
Roseburg, Oreg.	41.8	37.0	43.2	39.0	48.4	40.4	39.6	42.7	39.0	42.2	40.6	35.5	42.7
Eureka, Calif.	48.2	45.3	48.4	43.2	51.2	46.3	48.1	48.4	48.4	47.6	45.3	45.5	50.1
Fresno, Calif.	46.2	44.7	48.2	45.4	49.7	45.0	47.1	47.5	50.4	49.8	46.2	45.4	46.2
Los Angeles, Calif.	56.6	53.4	57.4	52.6	62.5	57.2	58.9	55.8	60.2	58.3	58.3	55.4	63.2
Sacramento, Calif.	46.2	43.3	47.5	44.2	49.2	43.4	44.1	45.4	49.0	47.4	45.6	42.2	46.0
San Diego, Calif.	56.0	54.6	55.6	52.4	58.6	54.8	56.6	54.8	59.3	58.0	57.4	54.0	60.3
San Francisco, Calif.	51.3	48.7	52.2	48.9	54.6	50.2	48.8	51.0	52.0	50.6	51.0	47.8	52.7

Weather Bureau.

[1] Normals are based on records of 30 or more years of observations.

TABLE 795.—*Monthly and annual normal*[1] *temperatures at selected points in the United States*

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.
Greenville, Me	12.8	12.4	23.5	36.4	49.5	58.9	65.4	62.5	55.0	45.6	30.7	18.0	39.2
Boston, Mass	27.9	28.8	35.6	46.4	57.1	66.5	71.7	69.9	63.2	53.6	42.0	32.5	49.6
Buffalo, N. Y	24.6	24.3	31.1	42.8	54.6	64.4	69.8	68.6	62.4	51.9	39.4	29.8	47.0
Canton, N. Y	16.3	18.0	27.7	42.5	56.2	65.8	70.5	67.8	59.3	47.2	33.9	22.7	44.0
Trenton, N. J	30.5	30.7	39.1	49.8	61.1	69.5	74.5	73.0	66.9	55.6	44.4	34.4	52.5
Pittsburgh, Pa	30.7	32.3	39.6	51.2	62.4	70.7	74.6	72.9	66.4	55.7	43.2	34.2	52.8
Scranton, Pa	26.6	27.3	35.7	48.1	59.4	67.8	71.7	69.8	62.9	51.9	40.5	30.7	49.4
Cincinnati, Ohio	30.3	32.8	40.9	52.4	63.1	71.2	75.1	73.6	67.1	55.7	42.5	33.4	53.2
Cleveland, Ohio	26.5	27.4	34.6	46.2	57.9	67.1	71.4	70.0	63.9	53.6	40.9	31.2	49.2
Evansville, Ind	33.5	36.3	45.9	56.7	66.7	75.1	78.9	77.4	70.7	59.4	46.6	37.1	57.0
Indianapolis, Ind	28.4	31.1	40.0	52.1	62.9	71.6	75.7	73.7	66.9	55.7	42.3	32.2	52.7
Chicago, Ill	25.1	27.4	36.3	47.7	58.5	68.2	73.9	72.8	66.3	55.1	41.2	30.0	50.2
Peoria, Ill	23.1	25.9	37.0	50.9	61.7	70.9	75.4	72.5	64.3	52.0	37.5	28.1	49.9
Grand Rapids, Mich	21.5	23.7	33.4	47.0	58.0	67.8	72.3	69.7	62.7	51.2	38.4	28.5	48.1
Marquette, Mich	16.3	16.3	24.8	37.8	49.0	58.9	64.9	63.8	57.5	46.7	33.3	22.6	41.0
Madison, Wis	16.7	19.1	30.6	45.4	57.6	67.2	72.1	69.8	62.4	50.3	35.2	22.8	45.8
Duluth, Minn	7.9	11.4	23.7	37.0	47.3	57.2	63.9	62.6	55.1	44.1	30.0	15.9	38.0
St. Paul, Minn	12.6	15.8	29.1	45.6	57.9	67.1	72.1	69.4	61.3	48.6	32.5	19.0	44.2
Des Moines, Iowa	20.1	23.7	35.9	50.1	61.3	70.6	75.4	73.1	65.6	53.4	38.4	26.0	49.5
Dubuque, Iowa	19.1	22.2	34.0	48.6	60.3	69.4	74.1	71.7	64.0	51.9	37.0	24.7	48.1
St. Louis, Mo	31.1	34.8	44.1	56.1	67.0	75.0	78.8	77.5	70.5	58.8	45.4	34.9	56.2
Springfield, Mo	33.5	35.2	45.2	56.0	64.5	72.5	76.8	75.7	68.9	58.2	45.7	36.2	55.7
Bismarck, N. Dak	7.8	10.3	24.2	42.1	54.5	63.7	69.8	67.3	58.1	44.9	28.5	14.7	40.5
Devils Lake, N. Dak	0.3	4.5	18.5	38.2	52.7	62.6	68.1	65.1	55.6	40.5	22.6	8.0	36.4
Pierre, S. Dak	16.0	18.6	31.5	46.8	58.0	68.5	75.3	72.8	63.8	49.8	33.6	21.8	46.4
North Platte, Nebr	22.9	26.6	36.6	48.6	58.7	67.5	72.9	70.8	62.1	49.7	36.6	26.7	48.3
Omaha, Nebr	21.9	25.5	37.0	51.2	62.4	71.6	76.7	74.4	66.8	54.3	38.5	26.4	50.6
Concordia, Kans	26.4	29.8	41.0	53.5	63.2	73.0	78.0	76.5	68.3	55.9	41.4	30.7	53.1
Dodge City, Kans	29.0	33.2	42.8	53.6	63.5	72.5	78.4	77.7	69.4	56.1	42.6	32.6	54.3
Iola, Kans	27.6	32.2	42.4	54.2	64.5	73.4	78.1	76.3	68.6	56.9	43.0	32.5	54.1
Washington, D. C	33.4	35.3	42.6	53.3	63.7	72.2	76.8	75.0	68.1	57.4	45.2	36.6	55.0
Lynchburg, Va	37.5	40.3	47.3	57.3	67.3	74.6	77.5	75.6	69.0	58.5	47.2	39.5	57.6
Norfolk, Va	40.6	42.7	48.2	56.8	66.2	74.4	78.7	77.4	71.6	62.5	51.4	43.1	59.5
Parkersburg, W. Va	32.5	34.2	42.8	53.4	63.8	71.4	75.4	73.9	67.3	56.1	43.8	35.2	54.2
Charlotte, N. C	41.2	43.9	50.4	59.8	68.9	75.5	78.4	77.1	71.5	61.7	50.6	43.0	60.2
Charleston, S. C	49.9	52.4	57.4	64.5	72.7	78.9	81.4	81.0	76.6	67.8	58.1	51.7	66.0
Atlanta, Ga	42.6	45.3	52.0	61.0	69.9	76.0	78.1	77.0	72.4	63.0	52.1	44.7	61.2
Thomasville, Ga	51.0	55.0	60.2	66.7	74.0	79.5	81.8	81.0	76.8	68.2	58.5	52.5	67.1
Jacksonville, Fla	55.4	58.0	62.6	68.7	75.0	79.9	82.1	81.7	78.3	71.1	62.2	56.3	69.3
Miami, Fla	67.3	68.8	72.0	74.2	78.6	80.4	81.9	82.0	81.5	77.8	72.0	68.0	75.4
Memphis, Tenn	40.9	44.3	52.3	61.8	70.6	77.6	80.7	79.4	73.6	63.3	51.7	43.6	61.6
Nashville, Tenn	38.6	41.6	49.2	59.0	68.2	75.6	79.1	77.8	71.8	61.0	49.0	41.0	59.3
Birmingham, Ala	45.1	48.0	55.4	63.3	71.1	77.9	80.2	79.2	74.8	64.8	53.9	46.4	63.3
Mobile, Ala	51.5	54.7	59.7	66.3	74.4	80.3	81.4	81.0	78.1	69.3	58.6	52.2	67.3
New Orleans, La	54.2	57.3	62.8	68.8	75.4	80.6	82.4	82.2	79.2	71.0	61.6	55.6	69.3
Shreveport, La	47.0	50.9	58.3	65.8	73.6	80.7	83.2	82.0	76.9	66.6	56.0	49.1	65.8
Amarillo, Tex	35.3	38.1	46.9	55.8	64.1	72.8	76.8	75.7	69.3	57.7	45.5	37.0	56.3
Brownsville, Tex	59.8	62.6	68.2	73.7	78.6	82.4	83.6	83.9	80.6	74.9	67.2	61.2	73.1
El Paso, Tex	45.0	49.0	55.8	63.4	71.5	79.6	81.1	79.2	73.9	63.5	52.7	44.9	63.3
Fort Worth, Tex	45.4	48.3	57.7	65.0	72.3	79.9	83.6	83.0	76.9	66.7	55.5	47.5	65.2
Galveston, Tex	53.8	56.3	62.4	68.7	74.8	80.7	83.4	83.0	80.1	72.7	63.3	56.4	69.6
San Antonio, Tex	52.3	55.4	62.8	69.1	75.1	81.0	83.8	83.5	79.0	70.5	60.3	53.7	68.9
Oklahoma City, Okla	36.4	39.6	50.0	59.8	67.7	76.0	80.6	79.7	72.8	61.5	48.8	39.3	59.4
Little Rock, Ark	41.4	44.9	53.0	62.1	70.3	77.4	80.9	79.8	74.1	63.6	52.1	44.2	62.0
Harve, Mont	12.9	13.6	27.1	43.7	53.4	62.0	68.3	65.4	56.4	44.5	31.2	20.4	41.6
Kalispell, Mont	20.4	23.3	32.9	43.6	51.4	57.7	64.1	62.5	53.5	43.5	32.4	24.9	42.5
Cheyenne, Wyo	25.5	27.3	33.1	40.9	50.3	60.4	66.7	65.6	57.0	44.8	34.8	28.5	44.6
Sheridan, Wyo	18.9	22.4	32.7	43.4	50.7	60.1	67.3	65.4	56.3	43.7	32.8	22.1	43.1
Pueblo, Colo	29.9	32.9	41.6	50.1	59.2	69.0	74.2	72.7	64.6	52.0	39.4	31.5	51.4
Santa Fe, N. Mex	28.8	33.1	39.7	46.7	55.7	64.8	69.0	67.4	60.9	50.4	38.9	30.7	48.8
Phoenix, Ariz	51.2	55.1	60.7	67.0	75.0	84.5	89.8	88.5	82.7	70.6	59.7	52.0	69.7
Modena, Utah	26.7	31.0	38.2	46.0	53.5	63.3	70.6	69.2	60.0	48.0	36.4	28.1	47.6
Salt Lake City, Utah	29.2	33.8	41.7	49.6	57.4	67.4	75.7	74.5	64.4	52.5	41.1	31.9	51.6
Winnemucca, Nev	28.6	33.5	40.0	46.7	53.9	62.8	70.6	69.3	59.2	48.3	38.4	30.0	48.4
Boise, Idaho	29.8	34.8	42.7	50.4	57.1	65.3	72.9	71.8	61.9	51.1	41.0	32.1	50.9
Seattle, Wash	39.5	41.1	44.9	49.4	54.5	59.0	63.1	63.1	58.1	51.4	45.6	41.7	51.0
Walla Walla, Wash	32.7	37.1	46.1	53.1	59.6	66.5	74.0	72.7	63.8	53.5	42.8	35.5	53.1
Portland, Oreg	39.4	42.1	46.9	51.8	56.9	62.4	66.7	66.7	61.7	54.2	46.8	41.2	53.1
Roseburg, Oreg	41.2	43.4	47.1	51.0	56.0	62.5	67.4	68.0	62.9	53.9	45.9	41.8	53.4
Eureka, Calif	46.9	47.2	48.3	49.9	52.0	54.3	55.5	56.0	55.9	53.6	51.1	48.2	51.6
Fresno, Calif	46.2	51.1	55.0	60.2	67.1	75.8	82.1	80.7	73.4	64.0	54.2	46.2	63.0
Los Angeles, Calif	54.6	55.5	57.5	59.4	62.2	66.4	70.2	71.1	69.0	65.3	60.9	56.6	62.4
Sacramento, Calif	45.8	50.1	54.3	58.1	63.3	69.4	73.2	72.9	69.3	62.9	53.6	46.2	59.9
San Diego, Calif	54.3	55.1	56.7	58.5	60.8	63.9	67.2	68.7	67.1	63.7	59.7	56.0	61.0
San Francisco, Calif	49.9	52.2	54.2	55.0	56.8	58.5	58.5	59.1	60.9	60.5	56.3	51.3	56.1

Weather Bureau.

[1] Normals are based on records of 30 or more years of observations.

TABLE 796.—*Precipitation: Normal*[1] *and total precipitation at selected points in the United States, 1914–1925*

Station	Normal for Jan.	January total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	2.85	3.39	3.03	2.35	3.95	2.49	2.85	2.84	1.48	2.02	4.58	2.55	2.95
Boston, Mass	3.82	3.26	6.33	1.23	2.82	3.11	3.62	2.72	2.24	1.41	6.07	3.27	3.97
Buffalo, N. Y	3.30	3.96	5.02	2.96	2.79	5.64	1.28	2.58	.89	1.44	3.27	2.18	2.27
Canton, N. Y	3.16	1.70	3.05	2.52	3.33	2.37	1.37	1.69	1.22	1.82	2.86	4.12	2.56
Trenton, N. J	3.17	2.72	5.15	1.26	3.10	3.00	3.28	2.40	2.41	2.41	4.13	4.71	4.31
Pittsburgh, Pa	2.87	2.41	4.66	3.51	4.33	2.82	1.42	2.80	3.35	1.56	3.49	3.53	3.16
Scranton, Pa	2.80	2.11	4.69	2.07	3.15	4.71	2.44	2.79	2.02	1.96	4.24	3.73	2.95
Cincinnati, Ohio	3.36	2.37	3.85	5.84	4.74	4.30	1.44	3.48	1.72	2.07	4.64	4.09	1.91
Cleveland, Ohio	2.45	1.61	2.52	2.40	2.55	2.60	.63	1.96	1.53	1.52	2.61	3.38	1.49
Evansville, Ind	3.69	1.92	6.65	8.73	4.93	5.00	1.14	3.64	1.80	1.47	5.43	3.16	1.43
Indianapolis, Ind	2.81	2.76	3.31	6.55	3.40	2.89	.91	2.01	2.86	1.26	2.73	3.13	.49
Chicago, Ill	2.00	3.01	1.99	4.84	1.55	4.12	.20	1.11	.97	1.16	.92	1.32	.68
Peoria, Ill	2.20	1.93	1.89	5.95	1.86	1.58	.07	.93	1.39	1.69	1.10	1.72	.48
Grand Rapids, Mich	2.78	3.24	1.57	3.90	1.40	3.24	.30	1.19	.59	.71	1.25	2.00	.59
Marquette, Mich	2.04	2.63	2.41	3.05	1.20	4.77	2.21	1.84	2.28	1.94	2.84	3.65	.98
Madison, Wis	1.56	.70	2.05	3.07	1.04	2.09	.26	.84	.22	.63	1.25	.56	.41
Duluth, Minn	.98	1.75	1.84	3.48	.80	.94	.46	1.13	.18	.51	1.60	.25	.27
St. Paul, Minn	.90	1.05	1.19	2.60	1.79	.61	.44	1.80	.59	.90	1.12	.97	.58
Des Moines, Iowa	1.21	.85	1.96	2.66	.53	.78	.08	.44	.59	.85	.88	1.02	.23
Dubuque, Iowa	1.49	.78	2.01	2.46	.85	1.83	.17	.63	.18	1.16	.63	.63	.11
St. Louis, Mo	2.27	2.21	2.83	8.53	1.72	1.31	.13	1.85	1.10	.74	2.08	1.15	.53
Springfield, Mo	2.66	1.80	2.35	9.31	1.46	1.96	.34	2.36	1.36	1.38	3.43	1.50	1.58
Bismarck, N. Dak	.54	.25	.08	.81	.65	.62	.09	.52	.12	.34	.29	.04	.32
Devils Lake, N. Dak	.60	.61	.11	.71	.55	.24	.22	.74	.13	.58	.42	.35	.12
Pierre, S. Dak	.46	.43	.73	1.06	.84	1.08	.04	.16	.21	.68	.14	.15	.53
North Platte, Nebr	.47	.18	.51	.85	.74	.54	.03	.07	.68	.66	.11	.08	.07
Omaha, Nebr	.65	.56	1.87	2.20	.58	.65	.10	.28	.48	.94	.87	.62	.80
Concordia, Kans	.72	.17	.76	1.34	.60	.85	.02	.12	.50	.38	.01	.95	.13
Dodge City, Kans	.47	.18	1.08	.59	.22	.80	.06	.07	.24	.45	.03	.17	.07
Iola, Kans	.98	.39	2.14	5.13	.48	.90	.02	.76	1.77	.96	1.16	.81	.59
Washington, D. C	3.37	4.60	6.34	1.57	2.57	4.29	3.47	2.30	2.30	5.56	4.24	3.21	4.44
Lynchburg, Va	3.72	3.00	3.86	.99	2.69	4.42	4.11	1.64	2.60	3.90	2.25	3.37	3.40
Norfolk, Va	3.37	2.32	5.66	2.67	2.28	2.77	3.10	2.14	1.55	3.49	1.74	1.96	6.22
Parkersburg, W. Va	3.19	1.55	3.68	5.34	5.71	2.24	2.48	3.83	3.17	1.91	4.14	4.70	2.71
Charlotte, N. C	4.29	2.78	5.67	1.66	3.08	3.82	5.45	3.81	5.22	5.24	3.67	3.98	6.91
Charleston, S. C	3.45	2.10	7.44	1.34	2.69	1.13	1.68	1.60	1.58	2.48	2.21	3.24	4.85
Atlanta, Ga	5.31	1.35	6.19	2.53	5.11	9.12	5.40	7.69	3.53	5.03	1.94	4.54	11.08
Thomasville, Ga	4.13	4.89	9.70	2.63	6.61	3.73	2.32	3.24	2.39	2.72	3.94	6.50	6.26
Jacksonville, Fla	3.12	3.31	4.10	.90	.41	2.78	1.73	1.21	2.04	3.21	1.37	5.09	4.52
Miami, Fla	2.73	1.35	3.64	1.44	.11	.85	1.07	.41	.73	.55	.21	2.80	4.78
Memphis, Tenn	5.21	1.60	5.69	7.16	5.37	5.02	3.77	6.01	1.84	2.26	5.05	6.15	1.63
Nashville, Tenn	4.85	1.56	5.89	7.62	7.27	7.43	4.71	7.35	3.11	2.90	5.89	5.40	2.70
Birmingham, Ala	5.32	1.85	6.44	5.40	6.79	8.94	6.21	5.37	3.72	6.20	3.82	5.42	7.58
Mobile, Ala	4.85	1.98	7.54	3.06	3.04	3.87	6.57	11.70	1.89	6.79	2.65	8.21	7.59
New Orleans, La	4.63	1.02	8.42	4.46	4.12	4.43	8.03	5.66	1.16	5.22	5.26	6.17	5.02
Shreveport, La	4.42	.73	4.22	6.29	3.29	2.07	3.28	7.06	4.18	5.73	4.32	4.24	4.65
Amarillo, Tex	.60	.06	.72	.36	.69	1.01	T.	1.11	2.10	.78	0	.13	.51
Brownsville, Tex	1.35	.10	3.35	.19	.28	.08	4.56	1.13	2.26	1.51	.13	3.42	.42
El Paso, Tex	.51	.03	1.01	.66	.32	1.20	.08	1.06	.06	.30	.64	.40	.03
Fort Worth, Tex	1.51	.43	1.32	4.01	1.43	1.36	3.03	3.48	2.87	1.63	4.60	.89	1.44
Galveston, Tex	3.62	.34	4.52	.86	2.21	.54	6.22	7.09	2.77	4.84	6.99	5.87	4.54
San Antonio, Tex	1.68	.09	.53	2.25	.95	.10	3.78	3.36	1.40	1.23	.46	.97	.36
Oklahoma City, Okla	1.34	.05	.78	4.28	.37	.95	.29	2.09	2.29	1.15	2.74	.18	.42
Little Rock, Ark	4.79	1.35	4.62	8.45	2.53	5.51	2.72	9.19	1.52	1.90	7.42	3.56	1.51
Havre, Mont	.69	.64	.67	1.75	.97	1.19	.40	1.14	.12	.42	1.12	.48	.39
Kalispell, Mont	1.59	1.31	1.19	1.95	1.05	1.82	.72	.85	1.29	.74	1.07	.91	.88
Cheyenne, Wyo	.40	.10	.08	.63	.30	.47	T.	.20	1.47	.47	.06	.38	.03
Sheridan, Wyo	.90	.35	2.08	.92	.84	2.21	.33	.81	.54	1.27	.57	.98	.25
Pueblo, Colo	.35	.18	.18	.22	.22	.61	.03	.29	.30	.39	T.	.41	.72
Santa Fe, N. Mex	.59	.19	1.95	3.02	.55	1.63	.12	.31	1.35	.64	.12	.13	.39
Phoenix, Ariz	1.17	.30	1.79	2.34	2.20	1.14	.22	1.42	.13	1.29	.28	0	.03
Modena, Utah	.73	1.42	1.12	3.47	1.06	.11	.32	.44	1.27	1.72	1.40	.17	.05
Salt Lake City, Utah	1.35	3.08	.72	1.96	.91	3.89	T.	1.24	1.44	1.42	1.90	.49	.60
Winnemucca, Nev	1.04	1.99	.49	2.21	.90	1.04	.10	.39	.46	1.15	.91	.06	.53
Boise, Idaho	1.89	1.06	1.06	1.93	1.10	2.27	.85	.66	1.57	.90	1.62	.40	2.00
Seattle, Wash	4.84	9.82	6.35	4.32	2.02	2.94	7.95	3.92	5.56	1.89	7.51	4.10	4.97
Walla Walla, Wash	2.01	2.62	.75	2.79	1.05	2.29	2.12	1.55	1.87	1.54	1.85	1.16	1.26
Portland, Oreg	6.59	11.53	5.90	5.69	2.54	4.68	9.08	4.84	7.82	3.08	9.57	3.94	6.94
Roseburg, Oreg	5.70	7.19	2.93	6.15	2.25	3.56	7.33	1.51	4.12	3.68	5.69	1.43	4.26
Eureka, Calif	7.63	9.75	9.75	13.02	5.53	2.55	7.84	1.87	8.37	2.54	3.88	1.95	3.97
Fresno, Calif	1.60	4.94	2.78	5.17	1.40	.47	.40	.69	2.63	2.46	1.10	.54	.95
Los Angeles, Calif	2.84	10.35	5.42	13.30	2.68	.50	.96	.50	3.22	4.64	1.76	.36	.20
Sacramento, Calif	3.69	5.97	3.76	9.35	1.30	.97	1.77	.29	4.61	2.16	2.05	1.80	1.62
San Diego, Calif	2.00	3.59	4.91	7.56	4.32	1.64	.61	.43	2.02	3.45	1.34	.26	.08
San Francisco, Calif	4.33	9.76	6.74	14.59	1.83	.81	2.57	.26	6.30	2.41	2.84	2.75	1.62

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal[1] and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for Feb.	February total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	2.75	1.82	4.36	3.34	1.90	2.47	2.27	4.52	2.22	2.77	2.15	2.24	3.56
Boston, Mass	3.44	3.07	3.47	5.18	2.67	2.30	2.66	5.88	2.64	2.64	1.48	2.61	1.55
Buffalo, N. Y	2.85	1.95	2.30	3.64	1.97	2.46	1.61	2.35	2.50	2.01	1.24	2.65	2.90
Canton, N. Y	2.57	1.16	2.43	4.12	1.63	3.73	1.65	2.21	1.39	2.92	1.67	2.02	3.16
Trenton, N. J	3.19	3.00	4.40	3.16	1.47	1.84	3.25	4.27	3.44	2.25	2.68	3.44	2.04
Pittsburgh, Pa	2.66	3.13	2.24	2.61	.99	1.87	1.58	1.62	1.80	1.57	2.18	2.59	1.91
Scranton, Pa	2.72	5.23	2.70	4.48	1.84	1.26	2.13	4.74	2.84	1.55	1.58	2.67	1.79
Cincinnati, Ohio	3.24	4.80	.94	1.73	1.50	1.61	1.05	1.50	2.25	1.68	1.81	1.70	2.33
Cleveland, Ohio	2.61	1.84	2.02	1.52	1.22	1.48	1.11	1.12	2.19	1.31	1.39	1.50	2.42
Evansville, Ind	3.06	4.56	1.24	1.64	1.13	.38	1.30	.82	4.69	2.38	4.45	1.55	2.99
Indianapolis, Ind	3.08	2.92	1.01	1.16	1.15	2.49	1.21	1.35	1.28	1.46	1.70	1.44	1.64
Chicago, Ill	2.16	.93	1.92	.87	.67	2.81	2.78	.13	.38	.74	1.05	1.68	1.62
Peoria, Ill	2.69	1.36	2.71	.29	.27	1.64	2.32	.27	.29	1.98	.83	1.64	1.99
Grand Rapids, Mich	1.91	.75	2.59	.74	.67	3.81	2.16	.85	1.13	2.25	.99	1.41	1.31
Marquette, Mich	1.72	1.55	2.47	1.34	1.59	2.12	1.50	1.05	1.29	3.00	1.21	2.18	.77
Madison, Wis	1.47	.92	2.30	.39	.64	1.30	2.12	.51	.32	3.90	.93	1.06	1.17
Duluth, Minn	.99	.64	1.50	.36	.81	.28	.94	.45	.45	4.24	.92	.60	.71
St. Paul, Minn	.84	.49	2.21	.39	.44	.69	2.52	.57	.46	3.69	.50	.53	.92
Des Moines, Iowa	1.08	1.24	3.20	.61	.52	1.45	3.60	.74	.92	.64	.36	1.98	.50
Dubuque, Iowa	1.38	1.13	2.48	.76	.17	1.37	2.87	.47	.29	1.54	.40	.74	1.08
St. Louis, Mo	2.75	4.63	2.30	1.78	.35	2.09	1.54	.74	1.08	1.52	1.50	1.28	2.19
Springfield, Mo	2.27	2.26	2.66	.57	.47	.64	2.44	.42	.85	2.02	1.27	1.23	1.06
Bismarck, N. Dak	.50	.36	.03	.39	.44	.29	.63	.20	.15	1.55	.46	.28	.05
Devils Lake, N. Dak	.53	.16	.24	.32	.68	.14	.70	.12	.46	.64	.73	.39	.49
Pierre, S. Dak	.44	1.35	1.81	.31	.37	.63	1.29	.26	.05	.49	.04	.89	.34
North Platte, Nebr	.40	.96	1.11	.81	.35	.28	1.50	.72	.36	.05	.14	.36	.51
Omaha, Nebr	.76	.87	2.62	.54	.20	1.05	2.07	.83	.69	.91	.08	.98	.64
Concordia, Kans	.75	.82	2.34	.41	.07	.63	2.36	.73	.06	1.12	.38	.26	.11
Dodge City, Kans	.71	.47	1.37	.06	.04	.29	1.50	.09	.69	1.75	.03	.71	.21
Iola, Kans	1.11	3.60	4.26	.97	.07	.91	.95	.15	.09	1.26	.43	1.18	.03
Washington, D. C	3.42	3.05	3.60	2.84	1.97	.83	2.01	3.47	2.29	2.88	2.29	3.05	.98
Lynchburg, Va	3.40	2.77	2.88	2.92	1.66	.53	2.23	4.03	2.66	3.52	2.48	1.87	1.04
Norfolk, Va	3.75	3.67	1.71	4.03	1.88	.26	2.15	6.33	3.02	4.85	2.01	3.15	1.51
Parkersburg, W. Va	3.24	3.74	1.80	2.75	2.44	2.81	1.76	2.56	2.18	1.57	2.32	3.07	2.09
Charlotte, N. C	4.39	4.03	2.89	5.87	3.78	1.92	4.53	3.74	4.61	7.38	1.25	4.18	1.51
Charleston, S. C	3.41	6.87	2.53	1.47	2.07	1.31	5.51	2.01	1.26	3.02	1.03	1.57	1.84
Atlanta, Ga	4.65	3.34	4.50	3.19	5.81	1.82	4.41	5.67	7.37	6.35	7.17	2.97	1.70
Thomasville, Ga	4.48	12.12	3.44	1.88	3.74	2.27	8.86	5.77	1.27	4.04	3.35	4.31	1.86
Jacksonville, Fla	3.43	4.55	2.44	.19	1.46	.21	3.77	9.16	.62	5.56	1.93	2.65	.90
Miami, Fla	2.13	1.21	3.01	3.69	.45	2.51	3.20	1.60	1.15	3.14	.24	1.69	1.27
Memphis, Tenn	4.35	3.15	3.31	2.27	1.97	2.24	2.66	2.07	6.09	3.30	4.64	2.72	3.52
Nashville, Tenn	4.32	2.03	1.01	1.19	2.76	1.54	2.19	1.92	4.70	3.89	4.33	3.44	4.88
Birmingham, Ala	4.75	2.66	1.95	3.23	5.89	1.94	5.22	3.06	7.32	5.02	5.87	5.89	3.32
Mobile, Ala	5.36	7.59	4.91	3.20	4.95	3.33	7.49	4.93	1.41	5.65	4.58	4.37	2.53
New Orleans, La	4.47	6.43	4.23	2.76	3.19	2.21	6.52	3.60	1.94	3.25	2.33	5.53	1.64
Shreveport, La	3.61	4.85	4.15	.01	2.10	.16	3.46	1.43	1.91	5.40	6.21	3.83	.83
Amarillo, Tex	.88	.10	1.60	.02	.22	.26	.73	.18	1.19	1.44	1.71	.56	.06
Brownsville, Tex	1.27	2.28	.04	.08	.20	.81	1.08	.75	.65	3.17	7.64	.87	.10
El Paso, Tex	.46	.53	.59	.02	T.	.01	.20	.83	.26	T.	1.41	.13	.05
Fort Worth, Tex	1.52	1.17	2.18	.01	1.47	.01	2.03	.76	2.62	2.00	2.05	1.97	.74
Galveston, Tex	3.10	3.31	2.65	.19	2.51	1.11	2.43	1.80	.30	3.03	5.09	5.67	.20
San Antonio, Tex	1.78	1.38	1.81	.01	.49	1.10	1.56	.27	.23	1.26	5.47	3.02	.09
Oklahoma City, Okla	.98	.86	3.10	.39	.84	.07	1.52	.79	1.23	.64	.20	.54	.09
Little Rock, Ark	4.13	2.85	2.52	2.65	1.72	.98	3.55	1.18	6.86	3.95	6.42	1.04	3.78
Havre, Mont	.47	1.04	.44	.47	.90	.40	.97	.42	.15	.70	.32	.43	.53
Kalispell, Mont	1.46	1.68	1.01	1.66	1.82	.90	1.69	.26	.66	.60	.94	.31	.38
Cheyenne, Wyo	.56	.23	.97	.30	.80	.89	.26	.69	.36	.85	.57	1.14	.29
Sheridan, Wyo	.74	1.25	.17	1.17	.37	.19	.20	.91	.11	.21	.59	1.09	.82
Pueblo, Colo	.47	.36	.57	T.	.49	.79	.86	.39	.07	.37	.76	.12	.23
Santa Fe, N. Mex	.84	.63	.77	.20	.23	1.14	.69	1.12	.33	.51	.25	.24	.30
Phoenix, Ariz	.69	.71	1.21	.13	.95	.45	.75	1.46	.11	.42	.46	T.	.02
Modena, Utah	1.20	.98	2.56	.52	.83	.97	1.19	1.67	.16	.89	.95	.09	.62
Salt Lake City, Utah	1.38	.98	2.00	1.18	1.22	1.41	2.11	1.14	1.06	2.36	.35	.78	1.72
Winnemucca, Nev	.93	.51	1.13	1.44	.20	.79	1.52	.24	.37	2.10	.13	.57	.96
Boise, Idaho	1.42	.98	1.95	3.21	1.21	.88	1.79	.35	1.23	1.00	.21	1.13	1.27
Seattle, Wash	3.77	1.93	2.76	6.85	1.43	4.81	3.77	.34	4.82	1.74	2.72	5.66	4.94
Walla Walla, Wash	1.58	1.59	1.79	3.34	1.12	1.30	1.93	.10	2.21	.97	1.80	1.96	1.01
Portland, Oreg	5.42	4.19	3.07	7.87	3.32	6.77	8.36	.16	7.21	3.29	1.81	5.21	6.46
Roseburg, Oreg	4.56	2.21	3.33	5.01	4.90	4.96	8.05	.17	4.51	3.70	1.41	1.89	5.05
Eureka, Calif	7.03	4.20	12.39	5.18	5.10	6.29	8.18	2.11	7.45	9.75	.50	3.19	6.49
Fresno, Calif	1.33	1.31	3.47	1.67	1.07	4.59	1.36	1.54	.61	2.19	.74	.31	1.43
Los Angeles, Calif	2.91	7.04	5.09	1.82	4.49	6.14	1.02	2.37	.86	3.47	.75	.03	.53
Sacramento, Calif	3.14	2.96	4.26	2.45	4.97	3.36	6.29	.81	.54	4.18	.30	2.00	4.45
San Diego, Calif	1.96	1.90	3.62	.66	1.84	1.52	1.46	2.87	.35	1.86	1.53	T.	.30
San Francisco, Calif	3.70	5.04	7.36	3.77	3.81	3.79	9.31	1.23	1.58	5.15	.77	3.30	7.90

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal*[1] *and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for Mar.	March total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	3.76	4.15	0.24	2.35	3.90	2.19	4.03	2.85	1.95	2.96	3.02	1.36	4.13
Boston, Mass	4.08	4.16	T.	3.20	3.73	3.19	4.11	3.72	1.92	4.35	2.49	2.04	5.21
Buffalo, N. Y	2.62	4.18	1.38	3.52	2.69	2.45	2.47	1.57	3.40	3.61	1.70	1.41	2.35
Canton, N. Y	2.84	3.03	.51	1.60	1.98	1.37	3.97	2.26	3.32	3.21	2.07	.95	3.67
Trenton, N. J	4.04	3.28	1.37	2.61	3.45	2.02	4.64	3.81	2.42	3.89	3.70	2.12	3.59
Pittsburgh, Pa	3.01	2.12	1.26	3.63	3.36	1.25	1.89	1.77	3.36	5.84	2.15	4.15	1.61
Scranton, Pa	3.12	5.05	1.21	5.74	2.99	2.23	3.02	3.50	3.17	4.02	1.65	.93	2.11
Cincinnati, Ohio	3.64	2.40	1.64	3.34	4.06	2.28	5.27	4.20	6.60	6.56	3.50	4.16	2.26
Cleveland, Ohio	2.79	2.10	.92	2.29	2.14	2.38	2.67	1.49	4.39	4.02	1.89	1.65	2.95
Evansville, Ind	4.60	3.12	1.08	2.56	3.03	.95	5.05	6.10	4.52	8.20	2.48	1.76	2.44
Indianapolis, Ind	4.01	1.82	1.47	2.44	4.75	1.58	6.72	.66	7.25	7.16	4.41	4.72	2.87
Chicago, Ill	2.55	1.87	.60	2.48	2.11	2.05	4.32	4.57	4.00	5.58	3.05	3.70	1.51
Peoria, Ill	2.96	1.60	.67	2.33	2.26	.91	4.52	5.84	4.89	5.09	4.08	2.28	1.58
Grand Rapids, Mich	2.52	1.59	1.13	3.16	1.87	2.37	4.93	3.42	4.77	3.18	2.36	2.08	1.39
Marquette, Mich	2.08	2.03	1.60	3.36	2.97	1.13	.92	3.34	2.95	2.72	3.24	2.80	.26
Madison, Wis	2.21	1.15	.87	2.93	2.00	2.17	2.17	4.07	1.81	2.01	4.14	2.84	1.45
Duluth, Minn	1.55	1.56	.36	2.48	4.97	.50	1.16	2.28	1.76	2.60	1.28	.42	.66
St. Paul, Minn	1.66	.93	.99	1.26	2.09	.88	.81	2.91	2.51	1.41	1.33	2.83	.39
Des Moines, Iowa	1.65	1.18	1.16	.60	2.30	.29	3.67	2.92	1.07	2.25	4.34	3.10	.88
Dubuque, Iowa	2.21	1.74	1.14	3.91	1.56	2.12	2.24	3.04	2.05	1.65	2.93	2.85	1.03
St. Louis, Mo	3.43	1.25	.44	1.83	1.80	.67	1.72	3.97	6.14	4.84	4.26	3.24	1.50
Springfield, Mo	4.07	3.37	2.23	2.42	2.31	1.33	2.23	4.90	7.35	6.45	2.40	2.77	1.07
Bismarck, N. Dak	1.64	1.23	.35	3.27	.60	.85	1.17	1.21	1.00	.70	.28	.58	.46
Devils Lake, N. Dak	1.91	.76	.09	1.09	.30	.22	1.49	.35	.71	.62	.76	.42	.80
Pierre, S. Dak	1.33	.79	.58	.38	.53	1.47	1.30	1.78	.49	.56	.68	1.40	.05
North Platte, Nebr	.87	.41	2.23	.20	1.48	.32	.44	.38	.42	.47	.38	1.93	.22
Omaha, Nebr	1.30	1.52	1.67	.35	1.35	.11	1.59	.47	1.08	1.47	3.95	1.93	.75
Concordia, Kans	1.48	1.05	2.53	.37	1.49	.77	.90	.47	.47	2.59	1.32	2.56	1.67
Dodge City, Kans	.88	.09	.64	.68	.36	2.59	.94	.43	.01	3.76	.71	2.77	.64
Ida, Kans	2.35	2.12	2.25	2.10	3.55	1.96	1.06	5.36	3.60	7.71	3.69	1.57	1.69
Washington, D. C	3.55	2.27	1.07	2.80	5.12	5.04	4.02	2.39	2.76	4.74	4.47	6.17	1.60
Lynchburg, Va	3.81	2.24	1.14	1.32	4.97	2.41	3.02	2.82	1.75	7.50	5.91	2.77	1.06
Norfolk, Va	4.28	3.77	1.14	1.68	4.60	3.68	3.36	2.39	1.50	4.95	5.12	3.16	3.29
Parkersburg, W. Va	3.82	2.19	1.42	4.48	4.46	3.54	2.37	2.92	4.49	6.06	3.35	3.37	2.19
Charlotte, N. C	3.57	1.56	3.44	1.38	6.42	2.33	2.70	7.11	1.84	6.32	5.84	2.40	2.39
Charleston, S. C	3.72	2.34	2.83	1.96	3.05	1.65	4.05	4.65	2.66	3.15	2.38	3.68	1.28
Atlanta, Ga	5.78	3.17	2.01	1.84	9.15	.89	3.58	10.95	1.64	10.30	5.14	1.86	3.68
Thomasville, Ga	5.09	1.22	3.17	1.62	1.98	1.41	7.36	3.21	3.30	4.12	5.23	2.15	.76
Jacksonville, Fla	3.52	1.84	2.47	.59	1.81	2.31	3.24	.82	.57	3.69	1.15	7.18	1.14
Miami, Fla	2.61	.99	1.57	.28	3.03	1.48	9.74	.06	5.15	.13	.58	.46	2.74
Memphis, Tenn	5.77	3.91	3.03	2.22	7.51	.70	12.41	4.72	7.41	8.24	7.03	2.32	1.48
Nashville, Tenn	5.44	4.33	2.14	3.60	8.06	1.86	8.67	3.25	5.95	9.32	7.69	1.74	3.34
Birmingham, Ala	5.76	5.29	3.68	3.01	11.85	.32	5.91	10.34	4.88	7.14	5.15	4.10	5.47
Mobile, Ala	7.17	2.00	3.46	3.69	2.28	.79	5.09	2.21	6.71	11.46	6.09	1.07	.78
New Orleans, La	5.30	4.17	2.31	.64	3.03	1.69	3.22	3.28	5.59	8.45	4.56	2.39	1.04
Shreveport, La	4.52	6.55	1.92	1.88	2.12	1.14	3.14	5.08	3.87	9.31	3.63	4.32	4.19
Amarillo, Tex	.65	.15	1.00	.57	.25	1.06	1.73	.51	.68	4.06	2.97	1.75	.11
Brownsville, Tex	1.23	1.86	1.99	.07	1.51	.94	.44	.76	.88	1.29	1.32	.12	2.64
El Paso, Tex	.58	.10	1.34	.34	.07	.08	.62	.22	.04	.16	.33	.41	T.
Fort Worth, Tex	2.18	2.89	1.40	3.68	2.42	.93	3.34	4.42	2.67	1.57	1.52	4.66	.02
Galveston, Tex	2.90	4.63	1.43	.25	.91	1.65	2.20	1.77	3.59	2.69	4.53	1.43	.07
San Antonio, Tex	1.68	.83	1.20	.79	.16	1.45	1.39	.83	5.91	3.29	3.07	1.29	.24
Oklahoma City, Okla	2.38	1.68	2.08	1.66	1.20	1.55	1.88	4.20	1.93	4.37	2.58	3.83	.28
Little Rock, Ark	4.94	4.62	2.94	1.59	6.43	1.49	6.44	4.80	7.93	8.30	5.00	2.70	.52
Havre, Mont	.48	.17	.10	.59	.18	.51	.74	.46	1.89	.43	.11	1.01	.70
Kalispell, Mont	1.08	1.17	.59	2.43	1.09	.76	.45	.92	1.55	.77	.42	.74	1.13
Cheyenne, Wyo	.95	.72	1.61	.20	.69	.19	1.52	.66	.39	.33	1.49	1.71	.59
Sheridan, Wyo	1.22	1.14	1.49	.92	1.31	3.32	.43	.83	.65	.34	1.89	1.99	.96
Pueblo, Colo	.86	.32	.48	.65	.44	.35	1.43	.15	.20	.29	.67	1.20	.27
Santa Fe, N. Mex	.73	.82	.70	1.36	.27	1.46	1.70	.57	.75	.44	1.28	1.12	.59
Phoenix, Ariz	.49	.92	.33	.37	.15	.93	.97	1.35	.03	.99	1.08	.99	.33
Modena, Utah	1.30	.15	.40	1.50	.68	1.60	.85	1.84	1.09	.45	.90	2.84	1.33
Salt Lake City, Utah	2.00	1.24	1.48	3.03	2.61	1.81	.54	3.81	1.03	2.44	1.67	2.21	1.71
Winnemucca, Nev	.95	.08	.49	.62	.58	1.95	.57	1.73	.66	.79	.05	.58	1.24
Boise, Idaho	1.44	.39	.78	.71	1.75	1.78	1.82	1.89	.84	2.36	.24	.30	.87
Seattle, Wash	2.88	1.40	1.72	5.45	2.96	3.92	1.84	2.82	3.06	4.45	1.37	.42	1.22
Walla Walla, Wash	1.89	.59	1.96	3.46	.52	1.26	1.91	2.14	2.24	.96	.47	.62	1.07
Portland, Oreg	4.66	2.28	2.15	10.57	5.33	3.47	4.64	3.94	4.28	6.57	1.83	1.40	1.76
Roseburg, Oreg	3.98	1.76	1.76	4.95	3.74	2.57	4.50	2.97	1.71	4.09	1.32	1.84	1.15
Eureka, Calif	6.97	3.13	1.65	4.83	5.01	5.84	6.25	5.79	3.04	6.43	.80	.67	2.02
Fresno, Calif	1.76	.25	.52	1.81	.56	4.19	1.07	3.98	1.05	1.53	.06	2.89	1.68
Los Angeles, Calif	3.00	.58	.60	.90	.18	6.21	2.18	4.25	2.75	1.64	.32	3.42	1.56
Sacramento, Calif	3.01	.59	1.20	1.06	.70	4.00	1.50	3.27	1.45	1.29	.43	1.19	1.14
San Diego, Calif	1.70	.36	.33	.98	.26	4.57	1.83	2.46	1.13	1.34	.34	2.41	1.73
San Francisco, Calif	3.14	1.09	3.02	1.33	1.42	2.73	2.74	3.25	2.28	2.38	.03	1.96	2.63

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal*[1] *and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for April	April total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	2.78	4.51	3.49	2.45	3.25	1.66	2.96	5.40	2.61	2.99	5.97	4.45	1.46
Boston, Mass	3.55	5.87	1.86	4.51	2.72	3.08	2.33	5.68	4.62	2.48	5.26	3.79	2.48
Buffalo, N. Y	2.45	3.24	.59	2.98	2.45	2.41	3.40	2.33	3.62	1.56	1.17	3.08	1.41
Canton, N. Y	2.26	3.56	1.30	1.83	1.92	1.84	3.39	3.45	1.53	3.46	2.41	3.32	1.67
Trenton, N. J	3.29	2.57	3.04	2.67	2.29	3.25	2.91	4.34	1.86	1.69	3.34	5.99	2.35
Pittsburgh, Pa	2.90	3.98	1.27	2.54	2.20	2.73	3.07	4.42	1.66	3.56	3.82	3.09	1.43
Scranton, Pa	2.65	3.89	1.65	4.19	1.06	3.98	2.71	2.53	2.88	3.44	2.92	3.30	1.55
Cincinnati, Ohio	2.95	3.07	.84	2.51	4.07	3.38	3.29	5.78	3.19	4.32	2.96	2.40	1.84
Cleveland, Ohio	2.31	4.28	.65	2.43	3.24	2.55	2.96	5.01	2.58	2.10	2.21	2.85	1.37
Evansville, Ind	3.46	2.83	.40	1.99	5.12	5.26	3.71	2.93	3.42	4.07	4.54	3.49	1.55
Indianapolis, Ind	3.47	3.21	.99	1.81	4.25	5.36	3.35	7.26	3.73	8.55	1.94	3.28	1.98
Chicago, Ill	2.88	1.07	1.02	1.60	2.58	3.41	3.16	4.71	4.47	3.70	1.38	.84	3.15
Peoria, Ill	3.28	2.10	1.60	1.60	4.54	3.70	2.35	6.12	6.36	3.62	1.95	2.13	1.68
Grand Rapids, Mich	2.45	1.97	.85	2.52	4.03	2.22	2.60	2.95	4.39	4.50	2.19	3.29	3.17
Marquette, Mich	1.99	6.80	.99	3.51	1.75	1.37	3.24	2.28	4.10	3.79	1.43	1.57	.75
Madison, Wis	2.38	1.84	.92	3.51	3.29	2.63	2.90	3.43	5.16	3.39	2.59	3.25	1.69
Duluth, Minn	2.14	2.90	1.23	3.27	1.39	2.02	1.82	1.41	2.10	2.83	1.11	2.96	1.03
St. Paul, Minn	2.33	3.73	2.75	3.03	1.65	.94	3.98	2.21	2.46	1.55	2.20	3.32	1.27
Des Moines, Iowa	2.98	1.52	1.36	2.44	5.52	1.81	5.30	4.09	3.72	2.84	1.76	.78	1.64
Dubuque, Iowa	2.92	1.53	.38	2.69	2.05	2.16	4.47	3.91	4.70	2.89	1.48	1.12	2.17
St. Louis, Mo	3.52	1.92	1.20	1.78	4.64	7.09	1.76	3.43	7.01	7.40	3.20	1.90	2.70
Springfield, Mo	3.86	3.63	2.78	5.15	4.63	4.25	3.55	1.53	4.79	4.94	3.33	3.22	2.68
Bismarck, N. Dak	1.88	.92	1.04	.65	1.87	2.13	1.71	.45	2.40	.68	2.01	1.90	.86
Devils Lake, N. Dak	2.03	1.21	1.10	1.09	1.40	2.86	1.14	.54	2.17	.48	1.44	4.96	1.79
Pierre, S. Dak	1.98	1.78	2.63	1.06	2.39	2.60	2.98	3.37	1.33	.59	1.54	.99	.98
North Platte, Nebr	2.15	1.48	7.10	.72	1.95	2.51	2.21	3.42	1.30	2.01	2.02	.20	1.78
Omaha, Nebr	3.01	3.13	.81	1.72	3.96	1.57	4.66	3.39	2.13	2.12	1.57	.94	1.50
Concordia, Kans	2.42	1.00	2.47	1.82	2.60	3.51	4.20	2.82	2.79	2.33	3.20	1.38	1.24
Dodge City, Kans	1.87	1.28	2.28	2.84	1.45	1.38	1.65	1.75	2.73	4.24	2.13	2.34	3.33
Iola, Kans	2.79	1.68	5.56	3.83	4.61	4.60	4.37	2.01	2.86	9.26	2.66	2.77	6.31
Washington, D. C	3.25	3.20	.90	2.96	2.16	6.58	3.72	4.69	2.93	1.05	3.94	5.39	2.44
Lynchburg, Va	3.17	1.70	.87	1.94	3.10	4.97	2.18	3.53	2.76	1.53	2.71	3.35	2.61
Norfolk, Va	3.79	1.88	.91	1.95	2.61	4.81	1.61	4.25	3.02	1.88	3.59	2.89	1.74
Parkersburg, W. Va	2.91	4.38	2.02	2.84	4.29	4.47	2.09	6.38	2.50	3.81	3.47	3.24	1.67
Charlotte, N. C	3.44	2.99	.63	2.15	2.54	5.47	3.90	5.40	1.99	6.59	4.23	6.78	2.34
Charleston, S. C	2.99	2.77	1.13	2.35	.97	2.49	.73	7.40	2.06	1.50	1.06	5.78	1.89
Atlanta, Ga	3.63	3.16	.35	1.51	3.17	6.98	4.18	5.32	3.31	4.34	3.82	7.76	1.17
Thomasville, Ga	3.65	1.78	.57	2.47	1.55	5.02	2.78	7.22	3.09	.64	3.88	5.06	1.91
Jacksonville, Fla	2.72	.30	.49	.46	.82	5.96	1.26	3.42	1.43	1.39	.98	3.00	1.54
Miami, Fla	3.33	5.24	1.32	.39	3.74	4.49	3.07	3.15	2.63	.54	2.15	3.40	3.02
Memphis, Tenn	4.83	2.90	1.67	2.32	4.13	4.57	3.17	7.75	11.64	3.21	6.55	4.74	.89
Nashville, Tenn	4.36	3.83	.72	2.49	4.05	3.39	2.66	8.58	3.50	4.53	4.26	3.55	3.74
Birmingham, Ala	3.67	4.46	1.05	2.14	4.52	7.17	1.55	10.71	4.81	6.64	7.58	5.62	1.15
Mobile, Ala	4.35	1.77	.14	6.64	2.50	11.11	6.84	5.89	4.43	.92	4.39	4.10	.43
New Orleans, La	4.91	5.34	.04	2.55	4.11	10.73	7.88	7.84	4.87	3.81	4.48	3.10	.70
Shreveport, La	4.58	3.35	6.42	4.61	3.34	5.28	3.93	4.01	6.24	6.97	4.40	2.87	.76
Amarillo, Tex	1.72	.95	5.05	1.71	.71	.48	2.56	.64	.39	3.25	3.22	.87	1.33
Brownsville, Tex	1.33	1.16	1.04	1.28	.43	2.59	2.39	0	.52	1.52	.35	.11	1.65
El Paso, Tex	.23	.47	.20	.20	T.	0	.65	.03	.01	.28	.04	.32	T.
Fort Worth, Tex	4.12	5.99	4.98	6.99	4.11	6.21	2.06	.51	1.99	17.64	5.30	2.33	3.59
Galveston, Tex	3.13	8.54	3.37	1.37	1.45	6.63	2.17	.70	2.47	1.66	4.45	1.14	1.58
San Antonio, Tex	2.94	5.26	11.64	1.85	.28	5.14	3.60	1.69	2.78	5.46	3.24	3.36	.18
Oklahoma City, Okla	2.80	2.41	7.50	3.15	2.11	2.45	5.04	2.11	2.39	7.67	4.27	3.67	4.02
Little Rock, Ark	4.51	5.19	2.92	2.61	3.91	8.42	4.09	6.59	7.40	3.55	7.69	5.43	1.08
Havre, Mont	1.01	.04	.24	.09	1.35	.35	.29	2.65	.92	1.11	1.24	1.00	2.66
Kalispell, Mont	1.06	1.21	1.16	.73	1.26	.63	.24	1.48	1.17	1.86	.41	.01	.87
Cheyenne, Wyo	1.85	2.58	3.29	.48	1.75	3.92	1.23	3.97	2.00	3.23	3.26	1.41	1.23
Sheridan, Wyo	1.67	2.75	1.79	2.71	1.12	3.74	1.16	3.45	.62	3.47	2.47	1.92	5.52
Pueblo, Colo	1.43	3.64	3.07	2.02	1.39	1.31	2.33	.86	.79	1.21	.54	.49	.06
Santa Fe, N. Mex	.86	.44	4.82	2.50	.15	.72	1.94	.73	.55	1.43	1.60	1.26	.24
Phoenix, Ariz	.43	.10	.88	.15	1.22	.02	.17	0	.02	.24	.05	.22	.51
Modena, Utah	.79	2.17	2.38	.23	1.17	.35	.27	.44	1.33	1.02	1.22	.53	1.74
Salt Lake City, Utah	2.26	2.84	1.88	.88	1.49	.59	2.50	3.16	2.65	3.06	3.56	.91	1.42
Winnemucca, Nev	.88	1.32	2.33	.19	.68	.52	.49	.80	.06	.55	.79	.23	1.33
Boise, Idaho	1.18	1.63	1.05	.80	3.13	.65	1.18	1.32	.93	1.51	1.09	.54	.87
Seattle, Wash	2.38	3.31	2.91	1.98	4.48	.96	3.20	3.46	1.76	2.53	1.67	1.13	2.39
Walla Walla, Wash	1.70	1.54	2.35	1.83	3.68	.32	1.62	2.80	.81	1.34	1.24	.13	1.01
Portland, Oreg	3.02	3.08	2.03	2.85	5.36	1.13	3.60	4.75	2.26	3.05	1.90	.91	1.92
Roseburg, Oreg	2.48	2.50	1.38	2.28	3.37	.71	2.53	2.67	1.38	2.68	2.23	.45	4.52
Eureka, Calif	3.93	3.27	1.38	1.98	3.78	1.07	4.03	3.12	1.67	2.39	2.95	2.85	7.47
Fresno, Calif	.71	.59	.81	.02	.21	T.	.06	.49	.15	.10	3.93	.54	1.43
Los Angeles, Calif	1.13	.47	.81	T.	.46	.15	.17	1.00	.28	.10	1.97	1.43	1.90
Sacramento, Calif	2.00	.70	.50	.06	.62	1.06	.11	1.36	.39	.40	2.87	.30	1.61
San Diego, Calif	.74	.85	1.15	.01	1.06	T.	.30	.47	.04	.17	1.05	.77	1.11
San Francisco, Calif	1.82	.99	.62	0	.33	.60	.10	1.36	.54	.47	3.92	.30	2.73

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal[1] and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for May	May total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	3.47	1.70	2.99	4.59	3.22	3.37	4.76	1.33	1.97	3.44	2.50	4.52	1.82
Boston, Mass	3.51	2.78	1.64	2.83	4.45	1.99	4.25	5.26	3.64	5.34	.83	2.81	2.07
Buffalo, N. Y	3.10	3.67	1.86	4.13	2.88	2.47	4.32	1.10	2.11	2.01	3.06	2.59	1.24
Canton, N. Y	2.85	.89	1.57	4.59	2.28	3.91	3.04	1.41	1.08	1.19	3.20	3.91	2.48
Trenton, N. J	3.52	1.98	4.33	2.45	2.90	4.37	4.18	2.66	4.04	3.03	.89	4.65	2.00
Pittsburgh, Pa	3.30	2.64	3.84	2.33	2.65	3.89	4.89	1.03	2.49	2.59	3.34	4.54	3.42
Scranton, Pa	3.44	3.29	3.30	3.04	3.25	3.58	3.33	2.48	2.28	2.20	3.26	3.91	3.21
Cincinnati, Ohio	3.52	1.83	5.56	4.49	4.62	4.05	3.56	4.36	2.79	2.09	2.34	3.97	2.05
Cleveland, Ohio	3.22	4.09	3.13	2.04	2.89	4.02	4.15	1.12	1.51	2.42	2.91	2.62	2.24
Evansville, Ind	3.43	1.03	7.96	3.72	3.68	5.75	4.74	5.18	1.56	2.69	4.66	3.44	1.45
Indianapolis, Ind	3.94	1.90	3.94	3.54	3.36	3.85	3.34	5.04	1.55	2.58	5.86	4.47	.94
Chicago, Ill	3.37	5.22	7.04	2.93	3.41	4.57	3.84	1.81	.80	3.18	3.46	2.30	1.59
Peoria, Ill	4.26	2.28	11.49	7.51	2.40	3.02	3.79	3.03	2.13	4.60	5.15	1.91	1.53
Grand Rapids, Mich	3.34	3.06	2.61	4.13	4.48	4.03	4.78	1.92	1.23	2.64	3.70	3.72	.98
Marquette, Mich	3.32	.90	3.12	1.78	1.45	6.58	2.77	.74	1.67	3.27	1.27	3.31	1.46
Madison, Wis	3.62	5.97	5.98	2.38	3.33	4.87	3.55	2.51	5.13	4.16	1.90	1.46	.38
Duluth, Minn	3.47	4.63	3.22	3.57	.86	4.07	1.72	4.67	2.77	3.28	1.81	2.91	1.79
St. Paul, Minn	3.62	1.48	3.88	5.89	3.92	4.52	2.13	1.97	3.38	2.48	2.28	1.47	2.28
Des Moines, Iowa	4.56	4.83	8.21	3.87	3.94	5.87	2.96	3.14	3.62	6.87	4.78	1.26	.77
Dubuque, Iowa	4.32	4.64	7.61	2.49	2.56	8.64	2.79	2.86	2.26	4.79	1.86	2.16	.96
St. Louis, Mo	4.24	.69	7.67	3.00	3.78	3.28	7.86	5.00	4.29	1.26	5.85	6.18	1.48
Springfield, Mo	5.55	3.55	6.52	2.78	3.90	4.19	4.52	6.53	4.06	3.94	4.55	6.02	2.82
Bismarck, N. Dak	2.50	3.61	4.43	1.95	.26	2.03	4.06	1.27	2.72	2.65	1.01	.45	1.14
Devils Lake, N. Dak	2.20	1.42	2.13	1.47	T.	3.69	3.47	1.24	1.03	2.71	2.04	1.24	1.27
Pierre, S. Dak	2.13	3.54	2.56	5.81	2.72	3.02	2.78	5.11	4.79	3.58	1.43	.24	.63
North Platte, Nebr	3.06	2.14	5.55	1.95	4.44	2.30	2.33	3.31	1.89	2.53	4.08	2.26	1.92
Omaha, Nebr	4.50	2.16	6.05	4.57	3.85	4.08	1.70	2.55	3.18	2.37	2.50	2.01	.55
Concordia, Kans	4.70	1.70	4.73	3.99	3.11	2.52	5.68	3.50	2.51	3.54	5.48	1.75	2.77
Dodge City, Kans	3.34	3.47	5.43	.41	1.60	2.90	1.56	3.47	1.36	2.77	7.74	.63	2.18
Iola, Kans	5.05	5.84	7.77	2.98	5.12	4.91	4.15	4.71	4.85	3.70	5.33	2.76	1.76
Washington, D. C	3.83	1.72	2.18	2.30	1.84	2.35	5.27	1.42	5.82	4.27	1.50	6.73	1.67
Lynchburg, Va	3.99	.59	1.99	5.13	2.21	2.15	3.64	.79	6.15	4.37	1.66	5.16	1.34
Norfolk, Va	4.07	2.53	4.82	5.48	1.98	2.97	3.63	1.99	4.72	3.42	1.90	7.47	1.72
Parkersburg, W. Va	3.46	1.51	3.47	4.65	5.06	3.51	5.00	1.64	4.19	4.09	2.31	4.05	2.70
Charlotte, N. C	3.92	.49	5.47	4.41	2.45	2.92	6.38	1.33	4.50	3.72	4.01	2.82	1.64
Charleston, S. C	3.47	.82	8.92	1.22	3.80	3.65	1.69	1.96	5.92	9.56	6.30	2.38	1.96
Atlanta, Ga	3.09	.30	6.11	3.57	4.37	1.73	7.20	4.58	1.75	8.01	9.83	3.60	2.00
Thomasville, Ga	4.01	1.45	8.75	1.54	3.23	1.38	8.02	3.36	4.03	8.21	6.00	2.14	1.41
Jacksonville, Fla	4.25	2.00	3.67	3.32	1.83	2.50	7.32	7.41	4.02	7.18	8.73	.49	4.75
Miami, Fla	6.48	1.82	3.32	5.99	4.62	2.80	13.31	10.33	5.60	9.06	11.48	7.45	18.66
Memphis, Tenn	4.34	4.64	5.70	4.09	2.91	.99	5.51	8.12	1.27	3.48	6.16	6.36	1.36
Nashville, Tenn	3.50	3.01	4.94	5.37	4.75	3.61	8.67	3.18	1.15	4.39	4.31	6.39	1.95
Birmingham, Ala	3.09	1.52	6.14	5.85	3.85	4.07	4.59	7.94	1.24	3.42	7.27	3.44	2.44
Mobile, Ala	4.00	.22	4.67	6.08	2.05	2.90	6.04	3.70	3.07	8.31	7.91	4.10	4.18
New Orleans, La	3.88	.19	3.64	7.97	1.63	2.79	7.02	4.08	1.61	5.75	9.10	5.96	4.51
Shreveport, La	4.16	4.49	1.81	5.01	1.66	1.49	5.78	5.18	3.66	4.04	4.68	7.04	1.45
Amarillo, Tex	3.67	4.43	1.70	.89	2.49	2.23	2.08	2.57	2.09	1.60	1.70	.67	1.94
Brownsville, Tex	2.22	9.03	.50	.37	2.57	4.31	1.97	2.90	2.40	3.90	.48	3.60	2.91
El Paso, Tex	.35	1.23	T.	.43	.14	.05	.14	.03	.31	.36	.01	T.	.59
Fort Worth, Tex	4.36	10.71	2.49	3.70	3.92	1.99	3.99	8.66	1.04	4.58	.54	4.00	8.11
Galveston, Tex	3.23	7.54	2.70	8.08	3.47	.22	9.96	3.86	2.04	4.93	3.56	3.33	1.37
San Antonio, Tex	2.96	5.59	1.89	3.85	3.30	2.80	3.06	2.42	2.01	3.46	1.33	4.71	2.85
Oklahoma City, Okla	5.75	5.07	3.69	.59	2.14	8.31	5.66	8.66	1.85	6.83	7.01	2.58	2.63
Little Rock, Ark	5.10	2.25	4.38	1.49	3.28	.64	4.67	8.18	.75	4.74	10.50	2.44	1.42
Havre, Mont	2.09	1.13	1.95	3.00	.33	.13	1.25	1.39	2.17	2.47	1.23	.78	.73
Kalispell, Mont	2.03	.60	3.68	1.11	.97	.43	1.72	1.15	.57	.76	2.88	.39	.96
Cheyenne, Wyo	2.43	2.10	2.21	1.93	4.65	2.60	.70	2.15	2.40	2.00	2.58	3.58	1.56
Sheridan, Wyo	2.68	3.10	3.98	3.04	3.66	2.83	.81	3.12	2.98	3.04	3.27	1.51	1.84
Pueblo, Colo	1.68	3.51	1.75	.63	3.01	.06	.38	1.26	.98	1.67	.68	1.76	1.00
Santa Fe, N. Mex	1.11	2.28	.83	.07	.84	1.02	3.37	2.28	2.35	.29	1.02	.85	1.31
Phoenix, Ariz	.03	T.	.17	T.	.45	T.	.06	.42	.17	.26	.08	.01	.03
Modena, Utah	.87	.85	.97	.62	2.23	.69	.38	1.67	1.25	1.61	.32	.39	.16
Salt Lake City, Utah	1.95	.89	1.97	.61	3.48	1.32	1.24	1.83	1.95	2.16	1.91	1.15	2.47
Winnemucca, Nev	1.03	.48	1.08	.49	2.49	.77	1.25	.15	1.18	.47	.70	.27	.26
Boise, Idaho	1.29	.51	4.26	1.80	2.06	1.05	.08	.56	2.15	1.56	1.76	.05	.74
Seattle, Wash	1.97	.74	1.72	1.56	.83	1.19	2.08	.96	1.93	1.08	1.45	.68	1.28
Walla Walla, Wash	1.83	.98	2.48	1.29	2.48	.68	.58	.57	.19	.46	1.36	T.	2.98
Portland, Oreg	2.23	1.22	2.59	2.05	2.31	1.38	1.95	.91	.99	1.60	1.48	.45	.74
Roseburg, Oreg	2.05	1.06	3.36	2.05	2.75	1.34	1.23	.24	1.75	1.03	1.56	.60	2.41
Eureka, Calif	2.54	.70	2.07	1.48	1.03	.29	1.48	.04	2.54	.95	1.26	.08	2.57
Fresno, Calif	.63	T.	.99	T.	.18	.51	.10	0	.69	.49	.20	T.	1.29
Los Angeles, Calif	.48	.43	.88	.03	.21	.40	.19	.10	3.57	.65	0	0	.32
Sacramento, Calif	.98	.50	2.75	.10	.12	.01	.01	0	.75	.43	.08	.06	2.11
San Diego, Calif	.41	.08	.28	.01	.31	T.	.34	.44	2.54	.36	0	0	.15
San Francisco, Calif	.81	.37	3.17	.07	.06	T.	T.	T.	.52	.55	.06	T.	4.02

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal*[1] *and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for June	June total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	3.69	3.34	2.00	3.99	8.69	3.38	2.25	3.12	2.88	10.00	3.78	1.75	6.91
Boston, Mass	3.03	1.40	1.39	5.04	4.05	1.94	1.08	5.78	3.58	8.05	2.03	1.07	4.59
Buffalo, N. Y	3.14	1.72	1.72	4.04	5.28	2.81	.54	3.11	1.52	3.38	3.64	2.69	1.41
Canton, N. Y	3.43	2.29	3.67	2.84	3.58	3.57	4.83	2.69	1.66	7.56	4.49	2.08	3.88
Trenton, N. J	3.49	1.74	2.07	2.94	3.15	3.78	1.39	6.63	4.83	4.98	1.47	5.31	.72
Pittsburgh, Pa	3.89	3.31	5.30	3.82	3.65	2.40	3.58	6.74	5.33	3.12	4.28	4.39	2.11
Scranton, Pa	3.57	3.05	3.27	4.68	4.48	2.10	4.46	5.00	1.61	7.06	3.05	2.23	3.57
Cincinnati, Ohio	3.98	2.20	4.47	4.32	2.96	5.97	2.44	2.68	2.35	1.77	3.18	6.75	1.89
Cleveland, Ohio	3.68	2.80	2.03	1.98	3.59	1.83	1.24	5.28	2.38	2.66	1.49	5.73	1.81
Evansville, Ind	4.17	3.99	3.69	4.58	4.20	2.05	6.75	3.77	2.44	2.65	5.09	4.03	5.66
Indianapolis, Ind	4.31	3.65	2.91	5.92	5.24	3.11	3.33	3.78	3.22	.99	2.30	4.04	4.70
Chicago, Ill	3.66	3.53	3.60	7.25	2.87	1.69	3.16	3.94	1.57	.12	1.70	6.69	4.53
Peoria, Ill	4.30	2.45	2.08	2.55	7.43	4.69	3.96	2.18	2.17	.99	2.09	8.08	3.15
Grand Rapids, Mich	2.52	6.13	1.86	6.56	3.44	1.17	1.84	4.09	3.62	3.16	1.67	3.18	1.13
Marquette, Mich	3.51	4.21	5.13	7.26	2.48	2.51	2.01	2.80	1.52	4.50	3.10	1.36	1.73
Madison, Wis	4.10	3.46	1.75	4.52	6.47	1.84	3.35	5.62	3.52	3.17	3.05	4.13	6.05
Duluth, Minn	4.53	6.28	4.96	5.81	1.93	.84	3.77	5.66	4.58	3.97	3.89	3.42	3.20
St. Paul, Minn	4.41	6.49	3.58	3.79	3.79	2.81	4.40	7.76	4.70	4.61	4.28	7.24	5.77
Des Moines, Iowa	4.96	3.89	3.60	2.24	8.16	5.63	7.36	1.25	4.66	1.68	4.95	9.30	6.24
Dubuque, Iowa	4.55	5.81	3.06	4.61	5.12	6.15	6.24	5.24	3.54	1.20	3.66	5.37	10.80
St. Louis, Mo	4.47	.10	9.77	3.97	.62	1.47	5.30	1.53	2.31	.80	4.33	6.80	4.84
Springfield, Mo	5.19	1.48	5.81	5.00	2.09	3.61	4.60	1.43	9.08	.66	6.19	7.61	3.88
Bismarck, N. Dak	3.54	9.90	5.70	1.50	2.15	.59	.63	2.05	.92	3.24	1.99	6.21	6.82
Devils Lake, N. Dak	3.53	5.84	4.53	4.14	1.69	2.00	3.58	4.69	4.70	2.52	1.45	3.44	4.48
Pierre, S. Dak	3.08	5.72	4.12	2.33	.84	1.39	2.55	4.12	.74	4.80	5.67	5.49	3.54
North Platte, Nebr	3.25	4.63	3.39	3.09	2.38	2.18	4.15	2.55	1.39	.87	4.15	1.90	1.46
Omaha, Nebr	5.05	7.01	2.83	2.58	6.19	1.80	4.44	2.62	3.57	2.68	6.60	6.08	7.42
Concordia, Kans	4.97	2.73	9.33	4.66	3.17	1.85	6.14	.84	3.35	2.10	7.32	1.87	5.20
Dodge City, Kans	3.32	3.82	2.96	5.16	.91	.26	1.72	2.68	4.48	1.37	2.96	1.23	2.22
Iola, Kans	4.73	3.94	8.56	8.58	.94	2.54	4.21	3.59	8.41	5.63	5.35	3.38	6.54
Washington, D. C	4.18	6.20	6.58	7.53	6.25	2.06	3.44	4.80	3.45	4.10	2.80	3.82	1.53
Lynchburg, Va	3.89	2.21	4.16	6.28	5.17	2.91	7.61	5.12	.85	3.37	2.12	3.58	2.77
Norfolk, Va	4.33	3.20	6.52	1.98	4.65	3.25	3.48	5.05	1.05	9.78	1.43	3.46	2.60
Parkersburg, W. Va	4.65	2.16	4.84	3.30	3.17	3.39	2.80	5.20	3.63	5.06	5.42	3.25	3.48
Charlotte, N. C	4.46	2.12	5.45	5.55	4.70	2.43	2.43	3.56	1.33	2.74	2.21	7.86	1.61
Charleston, S. C	5.39	4.33	4.52	9.75	1.92	.27	6.33	2.45	.61	3.54	3.78	2.39	5.49
Atlanta, Ga	3.88	2.14	3.62	3.28	1.75	3.31	2.08	3.47	1.56	4.41	3.23	3.14	1.45
Thomasville, Ga	4.72	2.62	4.15	3.55	2.59	6.74	6.38	3.22	3.31	5.36	10.71	7.19	4.71
Jacksonville, Fla	5.53	1.32	1.55	6.45	3.03	3.32	13.79	8.27	2.71	5.88	4.94	4.21	5.65
Miami, Fla	7.13	2.57	12.53	6.36	6.71	6.17	7.26	3.80	1.14	4.50	5.84	4.22	5.70
Memphis, Tenn	4.37	.12	1.72	3.19	2.51	3.96	5.64	1.83	2.15	3.31	5.04	3.62	.40
Nashville, Tenn	4.37	2.95	1.42	4.62	8.03	2.70	3.96	3.84	2.29	5.37	4.42	.91	2.18
Birmingham, Ala	3.88	4.49	4.80	2.02	3.44	7.64	3.30	3.63	1.45	3.82	2.10	6.85	2.24
Mobile, Ala	5.95	5.78	7.41	5.42	2.33	2.92	2.12	6.64	3.97	2.03	5.97	9.39	7.19
New Orleans, La	6.16	3.51	5.61	9.70	2.77	2.45	4.50	8.45	9.44	6.45	5.38	4.27	4.12
Shreveport, La	3.58	2.29	3.10	3.08	.49	2.13	5.56	5.23	3.34	3.77	2.48	1.04	1.24
Amarillo, Tex	2.99	.84	1.04	2.18	.83	1.44	2.94	2.58	5.75	3.77	9.76	2.82	1.71
Brownsville, Tex	2.37	.63	T.	.17	.71	1.39	5.08	6.70	4.59	5.55	1.98	7.00	2.59
El Paso, Tex	.55	1.47	T.	0	.36	.83	.27	.89	.79	.05	.09	T.	.17
Fort Worth, Tex	3.08	2.97	6.88	3.30	1.97	5.16	3.72	2.33	2.63	1.76	6.74	1.25	.29
Galveston, Tex	4.75	.12	.08	3.15	.65	2.79	15.49	6.68	4.97	8.96	3.24	2.51	12.95
San Antonio, Tex	3.11	.01	.33	.48	.02	3.35	7.01	2.83	4.59	3.92	.79	4.66	.48
Oklahoma City, Okla	3.67	.02	7.23	6.16	1.83	3.09	4.87	2.08	3.80	.50	3.62	3.15	1.94
Little Rock, Ark	4.09	.01	5.72	3.80	3.82	6.77	2.75	1.27	4.67	2.21	1.80	2.89	2.51
Havre, Mont	2.82	4.07	3.35	4.03	1.43	1.45	1.68	3.09	2.00	.82	5.89	5.76	5.14
Kalispell, Mont	1.74	2.51	2.09	3.91	2.76	.58	.55	.95	1.22	.54	1.49	3.24	2.07
Cheyenne, Wyo	1.57	.25	1.34	.37	.34	1.24	.72	.70	2.92	.90	2.32	1.52	1.81
Sheridan, Wyo	1.90	1.65	4.71	2.23	1.02	1.27	.54	1.88	1.94	2.21	2.11	2.01	1.72
Pueblo, Colo	1.47	1.90	1.26	1.22	.58	1.02	1.39	.47	7.14	.53	.91	.34	.24
Santa Fe, N. Mex	1.04	1.72	.15	.38	.06	.08	1.50	2.04	2.85	.74	.24	.31	.30
Phoenix, Ariz	.12	.05	.48	0	0	.08	T.	T.	.04	T.	0	T.	.21
Modena, Utah	.40	1.50	.85	.01	T.	.35	.13	.59	.01	.23	.24	0	2.73
Salt Lake City, Utah	.77	2.68	1.44	.66	.19	.20	T.	.15	.08	.83	1.39	.56	1.39
Winnemucca, Nev	.64	.17	.05	0	.35	1.33	0	.51	.82	.15	2.59	T.	2.18
Boise, Idaho	.88	.82	.48	1.68	.34	.58	T.	1.18	.09	.57	2.05	.51	1.84
Seattle, Wash	1.49	1.75	.40	1.82	3.70	.50	.35	1.93	1.29	.03	1.01	.35	.61
Walla Walla, Wash	1.19	1.12	.40	1.77	.57	.10	.04	1.03	.67	.51	2.89	.67	.72
Portland, Oreg	1.64	1.52	1.47	1.83	1.17	.12	.91	2.11	1.36	.14	1.19	.68	.73
Roseburg, Oreg	1.07	1.76	.71	.91	.26	.33	.68	.96	.76	1.01	1.22	.56	.60
Eureka, Calif	1.06	1.73	.05	1.60	0	.02	.14	1.92	1.30	.14	1.07	.05	.24
Fresno, Calif	.10	.23	0	0	0	.01	0	.03	.01	.12	T.	0	.02
Los Angeles, Calif	.07	.09	T.	0	0	.03	0	T.	.01	T.	.02	0	.56
Sacramento, Calif	.15	.60	0	.01	0	T.	0	.05	.05	T.	.09	0	.05
San Diego, Calif	.03	T.	T.	T.	T.	.06	0	.02	T.	T.	.04	T.	.15
San Francisco, Calif	.17	.29	0	T.	T.	T.	T.	.04	T.	.26	.06	0	.05

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal [1] and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for July	July total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	4.24	2.62	8.98	5.60	6.97	8.25	5.82	4.46	5.06	3.54	4.34	3.07	5.80
Boston, Mass	3.36	2.64	8.85	5.67	1.10	2.64	4.63	1.56	11.69	2.63	3.36	2.04	3.54
Buffalo, N. Y	3.40	1.30	3.37	2.04	4.46	1.37	1.33	4.50	1.42	2.52	.71	4.10	3.28
Canton, N. Y	3.23	2.38	5.92	1.01	2.23	3.64	3.10	4.98	2.20	1.86	1.18	2.87	5.46
Trenton, N. J	4.77	4.75	7.20	5.94	4.24	4.97	10.41	2.16	2.01	2.29	3.18	4.21	5.15
Pittsburgh, Pa	4.42	1.89	3.37	3.88	2.33	2.22	6.20	3.29	2.81	2.80	6.74	3.10	3.81
Scranton, Pa	3.83	6.71	2.60	2.29	2.27	2.59	4.81	5.42	4.90	4.48	4.72	3.65	6.80
Cincinnati, Ohio	3.54	3.00	4.93	1.79	4.04	3.05	2.08	3.19	4.28	2.45	2.51	1.29	9.13
Cleveland, Ohio	3.55	1.00	4.73	2.48	3.60	1.08	2.46	3.32	3.52	3.98	2.09	3.10	4.52
Evansville, Ind	3.81	1.41	2.92	5.46	2.26	1.45	1.32	2.86	2.45	6.39	1.00	2.70	1.92
Indianapolis, Ind	4.13	.49	7.94	2.44	3.20	2.44	.97	4.51	1.42	2.67	2.43	1.75	4.67
Chicago, Ill	3.64	2.11	5.57	2.22	2.68	2.66	1.59	1.61	1.87	4.00	2.67	3.66	2.47
Peoria, Ill	2.97	.82	6.91	1.14	1.92	3.46	3.09	1.56	3.95	3.06	1.35	5.59	3.93
Grand Rapids, Mich	2.65	1.18	4.60	1.07	6.91	1.17	.66	3.60	2.38	4.05	.95	3.37	4.58
Marquette, Mich	3.10	3.45	1.78	1.74	1.99	2.50	2.47	4.62	4.39	3.49	4.11	1.55	1.66
Madison, Wis	3.99	1.49	5.04	2.66	3.10	2.33	3.96	1.39	2.46	6.09	2.28	5.01	3.30
Duluth, Minn	3.65	2.99	1.60	1.19	4.29	1.23	2.62	4.82	5.41	2.30	5.40	5.87	3.17
St. Paul, Minn	3.40	.95	4.53	.75	4.12	5.05	7.47	1.35	2.39	2.32	2.51	1.73	4.28
Des Moines, Iowa	3.86	1.22	9.39	1.50	1.58	1.18	2.68	5.66	2.49	7.13	.78	.98	2.21
Dubuque, Iowa	4.30	1.57	5.08	.85	2.10	3.77	7.82	1.11	2.48	6.01	1.67	4.11	7.93
St. Louis, Mo	3.43	1.52	6.02	1.20	3.17	.60	1.50	.73	2.05	2.42	1.83	3.62	1.73
Springfield, Mo	4.79	3.35	1.82	.74	4.15	1.11	1.96	2.42	.70	6.15	2.67	5.92	3.53
Bismarck, N. Dak	2.14	2.04	4.02	4.03	1.50	2.09	.76	2.72	2.18	2.77	4.77	1.40	.42
Devils Lake, N. Dak	3.78	1.63	1.00	3.70	1.60	2.81	1.76	2.51	4.49	.87	2.07	1.31	1.40
Pierre, S. Dak	2.35	1.53	6.12	2.50	2.68	2.04	2.80	2.81	4.92	2.84	2.67	1.11	2.77
North Platte, Nebr	2.68	.58	4.66	.59	1.13	1.88	4.98	1.62	.80	4.91	3.63	1.00	.89
Omaha, Nebr	4.33	1.09	7.75	.45	.78	1.76	.63	3.91	4.99	5.60	.86	2.79	.45
Concordia, Kans	3.62	1.13	5.10	.82	.60	1.77	.03	4.90	5.24	5.82	4.48	3.55	3.13
Dodge City, Kans	3.38	.36	3.92	.09	2.76	2.25	1.83	3.79	2.91	2.80	1.95	3.64	6.84
Iola, Kans	3.92	3.75	6.07	T.	4.22	2.48	2.21	4.13	4.03	3.99	2.64	7.55	2.24
Washington, D. C	4.65	2.32	3.21	4.97	9.41	3.79	6.80	5.71	4.79	9.59	4.92	2.76	5.82
Lynchburg, Va	4.03	4.52	3.05	9.76	2.97	3.75	5.21	4.82	3.56	2.25	2.52	3.74	3.56
Norfolk, Va	5.80	3.91	5.72	3.05	11.73	3.06	7.21	4.33	3.27	11.92	4.14	4.45	5.52
Parkersburg, W. Va	4.66	2.13	4.21	4.92	6.17	1.28	3.30	4.56	2.80	3.65	5.52	3.75	5.44
Charlotte, N. C	5.49	4.83	3.08	16.55	5.85	1.90	7.40	4.11	5.55	5.19	5.89	3.01	.62
Charleston, S. C	7.26	7.14	2.98	11.61	9.95	7.69	8.53	4.69	16.61	8.02	7.23	6.59	2.38
Atlanta, Ga	4.73	3.66	3.22	10.85	1.98	2.47	7.50	5.95	3.88	6.97	2.60	4.82	2.35
Thomasville, Ga	5.32	6.20	4.88	13.32	9.11	2.46	9.81	3.38	6.71	3.54	10.59	4.51	7.06
Jacksonville, Fla	6.20	5.13	9.36	3.93	10.36	3.35	6.32	5.47	9.76	3.91	5.14	12.17	5.22
Miami, Fla	6.17	4.52	6.54	2.49	2.48	4.01	5.90	6.61	3.09	8.16	5.20	8.31	2.56
Memphis, Tenn	3.51	.58	1.16	1.74	5.96	2.27	1.94	3.55	3.19	3.71	3.65	.99	5.92
Nashville, Tenn	4.35	2.58	2.03	4.17	3.25	3.63	1.83	3.00	4.56	6.15	2.13	4.36	1.74
Birmingham, Ala	4.79	3.91	5.72	20.12	3.71	3.34	5.33	4.63	5.79	5.23	6.42	1.69	5.52
Mobile, Ala	7.04	5.17	5.82	29.56	10.54	2.85	6.94	7.04	4.89	9.57	4.98	4.31	9.35
New Orleans, La	6.47	9.18	7.55	6.78	8.35	2.03	7.62	6.20	7.90	4.65	8.72	2.56	9.90
Shreveport, La	3.72	.84	2.44	3.09	9.30	T.	.70	4.02	4.29	4.09	3.40	T.	1.71
Amarillo, Tex	3.17	3.07	4.14	.94	2.68	2.23	1.75	1.85	4.17	1.04	1.85	3.66	5.13
Brownsville, Tex	1.88	T.	.15	4.52	4.52	1.34	6.79	2.18	2.81	1.92	1.53	1.40	.04
El Paso, Tex	2.13	4.91	2.45	.59	.41	1.52	1.87	.84	2.13	1.08	.20	3.00	1.40
Fort Worth, Tex	2.57	.73	.30	1.38	2.65	1.10	5.25	3.49	1.14	1.35	.99	.96	.98
Galveston, Tex	3.98	1.29	2.45	4.64	.46	2.24	3.73	3.21	5.77	1.80	5.80	T.	3.90
San Antonio, Tex	2.22	.02	.92	4.53	2.19	1.06	7.88	.39	.18	.10	2.54	.05	1.34
Oklahoma City, Okla	3.65	.62	1.19	2.87	2.96	.13	.53	4.02	4.43	2.51	.15	3.55	2.35
Little Rock, Ark	3.99	3.71	.96	.44	4.54	.94	2.36	3.06	1.44	2.59	7.86	1.25	5.16
Havre, Mont	1.92	.41	3.17	5.90	.45	.75	.12	1.51	2.51	2.76	4.33	.70	1.45
Kalispell, Mont	.84	.69	2.74	1.76	.09	1.47	.88	.98	.62	.81	1.60	.97	.58
Cheyenne, Wyo	1.99	1.30	1.71	1.81	1.62	3.90	2.83	2.12	1.37	2.01	3.23	1.12	3.80
Sheridan, Wyo	1.04	.13	1.44	.83	.17	1.78	.37	1.51	.56	2.11	6.37	1.08	.96
Pueblo, Colo	1.97	3.92	1.91	.93	1.32	.93	2.95	1.62	5.26	.29	4.05	.84	3.78
Santa Fe, N. Mex	2.71	3.98	4.37	2.77	.45	2.42	4.02	1.04	3.87	1.75	2.06	1.53	2.48
Phoenix, Ariz	1.07	.21	1.12	.77	3.97	1.02	1.05	.25	.38	.74	.77	.09	.03
Modena, Utah	1.26	1.50	1.41	4.72	1.03	.93	1.37	1.82	2.50	1.22	.81	1.09	1.38
Salt Lake City, Utah	.54	1.20	.07	.63	.68	.76	.06	.51	.36	.65	.21	.45	2.13
Winnemucca, Nev	.17	.19	.05	.01	.06	.27	T.	T.	T.	.36	.24	.31	1.22
Boise, Idaho	.18	1.04	.63	.81	T.	.11	T.	.05	T.	.19	.68	T.	.37
Seattle, Wash	.67	.01	.84	1.93	.09	1.38	.22	1.00	.18	0	.68	.51	.06
Walla Walla, Wash	.39	.12	.65	.72	T.	.96	.09	.13	.38	.04	.33	.90	T.
Portland, Oreg	.62	.01	1.52	2.55	.01	1.08	.23	1.18	T.	T.	2.17	.03	T.
Roseburg, Oreg	.32	.01	.64	2.22	.01	.57	.06	.42	0	0	.59	T.	T.
Eureka, Calif	.11	.01	.26	1.34	0	.22	.01	.13	0	0	.03	.02	T.
Fresno, Calif	0	T.	0	T.	T.	T.	0	0	0	T.	0	0	.14
Los Angeles, Calif	0	.01	0	0	T.	.09	0	T.	T.	T.	T.	0	T.
Sacramento, Calif	0	0	T.	.07	T.	0	T.	0	0	T.	0	T.	.01
San Diego, Calif	0	0	T.	.02	T.	T.	T.	T.	T.	.01	.01	0	T.
San Francisco, Calif	.01	.02	.01	.03	T.	T.	.01	T.	0	T.	0	0	.06

T—Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal[1] and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for Aug.	August total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	3.80	2.90	6.13	2.95	4.98	1.42	3.77	4.61	5.56	3.41	2.85	2.34	1.27
Boston, Mass	4.03	3.20	5.63	2.19	7.06	1.56	5.07	2.32	1.63	4.75	1.86	6.86	1.40
Buffalo, N. Y	2.99	4.95	6.19	1.46	1.86	3.02	3.04	1.77	1.80	4.62	1.26	2.69	2.48
Canton, N. Y	2.69	4.23	5.66	1.84	4.50	3.18	2.60	1.94	3.91	4.25	2.36	3.10	1.74
Trenton, N. J	5.37	1.63	6.22	1.25	2.11	2.52	4.82	7.08	8.01	5.16	3.32	5.87	1.15
Pittsburgh, Pa	3.18	4.52	2.73	4.73	4.75	4.84	7.15	2.53	3.03	2.35	4.24	3.46	.96
Scranton, Pa	4.25	2.56	8.17	.67	3.94	4.04	2.30	3.33	2.96	2.56	3.32	3.53	1.35
Cincinnati, Ohio	3.33	4.28	4.13	3.57	1.70	4.53	.92	6.10	6.02	5.60	3.72	3.03	3.45
Cleveland, Ohio	3.15	3.93	1.47	1.36	4.65	2.47	7.19	2.33	3.32	1.20	3.97	.90	1.42
Evansville, Ind	3.24	3.59	7.83	4.31	1.92	3.03	2.49	6.31	5.26	3.08	3.09	.92	.48
Indianapolis, Ind	3.33	5.58	5.25	2.47	1.48	2.24	3.43	1.85	7.26	2.45	4.83	4.77	3.82
Chicago, Ill	2.88	3.76	4.33	1.05	1.24	1.27	1.10	3.16	4.92	1.45	7.76	8.12	2.60
Peoria, Ill	2.93	2.40	4.78	6.03	3.36	5.88	4.73	1.87	3.86	.72	2.84	7.15	4.27
Grand Rapids, Mich	2.59	3.49	2.87	4.41	.46	.84	1.67	.76	6.15	2.96	2.07	2.51	2.56
Marquette, Mich	2.86	2.12	5.43	.99	3.28	3.20	1.60	3.50	3.48	2.02	1.08	4.46	1.96
Madison, Wis	3.21	3.60	4.39	4.24	2.72	2.03	.89	2.61	3.97	1.33	5.59	7.23	2.31
Duluth, Minn	3.53	4.20	1.56	3.37	2.04	2.32	2.99	1.44	2.84	2.91	1.76	4.40	3.04
St. Paul, Minn	3.46	4.48	3.98	1.60	2.82	5.19	2.22	.96	2.79	1.31	1.92	6.51	.16
Des Moines, Iowa	3.61	1.77	1.71	2.62	1.82	2.54	2.19	2.11	6.63	6.63	5.34	4.15	4.79
Dubuque, Iowa	3.04	4.01	2.84	1.49	2.11	6.09	1.58	3.44	4.29	1.99	4.77	7.05	1.91
St. Louis, Mo	2.66	5.42	11.43	10.69	1.99	5.26	3.03	4.16	2.75	1.79	6.19	3.90	2.75
Springfield, Mo	4.31	4.70	10.81	4.45	4.26	3.12	.53	6.31	7.59	2.47	.78	5.97	1.74
Bismarck, N. Dak	1.98	2.02	3.44	1.97	1.37	2.62	1.46	.59	.18	.22	.63	1.91	1.69
Devils Lake, N. Dak	2.76	2.06	.90	3.16	1.12	2.25	2.28	2.21	5.63	1.72	2.25	2.39	.89
Pierre, S. Dak	2.01	2.19	.55	4.65	1.93	2.30	2.24	2.07	1.59	2.03	3.76	2.74	1.03
North Platte, Nebr	2.46	3.45	4.23	2.35	1.96	1.73	.76	4.73	2.57	2.26	4.70	.96	1.75
Omaha, Nebr	3.62	2.24	3.06	2.74	3.65	1.14	2.91	2.78	2.07	1.01	4.24	1.67	2.70
Concordia, Kans	2.81	2.11	1.99	1.21	2.63	3.10	1.00	5.15	1.93	.88	2.75	2.38	4.10
Dodge City, Kans	2.59	1.23	6.16	2.25	4.46	.84	1.23	2.43	2.65	3.19	1.46	3.23	3.09
Iola, Kans	3.47	2.74	5.05	2.43	3.91	1.50	2.22	7.55	5.79	3.65	3.39	6.40	.51
Washington, D. C	4.40	6.00	7.00	2.83	.77	1.88	3.41	4.70	1.10	3.08	2.19	5.07	3.89
Lynchburg, Va	4.25	2.60	5.45	2.69	3.53	2.91	3.03	6.76	.83	1.18	3.44	4.80	.56
Norfolk, Va	5.97	1.10	2.46	2.99	4.54	2.48	3.47	3.83	3.13	8.04	4.47	4.27	1.05
Parkersburg, W. Va	3.53	5.05	4.78	2.41	2.18	5.14	4.60	2.65	3.71	7.44	7.38	1.44	1.65
Charlotte, N. C	5.55	2.25	4.59	2.70	4.84	2.18	3.94	8.91	2.78	2.74	2.93	.94	3.34
Charleston, S. C	6.97	4.43	5.40	3.10	5.06	2.87	5.70	7.02	5.70	5.18	12.29	8.28	1.62
Atlanta, Ga	4.48	5.04	4.92	3.61	5.61	4.20	3.80	10.02	8.03	2.72	4.17	3.87	.02
Thomasville, Ga	5.03	3.96	2.76	1.01	8.95	6.16	8.16	4.96	3.56	2.71	6.89	2.88	3.44
Jacksonville, Fla	6.21	8.47	4.08	6.76	6.65	3.12	6.96	7.46	7.70	7.71	4.67	3.55	5.63
Miami, Fla	6.42	3.77	1.37	10.10	4.32	1.43	3.73	4.12	3.14	7.97	6.34	3.40	8.95
Memphis, Tenn	3.20	7.31	10.60	2.98	2.55	2.56	.82	2.32	5.84	.76	5.06	.67	3.20
Nashville, Tenn	3.47	8.64	6.03	4.27	3.02	3.05	6.80	6.85	2.85	3.83	9.60	2.59	1.02
Birmingham, Ala	4.48	6.38	4.40	3.51	8.98	.98	5.33	9.09	3.97	2.95	6.90	.61	.71
Mobile, Ala	6.81	9.78	7.69	5.46	6.42	14.16	6.04	7.78	8.37	5.13	4.46	3.21	1.27
New Orleans, La	5.61	8.47	7.22	4.89	6.92	6.19	7.38	4.18	3.09	5.71	7.60	2.26	4.41
Shreveport, La	2.24	4.00	8.60	.55	5.55	2.23	3.85	2.82	.64	2.04	2.03	1.66	.23
Amarillo, Tex	2.81	2.97	5.85	3.82	6.17	2.36	3.21	5.32	5.77	.78	1.54	3.57	3.19
Brownsville, Tex	2.59	.68	2.58	5.58	.29	.40	.25	0	.14	2.43	1.34	.28	1.96
El Paso, Tex	1.72	1.85	1.37	3.07	4.39	1.66	.72	1.33	.35	.27	2.96	2.58	2.16
Fort Worth, Tex	2.72	9.02	10.33	3.84	1.92	.29	5.00	4.22	.95	.52	1.68	3.77	.40
Galveston, Tex	5.01	8.17	19.08	4.14	2.71	3.04	2.17	2.65	1.42	2.33	4.61	.49	2.78
San Antonio, Tex	2.69	7.80	3.90	5.07	.10	2.61	2.14	2.26	.45	.27	2.94	T.	1.72
Oklahoma City, Okla	3.17	2.76	5.26	.68	4.50	1.91	2.28	4.86	.85	.19	3.57	3.10	1.83
Little Rock, Ark	3.65	4.77	10.33	3.59	4.38	1.42	3.45	3.33	7.08	.83	2.55	1.74	.94
Havre, Mont	1.26	2.43	.94	.34	.43	2.61	.76	.81	.27	1.70	1.47	1.39	1.78
Kalispell, Mont	.89	1.31	.22	1.96	.32	.96	1.06	2.61	.56	.76	.96	.74	1.12
Cheyenne, Wyo	1.47	1.67	3.98	1.26	1.75	1.68	.43	1.32	.61	2.16	2.06	.23	1.13
Sheridan, Wyo	.73	.05	.89	.13	.83	.93	.18	.68	.24	1.65	1.44	.35	T.
Pueblo, Colo	1.57	2.18	3.27	3.12	1.74	.57	3.23	1.89	2.24	.69	4.65	.15	1.42
Santa Fe, N. Mex	2.36	2.51	1.02	1.67	1.37	.82	2.06	1.98	3.71	1.85	2.33	.71	1.41
Phoenix, Ariz	.96	.30	.25	.30	.11	3.47	2.40	.75	1.62	.57	.65	.14	.61
Modena, Utah	1.83	.73	.46	1.97	.26	1.26	.50	.81	2.44	2.41	2.13	.31	2.64
Salt Lake City, Utah	.78	.24	T.	.60	.71	.61	.50	1.31	.82	1.85	2.41	.30	1.83
Winnemucca, Nev	.17	T.	.08	.11	.57	.37	T.	.76	.16	.91	.25	.01	.79
Boise, Idaho	.16	.04	T.	.45	T.	.48	T.	.33	.34	1.13	.20	.12	.28
Seattle, Wash	.51	.01	.05	.11	.03	1.12	.08	1.15	1.61	1.17	1.98	.70	1.31
Walla Walla, Wash	.45	T.	T.	.17	T.	.99	.06	1.87	.57	1.25	.57	1.25	.51
Portland, Oreg	.63	.01	.01	.27	T.	.31	.10	1.25	.30	2.06	.26	.62	.71
Roseburg, Oreg	.33	T.	.03	.36	T.	1.05	.02	.22	.04	.32	.30	.76	.85
Eureka, Calif	.10	T.	0	.12	.02	.21	.01	.49	.01	.03	.02	1.03	.25
Fresno, Calif	0	T.	0	.08	T.	0	0	.15	0	T.	0	T.	T.
Los Angeles, Calif	0	0	0	T.	T.	.03	T.	0	T.	0	T.	0	0
Sacramento, Calif	.01	0	.01	T.	T.	T.	T.	T.	0	T.	T.	T.	.01
San Diego, Calif	0	0	0	.01	T.	.11	.01	.01	T.	T.	T.	T.	.01
San Francisco, Calif	0	0	0	.29	T.	0	T.	0	0	T.	.01	.01	T.

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal*[1] *and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for Sept.	September total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	4.17	2.68	3.74	4.23	1.80	6.52	3.71	5.60	3.53	1.89	2.11	7.39	4.24
Boston, Mass	3.19	.21	.69	1.90	1.91	9.19	5.83	1.90	1.22	3.65	.38	6.96	3.45
Buffalo, N. Y	3.18	2.31	1.35	1.38	2.29	3.79	1.47	2.03	1.96	1.25	1.86	6.48	5.61
Canton, N. Y	2.81	1.73	1.32	3.42	2.02	6.05	4.69	5.11	3.52	.96	2.10	5.61	6.03
Trenton, N. J	3.59	.41	.62	2.51	3.89	3.20	2.74	2.23	1.69	1.75	4.19	5.94	3.91
Pittsburgh, Pa	2.48	.69	1.71	1.63	1.90	2.22	1.64	3.48	5.07	1.54	1.62	5.39	1.58
Scranton, Pa	2.86	1.05	2.91	4.35	.91	4.59	2.21	4.94	4.38	1.18	4.38	7.35	2.26
Cincinnati, Ohio	2.31	.90	5.65	3.29	2.97	2.70	3.79	2.98	3.00	2.93	1.40	2.07	3.67
Cleveland, Ohio	3.22	1.16	4.23	2.84	2.74	3.78	1.79	1.85	2.77	1.60	3.32	6.08	5.62
Evansville, Ind	2.66	5.06	2.98	2.57	3.35	3.33	3.59	3.36	3.87	2.16	1.84	5.89	6.20
Indianapolis, Ind	3.05	2.15	4.17	2.26	2.93	5.14	1.86	2.37	7.54	1.52	3.91	2.80	5.96
Chicago, Ill	3.02	1.56	3.53	2.24	2.15	1.84	3.85	3.35	5.72	4.37	2.50	3.14	3.19
Peoria, Ill	3.12	5.55	4.88	3.73	3.14	1.67	3.48	1.84	4.86	2.71	5.28	3.74	4.99
Grand Rapids, Mich	3.12	2.34	8.11	2.43	3.59	2.01	3.86	3.68	4.33	5.04	5.77	3.48	4.35
Marquette, Mich	3.51	1.28	3.68	5.74	2.10	5.49	2.49	1.94	4.30	3.26	1.63	2.42	3.90
Madison, Wis	3.18	3.49	10.69	5.73	2.98	1.52	6.83	1.12	7.90	2.34	4.36	2.87	4.50
Duluth, Minn	3.55	2.55	2.28	4.25	2.15	1.41	1.42	1.31	3.09	2.23	2.61	3.95	3.73
St. Paul, Minn	3.42	2.16	2.92	1.81	2.00	1.49	1.25	1.36	3.21	1.82	1.10	3.05	3.49
Des Moines, Iowa	3.07	14.81	4.51	1.72	1.99	.91	7.47	4.44	7.16	3.00	5.17	3.47	3.75
Dubuque, Iowa	3.59	4.75	9.62	6.19	2.40	1.63	5.35	1.46	8.35	3.40	5.04	2.44	4.16
St. Louis, Mo	2.91	6.68	1.41	2.69	3.50	5.09	6.13	4.79	5.60	2.49	3.51	1.97	4.59
Springfield, Mo	3.76	3.59	3.06	1.19	3.74	4.82	1.62	4.42	3.90	.95	3.82	4.12	7.75
Bismarck, N. Dak	1.19	1.10	1.68	.70	1.75	.47	.34	1.20	1.67	1.93	2.83	1.60	.85
Devils Lake, N. Dak	1.39	1.57	3.11	.89	.83	.48	.95	5.34	3.58	3.30	1.63	4.54	6.63
Pierre, S. Dak	1.11	.79	2.18	1.06	1.83	.64	1.59	.98	3.21	.19	1.21	1.98	.65
North Platte, Nebr	1.50	.17	1.81	.70	2.68	.38	1.56	.83	1.00	1.00	.88	1.66	.91
Omaha, Nebr	3.03	3.56	2.17	1.76	.91	1.03	5.28	1.03	5.35	1.29	9.32	4.56	2.69
Concordia, Kans	2.58	4.61	3.47	2.70	.56	1.72	3.03	.36	1.36	1.35	2.94	.80	1.52
Dodge City, Kans	1.77	.53	3.79	1.15	.36	2.20	1.01	3.34	1.53	1.84	2.50	1.62	4.52
Iola, Kans	3.35	5.19	13.22	5.56	1.85	3.51	1.02	4.18	7.10	4.33	4.23	6.14	9.40
Washington, D. C	3.59	.66	1.39	2.57	1.34	2.79	1.77	2.87	3.29	6.27	3.15	7.86	3.05
Lynchburg, Va	3.63	.67	3.26	2.55	1.96	2.61	.47	4.51	1.71	1.42	2.84	4.69	.43
Norfolk, Va	4.06	2.97	1.76	3.53	5.26	3.12	.70	3.11	2.43	.53	3.23	6.59	2.66
Parkersburg, W. Va	2.72	.62	4.19	3.18	1.41	2.53	.98	3.69	4.47	3.73	2.92	5.28	.55
Charlotte, N. C	3.22	2.02	2.37	.88	3.29	5.83	.84	3.53	2.55	1.23	2.32	10.84	.19
Charleston, S. C	5.46	4.69	2.07	2.76	2.34	3.10	1.76	8.30	5.19	1.13	2.11	11.85	1.94
Atlanta, Ga	3.53	2.48	3.53	2.84	6.44	3.57	1.12	3.36	1.31	1.16	.54	6.01	.24
Thomasville, Ga	4.25	7.58	4.41	3.29	2.15	3.44	.34	6.07	1.60	3.42	2.32	18.83	.88
Jacksonville, Fla	8.03	6.39	8.41	5.25	3.47	6.17	5.63	7.14	1.73	6.70	4.89	8.88	2.41
Miami, Fla	8.72	6.68	5.47	4.81	18.55	10.06	3.72	6.94	2.81	11.04	6.21	7.41	2.73
Memphis, Tenn	3.05	3.92	.55	1.07	1.88	4.95	1.34	10.82	1.58	1.41	5.47	5.19	1.77
Nashville, Tenn	3.68	1.46	4.63	1.92	1.51	3.75	1.33	4.15	3.72	3.23	1.44	2.64	3.52
Birmingham, Ala	3.50	3.95	6.54	2.63	6.01	7.73	1.09	4.12	4.20	1.54	1.50	2.50	.66
Mobile, Ala	5.02	7.96	4.08	6.68	6.90	5.17	1.10	7.81	3.74	3.19	.47	1.89	1.34
New Orleans, La	4.81	5.05	10.83	3.13	2.69	4.82	2.93	6.47	3.94	.93	2.63	2.59	7.13
Shreveport, La	3.22	.15	1.75	1.46	2.56	.36	2.16	1.10	.56	1.36	9.03	1.06	2.40
Amarillo, Tex	2.36	1.07	4.69	1.76	2.05	.64	4.58	3.04	.76	1.41	6.42	1.13	4.88
Brownsville, Tex	5.42	.86	2.54	3.21	1.03	.97	7.69	.34	3.82	12.61	4.55	7.29	19.21
El Paso, Tex	1.45	.56	2.68	.55	.76	.01	3.30	.31	2.49	1.07	.41	.14	1.03
Fort Worth, Tex	2.46	1.61	1.62	.73	2.41	2.09	4.12	2.76	.11	.41	2.06	3.78	1.79
Galveston, Tex	5.41	5.20	2.12	4.24	3.60	2.03	5.29	2.86	8.37	8.89	9.91	.04	11.06
San Antonio, Tex	2.94	2.24	2.39	3.78	1.39	1.49	7.61	.15	8.27	.97	2.98	2.52	2.87
Oklahoma City, Okla	2.75	1.70	3.62	2.54	1.55	4.28	1.03	3.60	3.79	.90	10.28	2.65	7.73
Little Rock, Ark	3.26	1.93	1.16	1.95	.27	4.63	2.78	2.88	2.18	.93	3.93	5.44	3.38
Havre, Mont	1.03	1.37	2.05	1.42	4.58	.98	.79	.34	1.50	.68	.50	.64	3.94
Kalispell, Mont	1.33	1.21	2.04	1.63	.83	1.59	.50	.70	.79	.52	.23	.90	2.43
Cheyenne, Wyo	.94	.41	2.10	1.00	.56	2.57	1.76	2.31	.02	.36	2.78	2.36	.19
Sheridan, Wyo	1.34	.80	3.75	.56	.30	2.68	1.10	.16	.51	.08	8.18	1.03	1.09
Pueblo, Colo	.62	.32	1.42	T.	3.25	1.43	2.04	1.33	.25	.09	1.36	.10	.43
Santa Fe, N. Mex	1.64	.59	1.62	1.45	.64	.76	2.63	.77	.18	1.07	1.10	.62	2.27
Phoenix, Ariz	1.01	T.	.10	1.66	.55	.39	1.93	.10	.33	.13	.97	.12	.95
Modena, Utah	1.12	.49	1.44	.71	.79	1.22	3.29	.22	.23	.04	.46	.13	2.63
Salt Lake City, Utah	.85	.17	1.60	.50	1.16	2.10	1.76	1.56	.44	.01	1.41	.25	.94
Winnemucca, Nev	.34	.48	.94	.26	T.	1.53	.40	.40	01	0	1.16	.13	1.00
Boise, Idaho	.41	.35	.26	.05	1.39	2.32	.79	.64	.61	.01	.55	.24	1.19
Seattle, Wash	1.77	1.42	.65	.70	1.29	.08	2.03	2.34	1.84	1.19	1.37	2.08	.59
Walla Walla, Wash	.93	1.52	.70	.15	1.31	.32	1.26	1.99	.79	.41	.21	.89	.31
Portland, Oreg	1.84	3.10	.53	.71	1.96	.66	3.18	4.16	3.08	1.90	.59	1.93	1.50
Roseburg, Oreg	1.04	2.80	.57	.59	.73	.59	3.36	2.27	1.45	1.56	1.63	1.33	2.56
Eureka, Calif	1.11	1.82	.11	.38	.66	1.42	1.52	2.47	.27	.37	1.54	.41	3.56
Fresno, Calif	.27	.22	T.	.38	T.	.53	.29	T.	.21	0	.25	0	0
Los Angeles, Calif	.06	0	T.	.77	T.	.55	1.29	.04	.62	0	.55	T.	0
Sacramento, Calif	.39	T.	T.	.16	.51	3.58	.53	.01	T.	0	.50	T.	.02
San Diego, Calif	.06	T.	T.	.25	T.	.08	.26	.08	1.24	0	.03	0	0
San Francisco, Calif	.29	T.	0	1.20	.02	2.53	.39	.13	.35	T.	.44	T.	.45

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal[1] and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for Oct.	October total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	3.36	3.07	1.83	2.87	6.40	5.38	4.13	3.22	4.82	3.14	3.45	1.33	6.02
Boston, Mass	3.86	1.54	2.82	.94	5.33	.99	2.13	1.64	1.24	1.97	3.37	.06	4.03
Buffalo, N. Y	3.53	1.80	2.11	2.33	6.90	1.95	5.32	1.77	2.86	2.70	1.66	.08	2.77
Canton, N. Y	3.34	1.82	2.55	2.22	5.64	5.21	3.81	1.68	4.90	2.61	3.42	.65	3.73
Trenton, N. J	3.41	1.74	1.99	.96	5.30	.74	3.09	.92	.34	.81	2.35	.20	3.97
Pittsburgh, Pa	2.36	3.07	2.84	2.31	5.27	3.08	5.37	1.48	2.25	1.62	1.05	.12	4.09
Scranton, Pa	2.91	1.05	1.13	.91	6.07	3.25	3.94	2.02	2.78	3.56	2.42	.08	2.93
Cincinnati, Ohio	2.32	3.59	2.36	1.81	2.79	2.68	9.51	1.76	2.72	1.23	.92	.17	4.24
Cleveland, Ohio	2.73	2.39	1.77	2.19	5.09	2.11	3.17	2.57	2.91	1.58	1.72	.68	3.38
Evansville, Ind	3.10	2.75	1.33	2.05	3.65	2.49	8.40	1.65	2.03	2.12	3.78	.15	6.25
Indianapolis, Ind	2.79	1.67	1.72	1.47	3.96	2.75	8.98	1.96	1.70	1.78	3.29	.79	4.16
Chicago, Ill	2.55	2.89	.40	3.88	3.96	2.94	6.41	1.57	3.26	3.40	4.57	.84	3.72
Peoria, Ill	2.57	2.15	.55	2.93	2.23	2.97	2.12	1.93	2.97	2.02	3.85	1.27	2.49
Grand Rapids, Mich	2.54	2.72	.60	3.73	4.57	3.59	3.91	1.82	3.61	2.87	3.30	.23	3.52
Marquette, Mich	3.19	1.03	2.67	4.89	2.96	3.91	3.26	1.82	1.29	1.74	2.70	.34	2.44
Madison, Wis	2.42	3.09	.48	2.97	3.08	3.13	5.95	1.90	3.79	.65	2.12	.22	1.92
Duluth, Minn	2.74	1.14	3.08	1.13	2.83	2.18	2.71	4.10	.70	.56	.46	1.63	1.59
St. Paul, Minn	2.34	1.88	1.59	1.26	1.68	2.61	1.91	1.85	.48	1.08	2.00	.76	.83
Des Moines, Iowa	2.68	3.57	.43	2.11	.92	3.81	2.20	1.89	1.51	3.41	1.10	.77	3.22
Dubuque, Iowa	2.68	2.88	2.03	3.32	1.87	2.85	6.22	2.18	3.43	.72	1.07	.43	2.67
St. Louis, Mo	2.41	7.45	.90	1.64	1.87	3.63	8.52	2.36	1.45	1.74	5.74	.30	4.32
Springfield, Mo	2.80	2.84	2.56	1.24	.31	2.72	11.94	4.09	2.55	1.60	4.79	.85	2.82
Bismarck, N. Dak	1.03	.79	1.52	.18	.21	.28	.98	.26	1.58	.63	1.03	2.02	.55
Devils Lake, N. Dak	1.23	1.15	.45	.67	1.32	.55	.65	.23	1.31	.52	1.25	2.08	1.27
Pierre, S. Dak	.81	1.95	1.20	.67	.02	.41	2.19	1.25	1.28	.44	.30	1.38	.27
North Platte, Nebr	1.15	.92	1.07	.81	.32	1.43	1.36	1.29	.92	.14	1.77	.95	.76
Omaha, Nebr	2.35	3.70	.89	1.17	.55	4.65	2.79	2.87	1.52	1.45	.71	.51	2.11
Concordia, Kans	2.00	2.49	3.40	1.06	.30	4.49	1.65	1.61	.72	1.14	1.75	.48	1.21
Dodge City, Kans	1.40	.43	.81	.79	.07	1.67	1.01	3.58	.23	.45	3.82	1.68	1.29
Iola, Kans	2.27	4.65	1.00	1.67	.87	5.08	5.33	4.09	.88	1.30	7.42	2.44	2.22
Washington, D. C	3.09	1.65	3.72	1.76	4.81	.86	3.64	.40	1.35	1.41	1.36	.44	4.86
Lynchburg, Va	3.38	4.42	3.21	2.22	2.24	.95	2.65	.10	2.45	4.19	1.50	2.48	4.08
Norfolk, Va	3.91	2.39	2.29	2.62	2.89	.79	2.27	.94	1.28	2.75	1.73	.11	2.22
Parkersburg, W. Va	2.44	2.91	2.64	2.53	4.77	3.19	5.37	1.40	1.97	2.73	.82	.25	5.87
Charlotte, N. C	3.15	3.11	2.97	2.64	1.95	3.00	4.46	.10	1.76	5.32	1.13	.45	2.98
Charleston, S. C	3.93	4.14	4.27	4.37	.32	1.66	.28	.06	1.70	5.72	2.09	1.66	3.98
Atlanta, Ga	2.34	6.14	6.45	2.11	1.00	4.04	5.04	.54	2.85	3.48	1.50	.90	4.55
Thomasville, Ga	3.46	2.17	9.63	4.88	.35	1.65	.43	1.23	1.68	4.75	1.38	2.05	5.36
Jacksonville, Fla	5.06	2.34	5.45	4.77	.38	4.97	1.81	.11	6.37	8.84	4.75	8.08	3.13
Miami, Fla	8.96	6.92	11.65	5.03	2.11	4.82	3.73	5.04	18.20	15.85	2.37	25.02	1.12
Memphis, Tenn	2.74	1.81	3.02	2.28	1.72	2.57	10.13	2.68	1.40	.89	2.74	.09	8.72
Nashville, Tenn	2.48	2.80	.42	2.67	2.25	3.44	8.35	2.75	2.93	.75	1.23	.03	6.99
Birmingham, Ala	2.34	2.52	3.57	.83	1.83	10.84	2.31	.54	1.94	1.81	1.60	0	6.19
Mobile, Ala	3.18	.75	4.53	2.52	.70	10.57	8.53	4.05	1.42	4.61	5.64	.31	5.35
New Orleans, La	2.93	2.63	12.07	8.51	.71	11.07	4.21	3.59	1.85	3.25	2.25	T.	7.96
Shreveport, La	3.18	.32	1.95	2.17	2.13	4.25	11.75	2.89	.03	.45	2.43	T.	5.80
Amarillo, Tex	1.71	4.46	1.55	2.90	.34	2.47	.67	1.87	.28	.23	7.34	.86	3.35
Brownsville, Tex	3.22	2.58	.82	2.23	T.	3.37	4.52	3.56	1.90	.74	5.45	5.12	3.99
El Paso, Tex	.95	.80	.18	1.07	T.	1.03	.97	.57	.11	.35	.53	.24	.79
Fort Worth, Tex	2.69	.28	2.58	1.89	.17	3.31	9.44	6.52	.31	2.33	6.05	T.	3.77
Galveston, Tex	4.18	2.95	2.81	.99	1.49	2.78	8.30	7.92	3.83	4.78	3.11	.03	17.34
San Antonio, Tex	1.49	5.78	1.11	2.57	.48	4.05	8.66	2.85	1.02	3.55	1.39	.52	2.23
Oklahoma City, Okla	1.81	1.50	2.84	1.73	.02	5.31	8.12	7.38	.18	4.39	9.64	.38	3.12
Little Rock, Ark	2.55	1.47	2.19	2.92	2.03	4.14	15.29	3.23	.14	.77	1.00	.06	5.73
Havre, Mont	.50	2.82	.42	1.01	.38	1.05	.75	1.25	.16	.09	.71	.40	.64
Kalispell, Mont	1.17	3.40	.34	.62	.54	.91	1.05	1.25	1.15	1.05	.55	.32	.69
Cheyenne, Wyo	.72	1.29	1.11	1.95	.39	.68	1.67	.96	.06	.23	2.83	2.25	3.51
Sheridan, Wyo	1.02	.65	.43	2.85	1.77	.51	2.87	1.19	.24	1.35	1.72	2.07	3.20
Pueblo, Colo	.70	1.66	.41	.71	.51	.14	.30	.91	1.21	.19	2.75	.51	.66
Santa Fe, N. Mex	1.07	2.40	.04	2.76	.19	2.73	1.82	1.42	.98	.24	2.43	.30	2.09
Phoenix, Ariz	.35	2.30	T.	.65	T.	.52	.25	.46	.11	T.	.22	.30	.92
Modena, Utah	.82	.30	.07	2.18	0	.69	.63	2.40	1.97	.37	.10	.41	2.25
Salt Lake City, Utah	1.40	2.61	.01	2.45	.03	1.13	2.52	3.57	1.29	.66	2.18	1.87	.73
Winnemucca, Nev	.52	.63	.05	1.42	T.	.45	.68	.52	.05	.31	1.05	.46	1.46
Boise, Idaho	1.28	1.20	.21	.84	T.	1.98	1.41	2.34	.16	.52	2.73	1.50	2.14
Seattle, Wash	2.67	4.37	3.00	1.18	.16	3.46	1.59	4.19	3.91	2.37	2.05	5.03	.28
Walla Walla, Wash	1.47	1.99	.99	.38	.01	1.53	1.95	1.65	1.20	.89	3.11	1.35	.17
Portland, Oreg	3.28	3.47	1.98	1.26	.03	4.47	1.43	3.71	2.78	4.70	1.61	5.50	.02
Roseburg, Oreg	2.61	3.56	.94	.43	.02	1.18	2.28	3.78	2.13	3.50	3.40	10.46	.05
Eureka, Calif	2.65	3.79	.79	.47	0	1.00	.24	4.11	1.59	3.38	2.55	6.84	.95
Fresno, Calif	.72	.26	0	1.16	0	.11	.29	.84	T.	.52	.37	.64	1.79
Los Angeles, Calif	.77	.31	0	2.71	0	T.	.56	.76	.59	.24	.04	.63	.74
Sacramento, Calif	1.04	.82	T.	.79	T.	.40	.01	1.29	.80	.72	.58	2.10	T.
San Diego, Calif	.46	1.05	0	.87	.17	.42	1.04	.18	.67	.09	.37	.35	3.67
San Francisco, Calif	1.29	.29	.01	.52	0	.17	.27	1.83	.52	2.95	.46	2.93	.31

T=Trace, indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal[1] and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for Nov.	November total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	3.03	2.10	2.56	4.17	1.26	3.77	3.58	3.75	5.69	1.97	3.39	4.47	5.31
Boston, Mass	4.10	2.72	2.14	1.67	.59	1.20	5.36	5.46	6.19	.84	2.78	1.93	3.66
Buffalo, N. Y	3.35	1.81	1.86	1.53	1.17	1.43	1.38	4.30	3.77	1.08	2.74	3.90	3.26
Canton, N. Y	3.41	2.31	1.25	1.63	1.74	2.34	1.13	4.45	2.67	1.66	3.84	2.94	4.06
Trenton, N. J	3.43	1.62	.96	1.31	1.02	1.85	3.10	2.14	2.83	.62	2.09	1.58	2.63
Pittsburgh, Pa	2.55	1.35	2.37	1.86	.28	1.79	3.82	2.57	5.06	1.31	2.39	1.39	2.70
Scranton, Pa	2.29	1.12	1.37	2.01	.89	1.04	2.76	2.97	5.03	.76	2.20	1.63	2.87
Cincinnati, Ohio	3.21	1.20	2.34	1.85	.31	1.65	3.65	2.92	5.67	1.88	2.28	1.05	5.75
Cleveland, Ohio	2.75	1.34	1.84	2.35	1.37	1.77	1.31	2.25	3.93	1.37	2.64	.91	3.60
Evansville, Ind	4.11	.65	3.40	1.11	2.19	.98	3.73	1.38	9.24	1.64	3.54	1.04	4.83
Indianapolis, Ind	3.52	1.45	3.05	1.73	.12	1.73	3.27	2.12	8.91	2.32	2.04	1.75	5.13
Chicago, Ill	2.50	.33	2.03	2.11	.56	2.65	2.38	.92	3.51	2.66	1.46	.86	2.57
Peoria, Ill	2.64	.20	2.29	1.88	.07	3.18	2.91	1.22	3.43	3.67	1.37	.52	2.70
Grand Rapids, Mich	2.53	1.47	1.52	2.12	1.21	2.63	2.30	1.54	3.64	2.39	1.09	1.60	2.08
Marquette, Mich	2.79	2.43	3.79	2.48	1.66	5.29	4.18	2.96	1.97	2.84	1.22	2.62	.97
Madison, Wis	1.80	.70	3.12	1.69	.30	1.17	2.25	1.83	1.55	3.14	.68	2.59	1.16
Duluth, Minn	1.58	1.15	3.27	.09	.09	1.94	3.86	1.40	.70	3.57	.63	.47	.70
St. Paul, Minn	1.30	.48	2.64	.92	.06	3.45	2.59	1.08	1.58	3.70	.35	.75	.59
Des Moines, Iowa	1.48	.35	1.24	1.46	.21	2.10	3.84	1.63	.35	2.54	.55	.53	.32
Dubuque, Iowa	1.81	.21	1.65	1.17	.07	1.10	3.59	2.01	.91	4.41	1.19	.56	1.28
St. Louis, Mo	2.88	1.53	1.97	2.53	.78	2.73	2.08	.56	4.43	2.36	1.90	1.53	4.09
Springfield, Mo	2.64	.71	2.66	2.88	2.61	3.90	4.49	.64	2.46	4.14	3.47	1.71	2.05
Bismarck, N. Dak	.68	.42	.57	.13	.04	.51	.92	.39	.84	1.51	.29	.05	.13
Devils Lake, N. Dak	.71	.57	.60	.12	.32	1.80	1.01	.76	.43	2.38	.47	.38	.30
Pierre, S. Dak	.43	T.	.84	.08	T.	.45	1.27	.71	.49	3.16	.20	.44	.43
North Platte, Nebr	.40	T.	.22	.47	.71	.29	2.83	.04	.04	2.35	.45	.08	.37
Omaha, Nebr	1.06	.03	1.51	.73	.12	2.89	2.84	1.47	.09	2.55	.27	.36	.12
Concordia, Kans	.94	T.	.99	.77	.07	1.24	1.71	1.47	.08	2.05	.61	.38	.70
Dodge City, Kans	.55	T.	.08	.03	.58	.37	1.11	1.13	T.	.95	.53	.34	1.77
Iola, Kans	1.38	.43	.31	3.03	.05	2.89	2.12	1.35	.13	3.01	1.59	2.24	3.30
Washington, D. C	2.71	2.06	.93	2.11	.53	1.48	2.32	4.51	4.15	.55	2.04	1.47	3.53
Lynchburg, Va	2.79	2.31	1.66	1.52	.25	1.26	2.48	7.14	1.65	.19	1.98	1.45	2.68
Norfolk, Va	2.72	2.62	.87	1.34	.59	.77	.20	3.64	1.70	.44	1.95	2.00	1.97
Parkersburg, W. Va	2.83	.80	3.32	1.84	.60	1.85	4.76	1.82	5.56	.97	2.97	1.67	3.91
Charlotte, N. C	2.86	2.45	1.96	.36	.75	3.23	1.02	4.95	4.02	.92	3.09	1.37	3.37
Charleston, S. C	2.87	2.34	1.65	1.11	.31	2.34	.23	3.07	1.82	.10	1.79	.72	3.09
Atlanta, Ga	3.40	4.89	1.53	2.63	1.51	3.68	2.92	3.33	6.47	1.42	3.55	.64	4.46
Thomasville, Ga	2.64	1.89	1.67	1.87	.61	5.38	3.40	3.69	3.11	1.10	2.87	.32	5.84
Jacksonville, Fla	2.19	3.87	1.07	2.76	.23	3.26	1.06	5.38	2.27	.58	.06	.38	1.51
Miami, Fla	2.84	7.06	2.54	1.85	.24	.60	3.48	3.73	.50	5.44	.27	1.06	17.72
Memphis, Tenn	4.59	2.05	7.05	.86	1.14	2.75	7.75	1.32	4.59	3.50	3.08	2.94	3.80
Nashville, Tenn	3.85	2.13	6.75	1.00	.85	1.36	7.89	2.60	5.68	1.80	2.87	1.25	4.52
Birmingham, Ala	3.39	2.28	3.54	2.61	1.55	5.25	4.01	2.45	2.14	2.59	5.50	.01	4.41
Mobile, Ala	3.74	10.23	3.32	2.61	1.43	7.14	4.58	1.68	3.79	3.98	4.33	.06	3.38
New Orleans, La	3.79	4.65	2.29	.88	.34	4.46	7.29	3.03	3.83	3.38	4.94	.23	4.85
Shreveport, La	4.08	3.61	4.14	2.54	1.14	4.13	4.68	2.15	1.52	2.01	3.19	.33	9.49
Amarillo, Tex	1.16	T.	.18	.40	.59	1.16	1.26	1.33	T.	1.39	2.13	1.25	.95
Brownsville, Tex	2.06	5.13	.14	1.39	.29	2.16	2.34	2.42	1.22	3.67	3.34	.03	1.75
El Paso, Tex	.59	1.13	.01	.52	.04	1.04	.93	T.	.22	.29	.53	.01	.02
Fort Worth, Tex	2.57	6.44	.29	1.82	1.35	7.94	3.32	1.70	1.24	2.57	1.63	1.60	2.05
Galveston, Tex	4.02	9.19	1.47	2.16	.97	8.15	1.97	3.64	1.61	2.54	4.11	1.52	3.42
San Antonio, Tex	1.78	3.24	.29	2.14	.75	2.53	1.56	2.95	1.16	.98	4.21	.24	1.44
Oklahoma City, Okla	2.25	.70	1.01	2.35	.80	3.53	2.84	2.04	.33	2.37	2.13	3.04	2.42
Little Rock, Ark	4.59	2.36	5.63	2.12	2.07	3.11	8.21	.88	3.89	2.07	2.59	2.54	5.23
Havre, Mont	.77	.24	.12	.46	.02	.53	.90	.07	1.09	.54	.17	.67	T.
Kalispell, Mont	1.90	1.58	1.69	.80	.51	.23	1.35	.43	2.39	1.06	.89	1.61	.47
Cheyenne, Wyo	.41	.26	.19	.88	.40	.54	1.63	.22	.34	2.40	.28	.31	1.26
Sheridan, Wyo	.59	.08	1.03	.90	.12	.58	1.05	.49	1.38	1.16	.36	.76	.29
Pueblo, Colo	.37	T.	.15	.20	.02	.66	.64	.28	.72	1.26	.66	.19	1.30
Santa Fe, N. Mex	.78	T.	.61	.06	.26	.63	.75	.14	T.	1.13	.82	.33	.58
Phoenix, Ariz	.96	1.00	.54	0	0	1.92	2.38	T.	.04	1.04	2.84	T.	.12
Modena, Utah	.60	0	.54	.07	.16	.30	1.12	.10	.18	1.00	1.02	.44	.48
Salt Lake City, Utah	1.42	.37	1.61	.92	1.31	1.77	.81	1.90	1.04	3.33	1.05	1.54	1.40
Winnemucca, Nev	.74	.02	.38	.44	.25	.77	.72	1.33	.64	.52	.53	.32	.66
Boise, Idaho	.86	.11	1.07	1.07	1.17	.24	2.34	1.82	3.27	.52	.55	.85	1.19
Seattle, Wash	5.83	5.28	5.66	4.58	2.70	3.81	4.13	4.42	6.60	1.45	2.06	4.84	3.83
Walla Walla, Wash	2.13	1.00	3.04	2.74	1.05	1.02	3.16	2.10	3.91	.95	1.18	2.25	.83
Portland, Oreg	6.41	3.70	11.32	6.31	4.24	4.30	7.44	5.84	10.04	2.94	4.15	6.11	5.44
Roseburg, Oreg	4.37	2.69	8.54	4.62	6.27	4.73	3.90	6.27	6.46	2.59	1.95	6.88	3.26
Eureka, Calif	5.67	2.42	6.15	3.13	6.43	4.74	2.99	6.35	6.21	3.32	2.86	6.37	3.71
Fresno, Calif	1.03	.11	.30	.28	.35	1.81	.04	.99	.26	.02	.10	.73	.20
Los Angeles, Calif	1.48	.20	1.35	.09	.36	1.85	.45	1.15	.05	1.44	.04	1.14	.68
Sacramento, Calif	2.15	.47	.83	.49	.25	1.84	.36	3.39	1.09	3.03	.62	1.59	1.13
San Diego, Calif	.83	.86	.73	.05	.08	1.91	.43	.19	.30	.75	.16	.55	1.16
San Francisco, Calif	2.47	.70	.92	1.50	.81	5.60	.44	2.70	1.43	3.77	.49	1.50	2.32

T=trace; indicates an amount too small to measure.

[1] Normals are based on records of 20 or more years of observations.

TABLE 796.—*Precipitation: Normal*[1] *and total precipitation at selected points in the United States, 1914–1925*—Continued

Station	Normal for Dec.	December total precipitation											
		1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	2.79	1.50	4.84	4.87	3.62	3.49	1.81	6.93	2.02	2.79	3.32	1.84	2.57
Boston, Mass	3.41	3.46	3.94	3.00	2.56	3.21	1.63	3.89	2.35	3.01	4.99	1.48	5.20
Buffalo, N. Y	3.37	3.49	4.09	3.37	3.93	2.41	1.96	3.36	.86	3.23	3.00	3.49	2.31
Canton, N. Y	3.59	2.15	2.49	2.53	1.76	2.79	1.12	5.41	1.60	1.03	2.51	1.82	2.53
Trenton, N. J	3.16	4.64	4.44	4.87	1.55	3.86	2.94	4.25	1.85	3.46	3.94	2.60	1.65
Pittsburgh, Pa	2.73	4.37	3.85	2.01	1.19	3.50	2.88	1.94	2.36	1.98	6.22	1.95	1.40
Scranton, Pa	2.61	4.19	4.66	3.26	2.15	2.88	2.52	3.03	1.83	2.31	2.44	1.06	1.47
Cincinnati, Ohio	2.93	3.14	4.59	3.60	1.56	4.68	2.56	1.38	4.86	4.00	6.94	3.16	.67
Cleveland, Ohio	2.58	1.57	1.75	2.06	1.41	1.58	1.32	1.64	1.75	2.45	4.50	3.58	1.45
Evansville, Ind	3.83	3.62	6.97	4.66	2.12	5.83	1.86	3.86	5.18	5.94	6.43	3.80	1.06
Indianapolis, Ind	3.04	3.37	5.15	2.50	1.10	6.19	.85	3.27	3.27	4.45	5.60	5.53	1.09
Chicago, Ill	2.07	2.33	1.31	2.58	.88	3.24	.70	3.33	4.63	1.21	1.96	1.90	1.21
Peoria, Ill	2.37	1.81	1.66	1.75	.63	2.80	.30	1.87	2.91	1.38	2.21	2.40	1.12
Grand Rapids, Mich	2.54	1.89	1.22	3.81	.82	4.02	1.19	4.19	4.14	1.40	2.18	1.66	1.52
Marquette, Mich	2.52	.85	2.17	3.09	3.86	2.94	1.89	2.27	2.04	1.14	1.52	1.53	2.80
Madison, Wis	1.77	1.76	.64	1.24	.45	2.19	.93	1.33	2.73	1.23	2.12	1.16	1.79
Duluth, Minn	1.22	.30	.87	.38	1.07	2.03	.30	1.07	.69	.90	.82	.79	.66
St. Paul, Minn	1.06	.50	.53	1.21	.57	2.05	.66	.88	.27	.18	.66	1.36	.61
Des Moines, Iowa	1.31	1.28	.65	.65	.88	1.35	.93	1.38	.80	.25	.61	1.62	1.67
Dubuque, Iowa	1.72	1.83	.36	.95	.52	1.90	.63	.96	2.43	.41	.92	1.31	1.66
St. Louis, Mo	2.23	2.23	3.34	2.16	.78	2.69	1.22	2.41	2.89	4.98	3.30	4.63	1.46
Springfield, Mo	2.67	2.90	3.21	2.07	1.18	2.97	.44	1.84	1.92	2.07	2.92	4.21	.91
Bismarck, N. Dak	.62	.34	.39	1.52	.59	1.02	.23	.29	.20	.94	.22	.23	.35
Devils Lake, N. Dak	.39	.36	.64	.90	.66	.67	.42	.30	.75	.87	.23	.67	.49
Pierre, S. Dak	.50	.22	.25	.61	.72	1.45	.12	.21	.27	.31	.24	.95	.65
North Platte, Nebr	.47	.87	.82	.42	.27	1.31	.32	.60	.14	.01	.39	1.81	.64
Omaha, Nebr	.91	1.38	.34	.65	.48	.72	.69	.81	.14	.07	.58	1.38	1.42
Concordia, Kans	.48	1.57	.40	.88	.06	1.87	.24	.58	.01	T.	.17	1.33	.38
Dodge City, Kans	.56	.46	.23	.30	.25	4.03	.08	.81	.68	T.	.48	1.13	.05
Iola, Kans	.93	.82	1.12	.68	.29	3.22	.19	.89	.52	.18	1.14	1.70	.63
Washington, D. C	3.16	4.49	2.80	4.03	1.47	4.65	3.32	3.15	1.95	3.48	2.80	2.98	1.07
Lynchburg, Va	3.27	4.68	2.37	2.32	1.70	2.59	1.96	2.34	1.01	3.42	2.72	3.34	2.86
Norfolk, Va	3.49	4.69	2.26	3.11	2.62	2.94	1.71	4.91	3.69	2.93	.93	2.85	4.20
Parkersburg, W. Va	2.77	4.75	5.24	3.48	.90	4.23	4.07	1.68	4.30	4.13	5.36	2.49	.57
Charlotte, N. C	3.86	6.53	3.53	2.32	1.69	4.35	2.20	4.47	2.66	4.47	3.33	4.33	2.41
Charleston, S. C	3.15	2.35	2.81	1.47	1.08	3.17	.19	3.00	.51	4.61	3.91	2.93	4.00
Atlanta, Ga	4.54	5.31	9.07	3.57	.89	5.46	12.94	4.36	1.79	6.20	5.60	6.39	2.46
Thomasville, Ga	3.69	4.60	1.73	6.59	1.82	8.13	2.56	8.60	2.14	6.33	2.79	6.64	6.93
Jacksonville, Fla	2.99	5.20	3.46	7.47	2.11	2.60	4.61	3.35	1.60	2.54	1.38	1.15	6.98
Miami, Fla	2.00	4.43	2.00	.25	1.46	4.11	1.83	1.72	.23	1.19	.46	.32	2.68
Memphis, Tenn	4.38	6.35	5.73	3.26	1.33	4.58	2.61	7.11	2.53	5.19	5.35	5.32	.98
Nashville, Tenn	3.82	5.06	6.44	4.29	1.46	4.56	3.28	2.99	1.76	6.29	4.32	5.36	1.10
Birmingham, Ala	4.60	4.65	6.11	3.70	1.48	4.14	9.56	9.57	3.23	7.63	5.30	6.89	4.14
Mobile, Ala	4.57	4.13	4.16	6.68	1.85	4.92	5.42	6.18	5.54	9.10	6.13	5.35	6.09
New Orleans, La	4.46	3.99	5.07	7.17	2.16	8.46	.83	8.70	3.49	7.01	4.37	6.72	3.58
Shreveport, La	4.37	7.16	3.05	1.65	1.02	3.09	2.08	6.37	1.92	2.59	7.82	2.26	2.87
Amarillo, Tex	.83	1.17	0.13	0.88	.04	2.78	.50	.64	.06	.10	1.11	.63	.37
Brownsville, Tex	1.52	2.19	4.30	.69	.32	3.55	1.08	.05	.17	.38	2.86	3.53	3.72
El Paso, Tex	.52	3.94	.43	.32	0	.78	.12	T.	.15	.09	.93	.05	.27
Fort Worth, Tex	1.84	4.40	1.99	.11	.05	4.08	.44	1.31	.34	.06	4.68	1.23	.04
Galveston, Tex	3.73	4.43	5.69	.79	1.00	3.46	2.02	6.49	2.76	2.56	7.84	5.33	2.63
San Antonio, Tex	1.56	1.43	1.57	.33	T.	3.61	2.05	.16	.23	.10	4.29	2.31	1.29
Oklahoma City, Okla	1.74	2.74	.33	1.05	.04	3.04	.12	1.37	.18	.53	2.06	2.41	.31
Little Rock, Ark	4.24	6.88	5.37	2.17	1.24	7.95	2.34	6.99	2.58	3.38	4.70	1.88	.96
Havre, Mont	.63	.66	.77	1.05	2.64	.09	.20	1.01	.25	.53	.69	1.19	.54
Kalispell, Mont	1.85	.40	2.00	1.70	4.78	.87	.91	1.23	1.16	1.50	1.55	2.49	.98
Cheyenne, Wyo	.31	.16	.41	.34	.81	.58	1.10	.57	1.31	.44	.28	.78	1.74
Sheridan, Wyo	.60	.14	.84	1.07	1.02	.21	.35	.51	.54	1.02	.82	1.12	1.70
Pueblo, Colo	.46	.59	.35	.23	.03	.92	.59	.38	1.12	T.	.35	.97	.41
Santa Fe, N. Mex	.76	1.70	.97	.17	.02	1.24	.33	.84	.88	.20	.98	1.52	.68
Phoenix, Ariz	.59	3.09	2.54	.39	0	1.16	.13	T.	.87	.28	2.23	1.16	.40
Modena, Utah	.58	.46	.80	.67	.20	2.01	.40	.25	2.14	.61	.41	1.14	.26
Salt Lake City, Utah	1.33	.39	1.71	2.64	.38	.52	1.38	1.38	2.29	2.92	.92	3.35	.83
Winnemucca, Nev	.99	.57	1.22	.26	.05	.50	.94	1.17	1.34	1.91	1.02	1.85	.96
Boise, Idaho	1.72	.47	1.56	1.29	2.33	.39	1.20	2.43	.88	1.73	.79	3.02	1.03
Seattle, Wash	5.29	1.39	7.77	4.13	9.21	5.04	4.10	5.68	7.25	7.37	3.31	4.63	4.30
Walla Walla, Wash	2.10	.53	1.97	2.68	4.11	1.48	1.92	2.50	1.57	1.83	2.18	1.88	1.84
Portland, Oreg	6.90	2.56	8.73	3.81	14.23	3.13	4.78	8.32	3.09	9.43	6.25	4.44	5.14
Roseburg, Oreg	5.92	1.53	5.50	3.88	3.71	3.26	4.51	7.17	1.52	5.86	4.31	5.25	3.66
Eureka, Calif	7.25	7.09	5.19	5.47	1.17	4.29	4.33	10.89	4.48	7.62	4.93	4.07	4.81
Fresno, Calif	1.53	1.76	2.78	1.93	.14	1.46	.89	1.07	3.47	2.20	.24	1.61	1.31
Los Angeles, Calif	2.90	3.73	2.52	3.67	.07	1.54	1.99	1.01	7.90	3.09	.80	1.10	2.45
Sacramento, Calif	3.53	3.44	4.42	3.73	.45	1.70	2.22	4.32	3.81	6.12	.94	3.63	1.50
San Diego, Calif	1.82	2.21	2.60	1.14	T.	1.68	.48	.54	9.26	1.21	1.65	1.34	1.50
San Francisco, Calif	4.24	5.49	6.42	4.79	.72	2.62	3.21	7.48	6.39	7.77	1.91	7.37	1.01

T=Trace, indicates an amount too small to measure.
Weather Bureau.

[1] Normals are based on records of 20 or more years of observations.

TABLE 797.—*Monthly and annual normal* [1] *precipitation in inches at selected points in the United States*

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
	In.	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*	*In.*
Greenville, Me	2.85	2.75	3.76	2.78	3.47	3.69	4.24	3.80	4.17	3.36	3.03	2.79	40.69
Boston, Mass	3.82	3.44	4.08	3.55	3.51	3.03	3.36	4.03	3.19	3.86	4.10	3.41	43.38
Buffalo, N. Y	3.30	2.85	2.62	2.45	3.10	3.14	3.40	2.99	3.18	3.53	3.35	3.37	37.28
Canton, N. Y	3.16	2.57	2.84	2.26	2.85	3.43	3.23	2.69	2.81	3.34	3.41	3.59	36.18
Trenton, N. J	3.17	3.19	4.04	3.29	3.52	3.49	4.77	5.37	3.59	3.41	3.43	3.16	44.43
Pittsburgh, Pa	2.87	2.66	3.01	2.90	3.30	3.89	4.42	3.18	2.48	2.36	2.55	2.73	36.35
Scranton, Pa	2.80	2.72	3.12	2.65	3.44	3.57	3.83	4.25	2.86	2.91	2.29	2.61	37.05
Cincinnati, Ohio	3.36	3.24	3.64	2.95	3.52	3.98	3.54	3.33	2.31	2.32	3.21	2.93	38.33
Cleveland, Ohio	2.45	2.61	2.79	2.31	3.22	3.68	3.55	3.15	3.22	2.73	2.75	2.58	35.04
Evansville, Ind	3.69	3.06	4.60	3.46	3.43	4.17	3.81	3.24	2.66	3.10	4.11	3.83	43.16
Indianapolis, Ind	2.81	3.08	4.01	3.47	3.94	4.31	4.13	3.33	3.05	2.79	3.52	3.04	41.48
Chicago, Ill	2.00	2.16	2.55	2.88	3.37	3.66	3.64	2.88	3.02	2.55	2.50	2.07	33.28
Peoria, Ill	2.20	2.69	2.96	3.28	4.26	4.30	2.97	2.93	3.12	2.57	2.64	2.37	36.29
Grand Rapids, Mich	2.78	1.91	2.52	2.45	3.34	2.52	2.63	2.59	3.12	2.54	2.53	2.54	31.47
Marquette, Mich	2.64	1.72	2.08	1.99	3.32	3.51	3.10	2.86	3.51	3.19	2.79	2.52	32.63
Madison, Wis	1.56	1.47	2.21	2.38	3.62	4.10	3.99	3.21	3.18	2.42	1.80	1.77	31.71
Duluth, Minn	.98	.99	1.55	2.14	3.47	4.53	3.65	3.53	3.55	2.74	1.58	1.22	29.93
St. Paul, Minn	.90	.84	1.60	2.33	3.62	4.41	3.40	3.46	3.42	2.34	1.30	1.06	28.68
Des Moines, Iowa	1.21	1.08	1.65	2.98	4.56	4.96	3.86	3.61	3.07	2.68	1.48	1.31	32.45
Dubuque, Iowa	1.49	1.38	2.21	2.92	4.32	4.55	4.30	3.04	3.59	2.68	1.81	1.72	34.01
St. Louis, Mo	2.27	2.75	3.43	3.52	4.24	4.47	3.43	2.66	2.91	2.41	2.88	2.23	37.20
Springfield, Mo	2.66	2.27	4.07	3.86	5.55	5.19	4.79	4.31	3.76	2.80	2.64	2.67	44.57
Bismarck, N. Dak	.54	.50	1.04	1.88	2.50	3.54	2.14	1.98	1.19	1.03	.68	.62	17.64
Devils Lake, N. Dak	.60	.53	1.01	2.03	2.20	3.53	3.78	2.76	1.39	1.23	.71	.39	20.16
Pierre, S. Dak	.46	.44	1.33	1.98	2.13	3.08	2.35	2.01	1.11	.81	.43	.50	16.63
North Platte, Nebr	.47	.40	.87	2.15	3.06	3.25	2.68	2.46	1.50	1.15	.40	.47	18.86
Omaha, Nebr	.65	.76	1.39	3.01	4.50	5.05	4.33	3.62	3.03	2.35	1.06	.91	30.66
Concordia, Kans	.72	.75	1.48	2.42	4.70	4.97	3.62	2.81	2.58	2.00	.94	.48	27.47
Dodge City, Kans	.47	.71	.88	1.87	3.34	3.32	3.38	2.59	1.77	1.40	.55	.56	20.84
Iola, Kans	.98	1.11	2.35	2.79	5.05	4.73	3.92	3.47	3.35	2.27	1.38	.93	32.33
Washington, D. C	3.37	3.42	3.85	3.25	3.83	4.18	4.65	4.40	3.59	3.09	2.71	3.16	43.50
Lynchburg, Va	3.72	3.49	3.81	3.17	3.99	3.89	4.03	4.25	3.63	3.38	2.79	3.27	43.42
Norfolk, Va	3.37	3.75	4.28	3.79	4.07	4.33	5.80	5.97	4.06	3.91	2.72	3.49	49.54
Parkersburg, W. Va	3.19	3.24	3.82	2.91	3.46	4.65	4.66	3.53	2.72	2.44	2.83	2.77	40.22
Charlotte, N. C	4.29	4.39	4.57	3.44	3.92	4.46	5.49	5.55	3.22	3.15	2.86	3.86	49.20
Charleston, S. C	3.45	3.41	3.72	2.99	3.47	5.39	7.26	6.97	5.46	3.93	2.87	3.15	52.07
Atlanta, Ga	5.31	4.65	5.78	3.63	3.09	3.88	4.73	4.48	3.53	2.34	3.40	4.54	49.36
Thomasville, Ga	4.13	4.48	5.09	3.65	4.01	4.72	5.32	5.03	4.25	3.46	2.64	3.69	50.47
Jacksonville, Fla	3.12	3.43	3.52	2.72	4.25	5.53	6.20	6.21	8.03	5.06	2.19	2.99	53.25
Miami, Fla	2.73	2.13	2.61	3.33	6.48	7.13	6.17	6.42	8.72	8.96	2.84	2.00	59.52
Memphis, Tenn	5.21	4.35	5.77	4.83	4.34	4.37	3.51	3.20	3.05	2.74	4.59	4.38	50.34
Nashville, Tenn	4.85	4.32	5.44	4.36	3.50	4.37	4.35	3.47	3.68	2.48	3.85	3.82	48.49
Birmingham, Ala	5.32	4.75	5.76	3.67	3.09	3.88	4.70	4.48	3.50	2.34	3.39	4.60	49.48
Mobile, Ala	4.85	5.36	7.17	4.35	4.00	5.95	7.04	6.81	5.02	3.18	3.74	4.57	62.04
New Orleans, La	4.63	4.47	5.30	4.91	3.88	6.16	6.47	5.61	4.81	2.93	3.79	4.46	57.42
Shreveport, La	4.42	3.61	4.52	4.58	4.16	3.58	3.72	2.24	3.22	3.18	4.08	4.37	45.68
Amarillo, Tex	.60	.88	.65	1.72	3.67	2.99	3.17	2.81	2.36	1.71	1.16	.83	22.55
Brownsville, Tex	1.35	1.27	1.23	1.33	2.22	2.37	1.88	2.59	5.42	3.22	2.06	1.52	26.46
El Paso, Tex	.51	.46	.38	.23	.35	.55	2.13	1.72	1.45	.95	.59	.52	9.84
Fort Worth, Tex	1.51	1.52	2.18	4.12	4.36	3.08	2.57	2.72	2.46	2.69	2.57	1.84	31.62
Galveston, Tex	3.62	3.10	2.90	3.13	3.23	4.75	3.98	5.01	5.41	4.18	4.02	3.73	47.06
San Antonio, Tex	1.68	1.78	1.68	2.94	2.96	3.11	2.22	2.69	2.94	1.49	1.78	1.56	26.83
Oklahoma City, Okla	1.34	.98	2.38	2.80	5.75	3.07	3.65	3.17	2.75	1.81	2.25	1.74	31.69
Little Rock, Ark	4.79	4.18	4.94	4.51	5.10	4.09	3.99	3.65	3.26	2.55	4.59	4.24	49.89
Havre, Mont	.69	.47	.48	1.01	2.09	2.82	1.92	1.26	1.03	.50	.77	.63	13.67
Kalispell, Mont	1.59	1.46	1.08	1.06	2.03	1.74	.84	.89	1.33	1.17	1.90	1.85	16.94
Cheyenne, Wyo	.40	.56	.95	1.85	2.43	1.57	1.99	1.47	.94	.72	.41	.31	13.60
Sheridan, Wyo	.90	.74	1.22	1.67	2.68	1.90	1.04	.73	1.34	1.02	.59	.60	14.43
Pueblo, Colo	.35	.47	.86	1.43	1.68	1.47	1.97	1.57	.62	.70	.37	.46	11.95
Santa Fe, N. Mex	.59	.84	.73	.86	1.11	1.04	2.71	2.36	1.64	1.07	.78	.76	14.49
Phoenix, Ariz	1.17	.69	.49	.43	.03	.12	1.07	.96	1.01	.35	.96	.59	7.87
Modena, Utah	.73	1.20	1.30	.79	.87	.40	1.26	1.83	1.12	.82	.60	.58	11.50
Salt Lake City, Utah	1.35	1.38	2.00	2.26	1.95	.77	.54	.78	.85	1.40	1.42	1.33	16.03
Winnemucca, Nev	1.04	.93	.95	.88	1.03	.64	.17	.17	.34	.52	.74	.99	8.40
Boise, Idaho	1.89	1.42	1.44	1.18	1.29	.88	.18	.16	.41	1.28	.86	1.72	12.71
Seattle, Wash	4.84	3.77	2.88	2.38	1.97	1.49	.67	.51	1.77	2.67	5.83	5.29	34.07
Walla Walla, Wash	2.01	1.58	1.89	1.70	1.83	1.19	.39	.45	.93	1.47	2.13	2.10	17.67
Portland, Oreg	6.59	5.42	4.66	3.02	2.23	1.64	.62	.63	1.84	3.28	6.41	6.90	43.24
Roseburg, Oreg	5.70	4.56	3.98	2.48	2.05	1.07	.32	.33	1.04	2.61	4.37	5.92	34.43
Eureka, Calif	7.63	7.03	6.97	3.93	2.54	1.06	.11	.10	1.11	2.65	5.67	7.25	46.05
Fresno, Calif	1.60	1.33	1.76	.71	.63	.10	.00	.00	.27	.72	1.03	1.53	9.68
Los Angeles, Calif	2.84	2.91	3.00	1.13	.48	.07	.00	.00	.06	.77	1.48	2.90	15.64
Sacramento, Calif	3.69	3.14	3.01	2.00	.98	.15	.00	.01	.39	1.04	2.15	3.53	20.09
San Diego, Calif	2.00	1.96	1.70	.74	.41	.03	.00	.00	.06	.46	.83	1.82	10.01
San Francisco, Calif	4.33	3.70	3.14	1.82	.81	.17	.01	.00	.29	1.29	2.47	4.24	22.27

Weather Bureau.

[1] Normals are based on records of 20 or more years of observations.

TABLE 798.—*Frost, killing: Dates of, with length of growing season*

Station	Spring frosts		Autumn frosts		Length of growing season between average dates of killing frost
	Latest date of killing frost	Average date of last killing frost	Earliest date of killing frost	Average date of earliest killing frost	
					Days
Greenville, Me	June 23	May 30	Aug. 26	Sept. 14	107
Boston, Mass	May 16	Apr. 14	Sept. 26	Oct. 24	193
Buffalo, N. Y	May 23	Apr. 26	Sept. 23	Oct. 19	176
Canton, N. Y	June 2	May 8	Sept. 11	Sept. 28	143
Trenton, N. J	May 17	Apr. 20	Sept. 22	Oct. 19	182
Pittsburgh, Pa	May 29	Apr. 21	Sept. 25	Oct. 22	184
Scranton, Pa	May 10	Apr. 20	Sept. 14	Oct. 13	176
Cincinnati, Ohio	Apr. 26	Apr. 14	Sept. 30	Oct. 25	194
Cleveland, Ohio	May 21	Apr. 15	Oct. 2	Nov. 2	201
Evansville, Ind	Apr. 26	Apr. 6	Sept. 30	Oct. 27	204
Indianapolis, Ind	May 25	Apr. 16	Sept. 21	Oct. 19	186
Chicago, Ill	May 23	Apr. 18	Sept. 20	Oct. 18	183
Peoria, Ill	May 11	Apr. 15	Sept. 30	Oct. 19	186
Grand Rapids, Mich	May 28	Apr. 28	Sept. 23	Oct. 17	172
Marquette, Mich	June 6	May 13	Aug. 23	Oct. 9	149
Madison, Wis	May 25	Apr. 25	Sept. 16	Oct. 17	175
Duluth, Minn	June 14	May 7	Sept. 10	Oct. 4	150
St. Paul, Minn	May 23	Apr. 25	Sept. 20	Oct. 8	166
Des Moines, Iowa	May 31	Apr. 21	Sept. 13	Oct. 10	172
Dubuque, Iowa	May 21	Apr. 20	Sept. 27	Oct. 15	178
St. Louis, Mo	May 22	Apr. 4	Sept. 30	Oct. 28	206
Springfield, Mo	May 19	Apr. 14	---do---	Oct. 21	190
Bismarck, N. Dak	June 7	May 11	Aug. 23	Sept. 20	132
Devils Lake, N. Dak	---do---	May 16	Aug. 8	Sept. 19	126
Pierre, S. Dak	May 19	Apr. 30	Sept. 12	Oct. 5	158
North Platte, Nebr	May 24	May 1	Sept. 10	Sept. 30	152
Omaha, Nebr	May 19	Apr. 15	Sept. 18	Oct. 13	181
Concordia, Kans	---do---	Apr. 17	Sept. 20	Oct. 17	183
Dodge City, Kans	May 27	Apr. 21	Sept. 23	Oct. 21	183
Iola, Kans	May 4	Apr. 7	Sept. 26	Oct. 23	199
Washington, D. C	May 12	Apr. 8	Oct. 2	Oct. 20	195
Lynchburg, Va	May 7	Apr. 28	---do---	Oct. 27	182
Norfolk, Va	Apr. 26	Mar. 25	Oct. 11	Nov. 17	237
Parkersburg, W. Va	May 22	Apr. 16	Oct. 1	Oct. 16	182
Charlotte, N. C	Apr. 26	Mar. 28	Oct. 8	Nov. 5	222
Charleston, S. C	Apr. 2	Feb. 20	Nov. 8	Dec. 10	263
Atlanta, Ga	Apr. 17	Mar. 31	Oct. 11	Nov. 7	221
Thomasville, Ga	Apr. 26	Mar. 14	Oct. 21	Nov. 15	246
Jacksonville, Fla	Apr. 10	Feb. 16	Nov. 12	Dec. 6	293
Miami, Fla	Feb. 19	(1)	Dec. 26	(1)	(1)
Memphis, Tenn	Apr. 25	Mar. 22	Oct. 3	Nov. 3	226
Nashville, Tenn	Apr. 24	Apr. 2	Oct. 8	Oct. 27	208
Birmingham, Ala	Apr. 17	Mar. 16	Oct. 21	Nov. 9	236
Mobile, Ala	Apr. 6	Feb. 17	Oct. 31	Dec. 5	291
New Orleans, La	Mar. 27	Jan. 25	Nov. 11	Dec. 16	325
Shreveport, La	Apr. 9	Mar. 6	Oct. 20	Nov. 10	249
Amarillo, Tex	May 23	Apr. 17	Sept. 22	Oct. 29	195
Brownsville, Tex	Mar. 8	Jan. 28	Nov. 15	Dec. 22	328
El Paso, Tex	Apr. 26	Mar. 14	Oct. 27	Nov. 15	246
Fort Worth, Tex	Apr. 9	Mar. 11	Oct. 22	Nov. 12	246
Galveston, Tex	Mar. 1	Jan. 19	Nov. 16	Dec. 26	341
San Antonio, Tex	Apr. 5	Feb. 24	Oct. 30	Nov. 28	277
Oklahoma City, Okla	Apr. 30	Mar. 31	Oct. 7	Nov. 2	216
Little Rock, Ark	Apr. 26	Mar. 18	Oct. 22	Nov. 14	240
Havre, Mont	June 6	May 16	Aug. 25	Sept. 19	126
Kalispell, Mont	June 7	May 5	Sept. 10	Oct. 2	150
Cheyenne, Wyo	June 13	May 20	Aug. 25	Sept. 19	122
Sheridan, Wyo	June 6	---do---	---do---	Sept. 20	123
Pueblo, Colo	June 2	Apr. 27	Sept. 12	Oct. 8	164
Santa Fe, N. Mex	May 18	Apr. 25	Sept. 25	Oct. 18	177
Phoenix, Ariz	Mar. 21	Feb. 16	Nov. 5	Dec. 3	290
Modena, Utah	July 3	May 23	Sept. 5	Sept. 26	126
Salt Lake City, Utah	June 18	Apr. 20	Sept. 22	Oct. 20	183
Winnemucca, Nev	June 22	May 16	Aug. 22	Sept. 26	133
Boise, Idaho	June 16	Apr. 27	Sept. 11	Oct. 12	167
Seattle, Wash	May 10	Mar. 17	Oct. 18	Nov. 21	249
WallaWalla, Wash	Apr. 28	Mar. 30	Sept. 28	Nov. 5	220
Portland, Oreg	May 2	Mar. 18	Oct. 13	Nov. 19	238
Roseburg, Oreg	May 24	Apr. 14	Sept. 24	Nov. 12	212
Eureka, Calif	Apr. 7	Feb. 8	Nov. 11	Nov. 26	291
Fresno, Calif	Apr. 14	Feb. 22	Oct. 31	Dec. 2	283
Los Angeles, Calif	Feb. 17	(1)	Nov. 2	(1)	(1)
Sacramento, Calif	May 7	Feb. 19	Nov 11	Nov 29	283
San Diego, Calif	Jan. 20	(1)	Dec. 26	(1)	(1)
San Francisco, Calif	Mar. 27	Jan. 25	Dec. 4	Dec. 10	319

Weather Bureau; periods ranging from 30 to 51 years.

[1] Frosts do not occur every year.

TABLE 799.—*Normal hourly wind velocity in miles at selected points in the United States* [1]

Station	Elevation of anemometer above ground	January	February	March	April	May	June	July	August	September	October	November	December	Annual
	Feet													
Portland, Me	117	9	9	10	9	9	8	8	7	8	8	9	9	8
Boston, Mass	188	12	12	12	11	10	9	9	8	9	10	11	11	10
Buffalo, N. Y	280	16	16	14	13	11	10	10	10	11	13	16	16	13
Canton, N. Y	61	12	12	13	12	11	9	9	8	9	10	12	11	11
Trenton, N. J	183	13	13	14	13	11	10	10	9	10	10	12	12	11
Pittsburgh, Pa	410	12	13	13	12	10	9	9	8	9	10	12	12	11
Scranton, Pa	119	9	8	8	8	7	6	6	6	6	7	8	8	7
Cincinnati, Ohio	51	8	9	9	8	7	6	6	5	6	6	7	8	7
Cleveland, Ohio	201	14	14	13	12	11	10	9	9	11	12	14	14	12
Evansville, Ind	175	10	10	10	10	8	7	7	6	7	7	9	9	8
Indianapolis, Ind	230	12	12	12	12	10	9	8	8	9	10	11	12	10
Chicago, Ill	310	16	16	17	17	15	13	12	12	14	15	16	16	15
Peoria, Ill	45	9	9	10	10	8	6	5	5	6	7	8	8	8
Grand Rapids, Mich	87	9	9	9	9	8	7	4	4	5	5	6	6	7
Marquette, Mich	111	11	11	11	10	10	8	9	9	11	11	12	11	10
Madison, Wis	78	10	11	11	11	10	8	8	8	9	10	11	11	10
Duluth, Minn	47	14	14	14	14	13	12	11	11	12	14	14	14	13
St. Paul, Minn	261	12	12	13	13	12	10	10	9	10	12	12	12	11
Des Moines, Iowa	97	8	8	9	10	8	7	6	6	7	7	8	8	8
Dubuque, Iowa	96	6	7	7	8	6	6	5	5	5	6	6	6	6
St. Louis, Mo	393	12	12	13	12	11	10	9	8	9	10	12	12	11
Springfield, Mo	104	11	12	12	12	10	9	8	8	9	10	11	11	10
Bismarck, N. Dak	57	9	9	10	12	11	10	9	9	10	10	9	9	10
Devils Lake, N. Dak	44	11	12	13	13	12	11	9	9	10	11	11	11	11
Pierre, S. Dak	75	8	9	11	12	11	10	9	9	9	8	8	8	9
North Platte, Nebr	51	8	9	10	12	11	10	9	8	9	9	8	8	9
Omaha, Nebr	122	9	10	10	10	9	8	6	7	8	8	11	9	9
Concordia, Kans	58	8	8	9	10	9	8	7	6	7	8	7	7	8
Dodge City, Kans	51	10	11	13	14	13	12	11	10	11	11	10	10	11
Iola, Kans	50	8	9	10	9	8	6	6	6	6	7	8	8	8
Washington, D. C	85	7	8	8	8	7	6	5	5	5	6	7	7	7
Lynchburg, Va	188	5	6	6	6	5	4	4	4	4	4	5	5	5
Norfolk, Va	205	10	11	11	11	9	9	8	8	8	9	10	10	10
Parkersburg, W. Va	84	7	7	7	7	5	4	4	4	4	5	6	6	6
Charlotte, N. C	62	7	7	8	7	6	5	5	5	5	6	6	6	6
Charleston, S. C	92	11	11	11	12	11	10	10	11	11	11	10	10	11
Atlanta, Ga	216	12	12	12	11	9	8	8	8	9	10	11	12	10
Thomasville, Ga	58	6	6	6	5	5	4	4	4	4	5	5	5	5
Jacksonville, Fla	245	8	9	9	9	8	8	8	7	8	9	8	8	8
Miami, Fla	79	9	9	10	10	9	8	7	8	8	9	11	8	9
Memphis, Tenn	97	10	10	10	10	8	7	7	6	7	7	8	9	8
Nashville, Tenn	191	10	11	12	11	9	8	7	7	7	8	9	10	9
Birmingham, Ala	48	8	9	9	8	6	6	5	5	6	6	7	7	7
Mobile, Ala	161	8	8	9	9	8	7	6	6	7	7	7	7	7
New Orleans, La	84	9	9	9	9	7	6	6	6	7	8	8	8	8
Shreveport, La	93	8	8	9	8	7	6	5	5	6	6	7	7	7
Amarillo, Tex	49	13	14	15	16	14	14	12	11	13	13	12	12	13
Brownsville, Tex	44	8	9	9	10	8	7	7	6	6	6	7	8	8
El Paso, Tex	133	10	12	13	13	13	11	10	9	9	10	10	10	11
Fort Worth, Tex	114	11	12	13	12	11	11	10	9	9	10	10	10	11
Galveston, Tex	114	12	12	12	12	11	10	9	8	10	10	11	11	11
San Antonio, Tex	132	8	8	9	9	8	8	7	6	7	6	7	7	8
Oklahoma City, Okla	47	13	14	15	15	13	12	10	10	11	12	12	12	12
Little Rock, Ark	144	10	10	11	10	9	7	7	7	7	8	9	9	9
Havre, Mont	44	10	9	10	10	10	9	8	7	8	8	10	10	9
Kalispell, Mont	56	4	4	5	6	6	5	5	5	5	4	4	4	5
Cheyenne, Wyo	101	14	13	13	12	11	10	9	8	9	10	12	12	11
Sheridan, Wyo	47	5	5	7	8	8	6	5	5	5	6	5	5	6
Pueblo, Colo	86	7	7	8	8	8	7	7	6	6	6	6	6	7
Santa Fe, N. Mex	53	7	8	8	9	8	7	7	6	6	7	7	7	7
Pheonix, Ariz	82	4	5	5	5	5	5	5	5	4	4	4	4	5
Modena, Utah	43	9	10	11	12	12	12	11	11	10	9	9	9	10
Salt Lake City, Utah	203	6	7	8	8	8	8	8	7	8	7	6	6	7
Winnemucca, Nev	56	8	9	9	9	8	8	8	7	7	7	8	8	8
Boise, Idaho	86	5	5	6	6	6	5	5	4	4	4	5	4	5
Seattle, Wash	250	9	8	9	8	8	7	6	6	7	7	8	8	7
Walla Walla, Wash	65	6	6	7	7	6	6	6	5	5	5	6	6	6
Portland, Oreg	106	6	7	6	6	6	6	6	6	5	5	6	6	6
Roseburg, Oreg	57	3	3	4	4	4	4	4	3	3	2	3	3	3
Eureka, Calif	89	7	7	8	8	8	8	7	5	5	5	6	6	7
Fresno, Calif	98	4	5	6	7	8	8	7	7	6	5	4	4	6
Los Angeles, Calif	191	5	5	5	5	5	5	5	5	4	4	5	5	5
Sacramento, Calif	117	8	8	9	9	9	9	9	9	8	7	7	7	8
San Diego, Calif	70	5	6	6	6	6	6	6	6	6	5	5	5	6
San Francisco, Calif	243	7	8	9	10	11	13	13	12	10	8	7	7	10

Weather Bureau.

[1] Normals are based on records of 15 or more years of observations.

TABLE 800.—*Normal*[1] *monthly and annual percentages of possible sunshine at selected points in the United States*

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Portland, Me.	54	60	59	56	58	61	64	63	62	56	47	50	58
Boston, Mass.	49	58	57	55	59	63	64	63	62	56	48	48	57
Buffalo, N. Y.	28	40	49	52	57	64	66	63	60	47	30	23	48
Canton, N. Y.	37	47	52	48	55	61	63	60	54	41	28	29	48
Trenton, N. J.	49	54	61	56	59	60	60	63	65	60	55	48	58
Pittsburgh, Pa.	31	36	45	47	56	61	63	61	63	56	40	29	49
Harrisburg, Pa.	45	52	55	56	60	62	64	61	63	57	49	44	56
Cincinnati, Ohio	41	46	49	56	63	70	72	70	70	64	50	39	58
Cleveland, Ohio	29	34	45	49	58	65	68	64	62	52	31	23	48
Evansville, Ind.	47	50	57	62	72	74	80	74	74	66	59	46	63
Indianapolis, Ind.	42	47	48	53	60	66	70	66	67	61	52	40	56
Chicago, Ill.	45	51	54	59	64	71	73	70	65	60	47	41	58
Peoria, Ill.	42	51	59	60	66	73	76	71	67	62	55	47	61
Grand Rapids, Mich.	28	37	49	51	58	63	71	67	59	49	32	23	49
Marquette, Mich.	37	45	52	53	55	61	64	57	49	37	23	28	47
Madison, Wis.	44	51	53	52	57	64	69	64	59	52	41	37	54
Duluth, Minn.	47	58	60	58	56	61	63	61	56	45	39	41	54
St. Paul, Minn.	49	56	55	58	57	62	70	66	60	53	44	41	56
Des Moines, Iowa	53	56	56	58	61	66	73	71	63	63	54	50	60
Dubuque, Iowa	49	53	53	57	58	64	70	64	59	55	46	42	56
St. Louis, Mo.	49	51	55	58	64	69	71	68	68	65	56	46	60
Springfield, Mo.	50	57	58	60	62	67	74	64	71	63	60	50	61
Bismarck, N. Dak.	53	58	56	58	58	62	71	69	62	60	52	49	59
Devils Lake, N. Dak.	50	56	56	58	57	60	68	65	58	54	47	45	56
Huron, S. Dak.	57	65	61	62	64	68	74	71	64	61	55	50	63
North Platte, Nebr.	62	64	66	62	63	75	81	78	73	71	64	57	68
Omaha, Nebr.	55	57	57	56	62	68	75	69	65	63	55	52	61
Concordia, Kans.	60	63	69	65	68	77	82	80	75	71	68	58	70
Dodge City, Kans.	65	66	66	66	65	71	74	77	73	75	71	67	70
Iola, Kans.	56	60	61	60	64	70	78	73	69	65	62	54	64
Washington, D. C.	46	54	54	58	61	62	64	61	63	61	56	51	58
Lynchburg, Va.	45	53	59	62	67	65	70	66	66	64	57	45	60
Norfolk, Va.	50	56	58	60	62	60	63	62	62	63	62	50	59
Parkersburg, W. Va.	30	37	42	48	55	58	62	57	59	52	37	27	47
Charlotte, N. C.	50	56	62	65	71	67	62	61	66	65	66	52	62
Charleston, S. C.	58	58	65	71	71	69	63	63	68	66	69	55	65
Atlanta, Ga.	47	53	56	64	68	69	60	58	66	65	63	47	60
Thomasville, Ga.	53	54	63	66	67	65	56	58	59	62	64	51	60
Jacksonville, Fla.	56	57	67	73	71	65	63	63	60	56	62	52	62
Miami, Fla.	64	69	72	72	66	61	66	70	64	60	60	62	66
Memphis, Tenn.	46	54	58	65	67	73	73	72	72	70	62	45	63
Nashville, Tenn.	43	47	53	61	67	69	70	69	70	65	57	42	59
Birmingham, Ala.	45	51	58	62	64	68	61	64	68	67	63	43	60
Mobile, Ala.	50	56	62	73	71	68	59	62	64	66	57	47	61
New Orleans, La.	48	50	57	60	66	60	54	54	61	64	56	46	56
Amarillo, Tex.	76	77	80	79	80	85	81	82	80	78	78	76	79
Houston, Tex.	51	55	58	59	67	74	72	69	70	70	60	46	63
El Paso, Tex.	74	79	83	87	89	89	79	77	81	84	78	75	81
Fort Worth, Tex.	55	63	67	69	72	73	86	79	82	68	69	61	70
Galveston, Tex.	52	53	57	62	70	78	74	70	69	77	66	53	65
San Antonio, Tex.	51	53	57	57	62	71	73	75	71	67	52	52	62
Oklahoma City, Okla.	55	60	60	62	63	71	76	77	73	67	64	59	66
Little Rock, Ark.	46	53	56	62	65	71	70	71	72	70	60	48	62
Havre, Mont.	43	53	56	56	55	64	73	70	60	46	47	42	55
Kalispell, Mont.	29	41	50	56	52	60	73	68	59	51	30	22	49
Cheyenne, Wyo.	64	64	64	60	58	67	69	69	67	67	65	63	65
Sheridan, Wyo.	56	62	64	58	60	68	71	69	62	54	52	53	61
Pueblo, Colo.	77	77	74	69	71	76	74	74	79	78	76	77	75
Santa Fe, N. Mex.	72	72	72	74	75	79	67	70	77	79	77	74	74
Phoenix, Ariz.	72	77	80	87	91	93	82	83	89	89	83	77	84
Modena, Utah.	64	65	66	69	74	86	75	76	80	80	72	63	72
Salt Lake City, Utah	45	48	54	62	66	77	78	76	76	68	58	44	63
Winnemucca, Nev.	56	60	67	74	77	85	91	92	86	79	65	53	74
Boise, Idaho	38	48	57	66	71	79	87	86	79	69	50	40	64
Seattle, Wash.	25	35	44	51	51	54	63	59	48	33	21	21	42
Walla Walla, Wash.	26	34	53	64	67	74	85	84	71	61	34	20	56
Portland, Ore.	25	32	39	47	50	56	70	66	52	43	26	23	44
Baker, Ore.	42	50	55	60	63	67	79	81	74	65	46	36	60
Eureka, Calif.	37	39	43	51	51	53	44	40	47	45	39	40	44
Fresno, Calif.	44	60	64	82	87	94	96	97	90	87	70	47	76
Los Angeles, Calif.	67	68	67	69	62	71	77	79	77	76	77	73	72
Sacramento, Calif.	46	56	65	80	81	89	96	96	89	82	64	44	74
San Diego, Calif.	67	67	66	69	58	62	67	72	72	73	76	74	68
San Francisco, Calif.	52	54	59	70	70	75	69	63	70	69	60	54	64

Weather Bureau.

[1] Normals are based on records of 15 or more years of observations.

INDEX

Page

Adams Act, purpose of 462
Agricultural—
  associations, number and members, by kinds and States 1390–1393
  products—
    exports 1229–1237, 1258–1259
    foreign trade (1909–1925) statistical summary 1284
    imported, origin 1274–1283
    imports 1242–1252, 1259–1261
    shipments from Alaska, Hawaii, and Porto Rico 1253–1254
    See also Farm products.
Agriculture—
  Department—
    central units merged 31–32
    economic research and administration 32–34
    establishment 712
    expenditures for fiscal year 1925 98–99
    extension service 61–62
    financial statement 98–101
    general administration 30–32
    grain futures administration 37–38
    housing situation 32
    packers and stockyards administration 38–39
    publications and press service 97
  dry-land, improvement 54–55
  economic problems, discussion by Secretary 14–21
  exhibits, work of department 62
  review for year by Secretary Jardine 1–105
  statistics 741–1514
Airplane, dusting—
  for boll weevil 65
  use in control of malaria mosquito 65
  use in control of plum curculio 64
Alaska—
  conservation of wild life 81–82
  farm products, shipments 1253
  timber stand 1454
Alfalfa—
  hay, production, etc 977, 984–985
  seed—
    imported, field tests 61
    prices 985, 1014, 1015, 1016, 1020
Alkaline reserve, requirements in diet 139
Almonds, acreage, production, etc 284, 285, 293–294, 295, 297, 298
Alsike, seed, prices 1015, 1018
Altitude, effects upon fruit blooming 153
Ammonia, synthetic, process 70–71
Anastrepha ludens, note 511

Page

Animal—
  husbandry, investigations 49–51
  products—
    exports 1229–1231
    imports 1242–1245
Animals—
  exports 1229–1231
  imports 1242–1245
  predatory—
    control 81–82
    damage to crops, control 597–598
Annonaceous fruits, kinds of 240
Anthracnose, disease of red-clover seed 61
Ants, agency in distribution of insects 501
Aphelenchus fragariae, note 584
Aphids, agency in spread of potato diseases 536
Aphis, beet root, control by irrigation 566
Apple—
  cankers, remarks 471
  cedar rust, note 468–471
  diseases 458, 464–465, 476, 477
  maggot, danger from, note 512
Apples—
  canning industry 607–608, 609, 611, 612
  drying industry 604–606
  exports, remarks on increase 122
  freight rates 1412
  imports and exports 694–695, 699, 700–701, 703
  kinds in catalogue of 1823 120
  list of Coxe in 1817 121
  marketing, storage needs 673–674, 680–681
  orchard in New Mexico in 1675 114
  origin, production, etc 216, 217, 218, 239
  pests, control, early 121–122
  production, marketing, etc., statistics 859–869
Apricots—
  canning industry 609
  drying industry 604, 606
  origin, production, etc. statistics 230–231
Arbitration, trade disputes, services of Department of Agriculture in 41–42
Argentina—
  corn prices spot 803, 804
  flaxseed price at Buenos Aires 841
  wheat, prices for Barletta at Buenos Aires 769
Armour-Morris, merger case, conclusion 39–40
ARNER, G. B. L., statistics, agricultural, compilation (with others) 741–1514
Arsenate, lead, insecticide, use, discovery, etc 497, 575
ARTHUR, J. C., work of, notice 461
Aschersonia sp., use against white fly, note 504

Page

Asclepias subulata, possibilities in rubber production 52
Asparagus—
breeding—
by department 447–448
for disease resistance 529
canning industry 445, 608, 611
origin, production, etc 446–448, 888, 890
rust resistance and losses 447–448
seed production 329
yield 448
Aspergillus, study by department scientists 74
Aspirator, invention for cleaning grain 43
Auctions, fruits and vegetables 657–658
Automobile, exhaust gas, use against rats, etc 596–597
Avocados, origin, production, etc 240, 252–253

Bacon—
exports—
by countries, 1910–1925 1142
by months, 1910–1926 1141
prices—
in England, 1909–1925 1146
wholesale and retail 1135
Bagnoll, Lt. Richard, discovery of sweet corn 413
Bananas—
imports and exports 694, 697, 698
origin, production, etc 255–256
Bancroft, note on tomato 414
Bankruptcy, farmers', statistics 1386
Barberry—
eradication, investigation results 55–56
Japanese, harmless 56
Barium carbonate, use against rats 596
Barley—
acreage, value, etc. by periods, by States and by countries 821–822, 824–825
exports, prices, etc. by periods and by countries 821, 829, 830–831
imports, by periods 829
marketing, prices, markets, etc 823, 827–831
prices—
by periods, by States and countries 821, 823–825, 830–831
on farm 830
production—
world, 1909–1925 827
yields, etc. by periods, by States and by countries 821–823, 824–827
receipts at principal markets 823
reduction of yield with causes 821
statistics 821–831
stocks, supplies, receipts, etc 827–828
trade international by periods 829
value per acre, by States, 1909–1925 1317–1318
weight per bushel 1361
Bean—
beetle, Mexican, spread, etc 556–557
weevil, control in California 65
Beans—
baked, canning industry 613
breeding for disease resistance 529–532
climatic requirements 399

Page

Beans—Continued.
dry—
acreage, etc., 1919, 1924, 1925 400
production and marketing 401, 947–948
green—
acreage, etc., 1924, 1925 401
cultural methods 402
See also snap.
Lima, canning industry 608
navy, use in canning 613
origin 398
rotation in truck-crops 398
seed, production 329–330
snap—
canning, acreage, with map 445
canning crop, distribution 445–446
production and marketing 890–892
See also green.
soy, production and marketing 949
string, canning industry 607–608, 612
uses as food 398–399
Beattie—
J. H., article on "Fruit and vegetable production" (with others) 151–452
W. R., article on—
Farming. "Relation of the fruit and vegetable industry to other farm enterprises" (with others) 125–131
"Fruit and vegetable production" (with others) 151–452
"Fruits and vegetables" (with others) 107–124
Fruits. "Diseases and pests of fruits and vegetables" (with others) 453–509
See also Farming.
"Horticultural manufactures" (with others) 601–622
"Horticultural outlook" (with L. C. Corbett) 719–727
"Marketing fruits and vegetables" (with others) 623–710
Vegetables. "Diseases and pests of fruits and vegetables" (with others) 453–599
See also Farming.
Beavers, mountain, control 596
Becker, Joseph A., statistics, agricultural, compilation (with others) 741–1514
Beef—
cured and curing, storage holdings by months 1069
prices—
wholesale and retail, 1913–1925 1065–1066
wholesale, Chicago and New York 1195
products, trade international, by countries 1068
statistics 1065–1066, 1068–1071
storage holdings by months 1069
trade international, by countries 1068
yield of cuts 1071
Beeswax, prices, 1920–1925 1228
Beetle—
Japanese—
control measures 64–65
injuries by and control 508–509
ladybird, use against fruit scales 504–505

Page

Beetles, agency in spread of mosaic disease 536
Beets—
canning industry 611
origin and production 369–370
seed production 330
sugar—
production and acreage 998, 1002–1003
study of pests and diseases 59–60
BELL, W. B., article on—
Fruits. "Diseases and pests of fruits and vegetables" (with others) 453–599
Vegetables. "Diseases and pests of fruits and vegetables" (with others) 453–599
Berries—
canning industry 607–608, 610, 611, 612
imports 694, 698
See also Blackberries; Raspberries; Strawberries.
Birds—
migratory—
banding 82
Federal protection for 82
relation to fruits and vegetables 584–587
Black scale, spread by wind, note 500
Blackberries—
canning industry 610, 612
origin, production, etc 258, 263, 264, 265–266
See also Berries.
Blight, pear—
injuries, by, etc 480
remarks 463–464
Blister rust, white pine, control 57–58
Blueberries, origin, production, etc 258, 268, 269–270
Boll weevil—
bait, investigations 71–72
dusting by airplane 65
Bordeaux mixture—
combinations 574
discovery and use 122, 457, 458, 533, 574
preparation 533, 574
BORDLEY, mention of sweet corn 412
Borer, peach, control by use of paradichlorobenzene 64
Bran, prices in Minneapolis and on farm 777
Brazil—
introduction of cucumbers 425
nut, note 304
Bread, prices, by years and markets 775–776
Breeding—
asparagus, department work 447–448
plant, value against diseases 529–532
Bridgeman, mention of sweet corn 412
Brine, use in keeping watermelons 424
Broccoli—
origin and production 388–389
similarity to cauliflower 388, 389
Broker, buying, fruits and vegetables 657
BROOKE, F. E., article on—
Fruits. "Diseases and pests of fruits and vegetables" (with others) 453–599
Vegetables. "Diseases and pests of fruits and vegetables" (with others) 453–599
Broomcorn, production and marketing 951
Brown-rot fungus, note 466
Brussels sprouts, production and marketing 388

Page

Buckwheat—
acreage, value, yield, etc 854–856
production, prices, etc 854–856
value per acre by States, 1909–1925 1319
Buds, undercooling effect 152–153
BURRILL, T. J., work of, notices 455, 456, 459
Butter—
creamery—
market receipts, leading markets 1085–1086
prices wholesale at leading markets 1094
production, 1917–1924 1083
production in factories by States 1084
storage holdings, 1915–1925 1092
peanut, making and uses 410–411
prices—
by months, 1910–1925 1092
Denmark, 1914–1925 1095
Great Britain, 1909–1925 1095
leading markets, U. S 1194
receipts, market, by States 1087–1091
trade—
by months, 1917–1925 1085
international, by countries 1093
Butternuts, production, industry, etc 303

Cabbage—
breeding for disease resistance 530,
Chinese, production and uses 397–398
production and marketing 893–898
sauerkraut, production and marketing 446
seed, production 330
Cabbages—
food value and vitamin content 387
industry, development 385
origin, production, etc 384–388
production and marketing 385, 386–387
varieties, and improvement 384
Caconema radicicola, note 583
Calcium, sources in food 142
CALDWELL, J. S., article on "Horticultural manufactures" (with others) 601–622
California—
cotton growing, community regulations 54
production of walnuts and almonds by years 285
rubber culture, possibilities 52
CALLANDER, W. F., statistics, agricultural, compilation (with others) 741–1514
Calves—
prices 1055, 1056–1065
slaughter—
by States and years 1045
statistics 1185
veal—
prices by months 1054, 1055
prices by States, 1925 1053
See also Cattle.
Camphor scale, distribution and control 510
Canada, prices for flaxseed at Winnipeg 842
Canal Zone, rubber culture, possibilities 53
Cane, sugar—
and sirup of 1000, 1005, 1008
mosaic and root disease immunity studies 59
Canker—
apple, remarks 471–472
citrus, eradication 58–59

Canker—Continued.
worms— Page
apples, control early 121–122
study early, notes 494
Cannery, tomato, crop agreements 433
Canning—
corn, equipment, etc 436
crops—
asparagus and beans 888–892
importance, etc., remarks 429–430
equipment for tomatoes, note 432
figs industry 616
fruits and vegetables—
distribution 607–611
growing for 603
home, remarks 615–616
industry 606–616
quantities, tables, by kinds 608–611
values table 607
spinach, crop for 929
tomato, beginning and development 416
Cantaloupes—
maturity test, California 73–74
production and marketing 898–899
Carbon disulphide, fumigant against—
insects 570
rodents 595
Carrots—
origin, production, value, etc 371
seed production 331
Cars—
heated, for fruits and vegetables 690
refrigerated, fast freight 646, 684
refrigerator, for fruits and vegetables 646, 683–685, 688
CARTIER, JACQUES, note on cucumbers 425
Cashew nuts, production 304
Cattle—
beef—
prices by markets 1056–1065
prices by months 1052–1056
prices by States, 1925 1052
condemnation under inspection, causes 1181
dairy—
breeding experiments 50–51
leading breeds, number registered 1071
nutrition and milk yield, research 49–51
diseases 1107–1110
losses from disease and exposure 1040
number by countries and periods 1038–1039
price advance and lower production 9
prices—
at leading markets by months 1057–1064
by months, Buenos Aires 1056
farm and market, 1910–1925 1056
in 1909–1925 1055
live steers 1065–1066
production on farms, number and value by States 1033–1034
receipts—
and shipments 1040, 1042–1044
by markets 1042–1043
by months 1041
stockyard, by months 1041
stockyard, slaughter, etc 1042–1043
Cattle—Continued.
shipments— Page
by markets 1044
stockyard, by months 1046–1047
stockyard under inspection, by months 1048–1050
slaughter—
by markets 1043
by States and years 1045, 1046–1047
statistics 1043, 1045–1047, 1067, 1178, 1184–1185
under inspection by months 1067
statistics 1033–1071, 1107–1110, 1178–1181, 1184–1185
tick eradication methods 68
tuberculin testing, 1917–1925 1107
value by age groups, 1910–1926 1051
Cauliflower—
origin, production, etc 388, 889
production and marketing 900
seed production 331
similarity to broccoli 388–389
Cedar, red, source of apple rust, discussion 468–471
Celery—
acreage 1925 396
breeding for disease resistance 532
crop value 1925 396
income, gross, of acre 395–396
origin, production, etc 394–396
production and marketing 394–395, 396, 901
seed production 331–332
Ceratitis capitata, remarks 511
Cereals, fuel values 135–136
Cheese—
American—
prices, 1910–1925 1103
production, 1917–1924 1095
storage holdings 1102
market receipts—
by State of origin 1098–1101
leading markets 1097
production by States, 1918–1924 1096
Swiss, production by months 1096
trade international, by countries 1102
Chemical conditions, relation to fruit growing 476–478
Chemicals, use in control of—
plant insects 567–571
vegetable disease 522–525
Cherries—
canning industry 607–608, 610, 612
imports and exports 698, 701
origin, production, etc 229–230, 239
Chestnut-bark disease, remarks 482
Chestnuts, production, industry, etc 301–303
Chickens, prices, 1910–1925 1217
Chicory, production 397
Chili peppers, use 417
China—
introduction of cucumbers 425
watermelons, use 422
Chinese cabbage, production and uses 397–398
Chloride, mercuric, use against leaf spot 528

Page

Cider—
making in colonial days 120
manufacture 614–615
Citrus—
bud selection 248–249
canker, eradication 58–59
cost of production 250
diseases, note 472, 477, 482
frost injury and protection against ... 207–208, 211, 214–215, 245–247
fruits—
discussion 240–250
trees, number 871
statistics 870–875
growing, use of weather forecasts in 63
industry—
development 240–242
expansion 122
nema, notes 583–584
packing houses, equipment 635
varieties for—
California and Southwest 245
Florida 242–244
Gulf Coast States 244–245
CLARK, ELIZABETH, story of fear of tomato as poison 415
Climate—
effect on spread of insects 556
relation to—
fruit and vegetable production 151
growing of beans 399
Clothing, farm families, expenditure per person 1355
Clover—
hay, production, etc 977, 978, 984, 988, 989
mite, spread by wind, note 500
seed production, etc 1011–1012, 1014, 1015, 1017, 1018, 1020
sweet, seed prices 1015
COBB, N. A., article on—
Fruits. "Diseases and pests of fruits and vegetables" (with others) 453–599
Vegetables. "Diseases and pests of fruits and vegetables" (with others) 453–599
Coconuts, production, industry, etc 304
Codling moth, apple, early control 121–122
Coffee—
prices 1030–1031
trade international 1030–1031
Cold storage, space refrigerated, October 1, 1925 1387
See also Storage.
Collards—
production and uses 389
seed production 332
Colleges, agricultural, establishment 713–714
COLLINSON, PETER, suggestion on spraying insects 493
Colonists, American, notes on fruits 110–111
Colorado River, muskmelons early 420
Colts, production on farms, by States 1207
COLUMBUS, discoveries of vegetables 412
Containers, shipping for fruits and vegetables 639–642
Cooperation, agricultural—
discussion by Secretary 17–20
Federal and State 714–716, 717–718, 728–740

Page

Cooperative agencies, fruit and vegetable benefits 634–635, 643, 655–657, 664–670
CORBETT, L. C., article on—
Farming. "Relation of the fruit and vegetable industry to other farm enterprises" (with others) 125–131
"Fruit and vegetable production" (with others) 151–452
"Fruits and vegetables" (with others) 107–124
See also Farming.
"Horticultural manufactures" (with others) 601–622
"Horticultural outlook" (with W. R. Beattie) 719–727
"Marketing fruits and vegetables" (with others) 623–710
Corn—
acreage, value, etc., by periods and by States 788–789, 791–792
canning industry 602, 607–608, 612
classification by cars 797
cost of production—
and yields, 1924 1332–1333
by States, 1924 1330–1331
comparison with oats and wheat 1337
exports, prices, etc 788, 799–804
foreign markets, prices spot 803–804
husk as protection against worms 567
imports 788, 798
marketing, exports, prices, etc 788, 791, 794–802
oil, prices at Chicago, 1909–1925 804
prices—
future, 1921–1924 and 1924–1925 805
markets, etc 788, 799–805
production—
exports, etc 788, 789, 791–794
of world 794
receipts and shipments 795–796, 797
rotation 57
statistics 788–805
stocks and shipments 794
supplies visible 796
sweet—
contracts of canners and growers 437
distribution, map 413
origin, varieties, etc 411–414
production and use 902–903
seed, production 337–338
trade international by periods 798
value per acre, by States, 1909–1925 1314–1315
values on farms by States 789
yield, reduction and causes 788
yields, by years, by States, and by countries 788, 789–790, 791–794
Cost of living, index numbers 1374
Cotton—
community production, advantages 53–54
cost of production, by yield groups, 1924 1340
cultural methods, new 54
dusting by airplane for boll weevil 65
fertilizers use 1423
one-variety crop, advantages 53–54
prices—
farm and market 962–968
future 966

Cotton—Continued.
production— Page
and marketing 952–968
improvements 53–54
of world 957–960
reports, criticism and suggestion 46
situation for season, discussion by President 6–8
study by department 8
value per acre, by States, 1909–1925 1322
varietal improvements 54
Cottonseed—
meal, prices 971–972
oil, trade and prices 970–971
production and marketing 968–972
Cover crop, use in orchards 191–192
Cowpeas, production and marketing 950
Cows—
dairy, relation of calcium and phosphorus to milk yield 49–50
prices by months, 1910–1925 1051
production on farms, number and value by States 1035–1036
COXE, note on names of apples, 1817 121
Crabapples, origin, etc 217
Crabs, land, control as crop enemy 598
Cranberries—
exportation 699, 700
origin, production, etc 258, 268, 269
production and value 877–878
Crawfish, control as crop enemy 598
Credit, relation to farm surplus 16, 17
Credits, farm, discussion by Secretary 13–17
Cropping, system advantageous 127–128
Crops—
acreages—
by States, 1924 and 1925 1358
cultivated and fallow 1380–1381
in United States, table 102
leading, discussion by Secretary of totals 2
outlook and intention-to-plant reports 716
production—
and exports, review, tables 102–105
in the United States, table 103
index numbers 1358–1359
reporting, intentions to plant, surveys 45–46
rotation. *See* Rotation, crop.
statistics, explanation of estimates 741
value—
by States 1360
per acre, 1866–1925 1341
weight per bushel 1361
yields, index numbers 1358–1359
See also specific names of crops, as Corn, etc.
Crossties, numbers by kinds of wood 1475
Crows, injury to fruits and vegetables 586
Cuckoos, usefulness, note 586
Cucumbers—
diseases, control 426
growing early 425–426
leaf spot, control 528
marketing conditions 426–428
origin, production, etc 425–428
pickling—
acreage, etc 442–445
cultural requirements 443–444
Cucumbers—Continued.
pickling—continued. Page
handling crop 442–443
salting stations 443
production and marketing 903–905
seed, production 332
Cucurbita—
maxima, origin 428
pepo, origin 428
Curculio, plum. *See* Plum.
Curly top, sugar beet, investigations 59–60
Currants—
black, danger to white pine 58
importation discussion 696, 698
origin, production, etc 258, 267, 268
Cyanide, calcium, use against animal pests 595

Dairy—
breeds, number of cattle registered 1071
cattle shipments, stockyard, under inspection by months 1048–1049
products—
manufactured by months 1074–1075
production 1920–1924 1073
statistics 1072–1103
research, cattle nutrition and milk yield 49–51
Dairying, 1926, remarks by Secretary 11
Dandelion, production 396
DARROW, G. M., article on "Fruit and vegetable production" (with others) 151–152
Dates—
imports, statistics 697, 698
origin, production, etc 254–255
DE CANDOLLE, notes on vegetables 414, 419, 422, 425, 428
Derris, use against insects 569
DE SOTO—
discovery of corn 412
note on cucumbers 425
Dewberries, origin, production, etc 258, 263–264
Diseases, deficiency, remedy for 143–146
See also Fruits, diseases.
Disinfectant, wheat flour in storage, discovery 72
Drainage, corn, remarks 437
Drying—
figs 616
fruits and vegetables, industry 604–606, 616–617
Durum wheat, acreage and production 748
Dust explosions, control 73
Dusting—
airplane, for control of—
malaria mosquito 65
plum curculio 64
combination with spraying for insects 572–575
comparison with spraying in insect control 533, 569–570, 575
Dusts—
insect, combinations 572–575
materials and application 575
Dyes, discovery of process for making phthalic anhydride 75–76

EARLE, F. S., work of, notices 455–456
EARLE, PARKER, work of, notes 455, 461
Earwig, European, control by European parasite 65
Education, vocational, in agriculture 713–714, 715–716

Eggplant— Page
origin, production, etc. 416–417
seed production 332
Eggs—
cold storage holdings, 1915–1925 1222
prices—
1910–1925 1222
at leading cities 1224–1225
receipts on markets—
1917–1925 1217–1218
by States 1219–1222
trade international, by countries 1223
Egypt, source of watermelons, note 422
ENDECOTT, Gov. JOHN, activities in fruit growing 115–118, 120
ENDECOTT, WILLIAM C., remarks on Endecott pear 117
Endive, production 397
Entomophthora aulicae, use against moths 504
Exchange, foreign, rates in New York 1424–1425
Experiment stations—
establishment and value 714
insular, problems and accomplishments 94–97
Exports—
agricultural products 1229–1237, 1255–1259, 1262–1273
animal products 1229–1231
bacon 1141–1142
beef and beef products 1068
butter 1093
cheese 1102
domestic foodstuffs and cotton 104
eggs 1223
forest products 1235, 1261
fruits 695, 699–704, 1231–1232
grains and grain products 1232
hams 1142
hides 1198
lard 1141, 1143
meat and meat products 1191
milk, condensed 1076
mutton 1169
naval stores 1235
nuts 1233
oils, oilseeds, and products 1233
pork 1140
poultry 1216
seeds 1234
skins 1198
spices 1234
sugar 1234
vegetables and vegetable products 695, 709–710, 1231–1235
wood 1236
wool 1169, 1171
Express service, fruits and vegetables 684–685
Extension—
agents, county, number, 1914–1925 1400–1401
work, cooperative—
expenditures by projects 1394–1397
expenditures by sources of funds 1398–1399

Farmers—
bankruptcy among 1386
business organizations by kinds and States 1388–1389
prices for, by articles 1362–1363
Farmers—Continued. Page
supply with economic information, aid of department 15
tomato, agreement on crop 433
Farming, cost of production, decrease 21
Farms—
acreage, production, and value, 1924 and 1925 1356–1357
business surveys, 1907–1924 1285–1311
efficiency, increase, remarks by Secretary 20–21
enterprises, selection of 131
equipment, manufacture and sale 1364–1365
families—
clothing expenditures per person 1355
costs of living 34
income, distribution 128
labor. *See* Labor.
living for family, 1918–1922 1352–1354
management and costs statistics 1285–1311
numbers and acreage 1378–1379
population—
drift 32–34
statistics 1402–1406
produce, prices, spread in distribution 34–36
products—
costs, for handling and distribution 34–36
exported and imported, value 1255–1257
exported, destination 1262–1273
production and distribution, balance 8
shipments to Alaska, Hawaii, and Porto Rico 1238–1241
standards, need 15
See also Agricultural products.
returns by sections, 1923 and 1924 1342–1343
surpluses, handling, difficulties, remarks 14–17
values, grain, etc. *See* Corn.
Fats, fuel values 135–136, 147–148
Feijoas, origin, production, etc. 240, 256
Fence, rabbit-proof, note 592
Fertilization, self, of fruit varieties 182–183
Fertilizer—
materials—
imports, 1912–1925 1421
prices, wholesale 1422
statistics 1413–1423
sales, commercial, in cotton States 1423
Fertilizers—
investigations, results 80–81
peanut, remarks 405
production and value, by States and periods, 1914–1923 1417–1420
use on cotton, 1924–1925 1423
Field crops other than grain, statistics 947–1032
Fig, Mission, in California, note 114
Figs—
canning industry, etc. 616
drying industry 616
importation 696–697, 698
introduction in Florida 115
origin, production, etc. 234–237
Filberts, production, industry, etc. 300–301
Fire prevention, threshing machines, cotton gins, and grain elevators 73
Fires, forest, number and causes 1458–1459
Fish—
oil—
emulsion, insecticide use, note 500
soap, use against insects 574–575
scrap, production, 1912–1923 1416–1417

Flax— Page
acreage, value, etc., by periods and by States 831-832, 833
exports, receipts, prices, etc., of seed 831, 835, 836, 839-840
farm value 832
imports of seed 840
marketing seed, prices, etc 835-841
prices of seed by farmers and on markets 840-842
production, prices, etc., by periods, States, and countries 831-832, 834-835, 839, 840-842
receipts and shipment of seed 836-837
statistics 831-843
stocks and supplies of seed 838
trade, international, in seed by periods 840
yield of seed—
by periods and States 832
prices, etc 832, 839-842
reduction with causes, by years 832
Flaxseed—
oil content determination, invention 44
statistics 831-843
use for linseed oil, quantities 839
value per acre, by States, 1909-1925 1318
See also Flax.
Flies, fruit, remarks 510-512
Flohr, Lewis B.—
article on—
"Fruit and vegetable production" (with others) 151-452
"Horticultural manufactures" (with others) 601-622
"Marketing fruits and vegetables" (with others) 623-710
statistics, agricultural, compilation (with others) 741-1514
Floods, forecasting by Weather Bureau 64
Florida—
fruits in colonial days 114-115
gopher, control as crop enemy 599
rubber production, possibilities 52
Flour—
marketing, exports, prices, etc 760, 762, 763, 772-775
potato, manufacture and use 621-622
Food—
and drugs act, enforcement 74-75
law, statistics 1447
needs and sources, in calories 135-137, 138, 140-141
needs of human body 135-146
requirements, adjustment of horticultural production 725-727
Foot-and-mouth disease, eradication, in California and Texas 65-66
Forage plants, seed imports 1013
Forest products—
exported and imported, value 1255-1257
exports 1235-1237, 1261
imports 1251-1252, 1261
Forestry, white pine blister rust campaign 57-58
Forests—
areas 1449-1451, 1452
Forests—Continued. Page
fires—
costs, etc 1456-1457
number and causes 1458-1459
national—
better utilization of timber 90-91
grazing, receipts, etc 1461
reforestation necessary 89-90
road, and trail building, etc 91, 1451
work of Agriculture Department 83-91
plantings, by States 1455
Formaldehyde, use against crown gall 485
Fowl pest, European, outbreak and suppression 66
Freights—
index numbers 1408
ocean for wheat 1413
rates on—
apples 1412
wheat 1409-1411
tonnage on railways, 1920-1925 1407-1408
Frost—
damage in transit, prevention 646-647, 689-690
formation, effect of humidity on 209
killing—
average dates 157-159, 161
dates for last and first 1512
protection—
fruits and vegetables 207-215
methods 209-211
orchard heating 210-211, 212-215
risk to fruit and vegetable production 151-161
Fruit—
flies, remarks 510-512
growing—
labor distribution 129-130
specialization in 130
industry—
development, 1880-1900 122
economic factors 170-173
history, early 109-123
relation to other farm enterprises; article by L. C. Corbett, W. R. Beattie, and H. R. Talley (with vegetables) 125-131
needs of human body 135-146
planting, selection of varieties 178-185
regions, devastation by diseases 463-464
trees, rabbit injury, remedy 593
Fruits—
acreage, increase in United States 490-492
American, early records 110-111
American Indian, notes 110-111
animals injurious to 587-599
article by L. C. Corbett, H. P. Gould, and W. R. Beattie (with vegetables and nuts) 107-124
bird injury 586
canning industry 606-613
citrus, discussion 239, 240-250
deciduous—
discussion 216-238
needs of rest period 163

Fruits—Continued. Page
diseases—
American origins 478–482
article by M. B. Waite, W. W. Gilbert, N. A. Cobb, W. R. Beattie, F. E. Brooke, J. E. Graf, W. B. Bell, and W. L. McAtee (with vegetables) 453–599
control methods 483–487
discussion 453–488
losses from 463–473
native American, remarks 479–481
old world, remarks 482
physiological 473–478
drupaceous—
description 221–223
discussion 221–238
origin, production, etc 223–238
drying—
dependence on weather forecasts 64
industry, distribution of 604–605
exports 122, 1231–1232
fuel values 135–136
grading for shipment 630–633, 637–639, 643
group relationships, cultural and economic 215–257
harvesting for shipment 628–630
history, American, starting points 113–115
importations and cultivation, early 111–118, 120–121
imports 1245–1246
imports and exports 694–704
Indian American 110–111
indigenous American, early, notes 110–111
industry—
and production, outlook 719–727
commercial, geographic distribution 161–173
insect control, efficiency and needs 506–507
inspection for shipping 942–943
juice manufacture 614–615
losses from insects 490–492, 505
manufactures, article by L. C. Corbett, J. S. Caldwell, William Stuart, W. R. Beattie, and L. B. Flohr (with vegetable) 601–622
manufactures as basic industry 604–613
market outlets 650–652
marketing—
article by A. W. McKay, H. W. Samson, R. R. Pailthrop, L. B. Flohr, L. C. Corbett, L. A. Hawkins, J. R. Magness, H. P. Gould, and W. R. Beattie (with vegetables) 623–710
distributing agencies 655–659
trade associations 664
"unloads" etc 945–946
native American, diseases 479, 480, 481
nematode enemies 575–584
nutritive value; article by Caroline L. Hunt (with vegetables and nuts) 133–149
origin as related to diseases 480–482
packing—
houses 633–636
processes 636–642
Fruits—Continued. Page
pests, article by M. B. Waite, W. W. Gilbert, N. A. Cobb, W. R. Beattie, F. E. Brooke, J. E. Graf, W. B. Bell, and W. L. McAtee (with vegetables) 453–599
pomaceous—
cultural requirements 217–218
descriptions 216–217
discussion 216–221
economic status 218–221
production—
article by L. C. Corbett, H. P. Gould, T. R. Robinson, G. M. Darrow, George C. Husmann, C. A. Reed, D. N. Shoemaker, C. J. Hunn, J. H. Beattie, W. R. Beattie, J. B. Kincer, and L. B. Flohr (with vegetables) 151–452
California 876–877
protection—
by birds, mammals, etc 584–599
from frost 207–215
sales inspection 662–664
shipments—
etc., Florida 877
increase 623–624
small, group relationships, cultural and economic 257–284
sources for American varieties 112
spraying, first attempts 121–123
standardization for marketing 628, 642–644
statistics, production, etc 859–888
subtropical—
description 239–240
discussion 238–257
testing for shipment, methods 629–630
value—
in 1919 107–108
of products, comparison 107–109
varietal improvement 184–185
vitamins in 143–146
world production and world markets 693–697
See also Horticulture.
Fumigants, use against insects 570–571
Fungi—
entomogenous, use 504
sources of fruit diseases 456–473, 478–479
Fungicide law, enforcement 1447
Fungicides—
combination with insecticides 572–575
regulatory work 459, 462–463
use 483, 484–485
use, early 121–122
Futures, prices for wheat, corn, oats, and cotton 779, 805, 820, 966

Gall nema, injuries to crops, remarks 583
Gardens, farm—
by States 451–452
discussion 450–452
Gas, automobile, use against burrowing pests 596
Gasoline, taxes for roads, by States 1443
Georgia, peach growing 121
GERARDE, note on tomato 414
Germicides, use 483, 484–485
Gherkins, growing and use 428

Page

GILBERT, W. W., article on—
Fruits "Diseases and pests of fruits and vegetables" (with others) 453–599
Vegetables "Diseases and pests of fruits and vegetables" (with others) 453–599
Gipsy moth—
control in New Jersey 65
spread by floating in air 500
GOLD, T. S., notes on colonial vegetables 415, 448
GOMARA, LOPEZ DE, mention of melons 419
GOODRICH, Rev. CHAUNCEY, work on potato blight 342
Gooseberries, origin, production, etc. 258, 267, 268
Gopher turtle, control as crop enemy 599
Gophers, pocket, damage and control 583–589
GOULD, H. P., article on—
"Federal and State research and information service" 711–718
"Fruit and Vegetable Production" (with others) 151–452
"Fruits and vegetables" (with others) 107–124
"Marketing fruits and vegetables" (with others) 623–710
Grades, Federal, fruit and vegetables 643–644
Grading, vegetable, value against disease spread 539
GRAF, J. E., article on—
Fruits. "Diseases and pests of fruits and vegetables" (with others) 453–599
Vegetables. "Diseases and pests of fruits and vegetables" (with others) 453–599
Grain—
grading, ship sampler for, invention 43
moisture determination, tester for 43
removal of weed seed, invention 43
splitting, invention for 43
standards, official, change dates 44
stem rust, due to barberries 55–56
stored, insecticide discovery 72
Grains and—
grain products, exports 1232
products, imports 1246
statistics 743–858
Grape diseases 457, 458, 467, 477, 479, 480, 482
Grapefruit—
imports, statistics 698
production and marketing 870–875
Grapes—
import 694, 698
indigenous varieties, notes 283–284
jelly and paste manufacture 616
origin, production, etc. 258, 272–284
production and marketing by States 878–879
Grasses, stem rust, due to barberries 55–56
Grazing—
forest—
leases, national forests 83–84
legislation desirable 87–89
receipts, etc. 1461
policy of Agriculture Department 84–85
GRAVES, MASTER, note on watermelons 422
GREATHOUSE, C. H., sketch of department history, note 713
Green foods, remarks 382–384, 398
Greenhouses, vegetables, production and value 317–323

Page

Ground hogs, control as crop enemy 595–596
Guano, imports, 1909–1925 1421
Guavas, origin, production, etc. 240, 256
Gumming fungus, notes 466, 482

Haiti, rubber culture, status 52
Hams—
exports, by countries, 1910–1925 1142
prices—
in Liverpool, 1909–1925 1145
wholesale and retail, 1913–1925 1135
HARRIS, THADDEUS W., book on insects 489, 494–495
HARTIG, ROBERT, book 457
Hatch Act—
notes on 461–462
provisions and amendments, significance 714
Hawaii—
experiment station, accomplishments 94–95
farm products, shipments 1253
HAWKINS, L. A., article on "Marketing fruits and vegetables" (with others) 623–710
Hay—
production and marketing 972–989
standards made official 44–45
value per acre, by States, 1909–1925 1322–1323
Heater service, fruits and vegetables, 646–647
Heifers—
numbers by States 1037
See also Cows.
HERRERA, note, early, on melons 421
Heterodera schachtii, note 583
Hevea, experiments in rubber production 52–53
Hickories, production, industry, etc. 303
Hides—
prices, at Chicago, 1893–1925 1199–1200
stocks, by kinds, 1921–1925 1196–1197
trade international, by periods 1198
Highways—
county funds, expenditures 1436–1437
Federal-aid—
by types 1429
statistics 1426–1429
local funds, sources and amounts 1442
State—
expenditures 1434–1435
mileage, by kinds 1430–1431
sources and amounts of funds 1438–1441
taxes on gasoline, by States 1443
See also Roads.
Hogs—
cholera control 69–70, 1147
corn and hog ratios, monthly, 1910–1925 1127
market receipts and shipments, by markets 1118
numbers by countries and periods 1114–1115
pig surveys, spring and fall 1116–1117
prices—
and production in 1926 8, 9–10
at Chicago, by months, 1901–1925 1128
at six markets, by months, 1925 1130–1133
by months, 1910–1925 1128
by States, 1925 1129
farm and market, 1910–1925 1136
wholesale and retail, 1913–1925 1135
production on farms, number and value, by States, 1920–1926 1111–1113

Page

Hogs—Continued.
receipts—
market, by months, 1900–1925 1119
market, in 1915–1925 1120
stockyard, 1915–1925 1119
stockyard, slaughter and shipments, 1925 1123–1124
shipment by markets, 1915–1925 1122
slaughter—
by markets, 1915–1925 1121
under inspection 1136
statistics 1110–1137
surveys, aid to farmers 45
weight at four markets, monthly 1125–1126
See also Swine.
Holloway, David P., work in establishment of department 712
Home Economics, Bureau of, purpose and accomplishments 48–49
Honey, prices, 1920–1925 1227–1228
Hooker, note on cucumbers 425
Hops, production and marketing 990–993
Horse-radish, origin, growing, etc 450
Horses—
losses from disease 1204
receipts—
at stockyards 1205
at stockyards, by markets 1206
market, 1900–1925 1205
on farm, value by age groups 1208
prices—
by States 1209
in 1910–1925 1208
production on farms—
number and value, by States 1201–1202
number, and values, by years 1200
Horticultural Manufactures; Horticultural Outlook. *See* Horticulture.
Horticulture—
adjustments, seasonal and acreage 722–723
American—
development, remarks 453–454
fruit stock sources 112
leaders, names and notes 119–121
literature, remarks 119
distribution of production areas, effect 721–722
expansion and exploitation 720–721
industries, influence of cost factors on location 724
manufactures, article by L. C. Corbett, J. S. Caldwell, William Stuart, W. R. Beattie, and L(ewis) B. Flohr 601–622
noncompetitive crops 722
outlook, article by L. C. Corbett and W. R. Beattie 719–727
production—
adjustment to food requirements 726–727
and prices 725–726
in succession 721
relation to population 724
regional competition, factors 721–722
See also Fruits; Vegetables; *also* specific names of fruits and vegetables.
Hot water use in—
nematode control 531
plant disease control 485, 519, 528–529
soil sterilization 485, 519

Page

Humboldt, note on tomato 414
Hunn, C. J., article on "Fruit and vegetable production" (with others) 151–452
Hunt, Caroline L., article on "Nutritive value of fruits, vegetables, and nuts" 133–149
Hunters, licenses by States 1446
Husmann, George C., article on "Fruit and vegetable production" (with others) 151–452
Hydrocyanic acid, insecticide use, remarks 498–499

Ice—
bunkers. *See* Cars, refrigerator.
cream production, 1909–1925 1083
Importation, seed and plant introduction 718
Imports—
agricultural products 1242–1252, 1259–1261
animal products 1242–1245
animals 1242–1245
beef and beef products 1068
butter 1093
cheese 1102
eggs 1222
farm and forest products, value 1255–1257
fertilizer materials 1421
forest products 1251–1252, 1261
fruits—
and vegetables 693–694, 695–699, 705–709
tables 1245–1246
grain and products 1246
guano, 1909–1925 1421
hides 1108
meat and meat products 1191
milk, condensed 1076
mutton 1169
nuts 1246–1247
oils 1247
origin of farm products 1274–1283
pork 1140
poultry 1216
rubber 1252
seeds 1248
skins 1198
spices 1248
sugar 1249
tea 1249
tobacco 1249
vegetables and vegetable products 1245–1250
wood 1252
wool 1169, 1171
Index numbers—
cost of living 1374
crop production 1358
crop yields 1359
farm wage rates, 1866–1925 1346
freight rate 1408
freight rate on wheat 1409
labor, wages, farm 1374
prices—
cost of living 1374
for farm products 1370–1373
tables 1374
wholesale 1375–1377
wages, farm 1374
India, wheat prices spot at Karachi 769

Indians— Page
fruits grown by 110–111
growing of vegetables 428
ignorance of tomato 415
tradition about corn 412
use of—
cucumbers 425
muskmelons 419, 420
pecans 286
watermelons 422
Indies, West, growing of gherkins 428
Information—
list of publications, classified 728–740
Service, Federal and State, article by H. P. Gould 711–718
Insect—
enemies, use against fruit pests
injuries, diagnosis 559–560
Insecticide—
law, enforcement 1447
stored grain, discovery 72
Insecticides—
contact, progress in use 497–498
discoveries, important 496–500
factors affecting use 568
new and improved methods of application 571–574
regulatory work 459, 462–463
use 496–500, 567–568, 569–570, 571
combinations with fungicides 572–575
Insects—
agency in spread of plant diseases 536
chewing, remarks 545
control—
by contact poisons 569, 573
by crop rotation 566–567
by cultural methods 564–567
by diseases 564
by fertilizers, irrigation, etc 566
by natural enemies 562–564
by planting seasonably 565
by soil management 565
by stomach poisons 568–569, 573
importance to prevent disease spread 535–536
measures, combination with disease control 571–575
natural 560–564
suggestions early 493 495
development 557–559
food habits 550–555
foreign, introduction 492
fruit—
control biological 503–505
control by chemicals 567–571
control costs 505
control methods 492–500
control outlook 571
control progress 495–500
distribution and spread 500–501
first treatise on 494
increase in numbers 490
introduction from abroad, remarks 492
sources and statuts 501–502
losses of fruit, conditions favoring 490–492
Massachusetts, State book of 1841 489
multiplication 557
natural enemies, lack of imported kinds 549

Insects—Continued. Page
relation to—
fruit culture, discussion 488–512
overwintering and spread of plant diseases 536
spread, methods 556–557
sucking—
or biting 544–546
remarks 545–546
vegetable—
control methods 559–564
dissemination and multiplication 555–557
economic importance 540
native and imported 546–549
Inspection—
cattle 1050
corn for grading 797
dairy cattle 1048–1049
hogs for slaughter 1136
insect quarantine, remarks 502
meat and products 1180
oats for classification 815
rye, for classification 785
shipping point, fruit, etc 942–943
slaughter of cattle 1067
State, against insects, note 496
value against disease spread 536–537
wheat—
classification by cars 759
statistics 762
wheat 762
wheat, classification by cars 759
Inventions, department employes 43–44
Iron, sources in food 141–142
Irrigation—
fruits and vegetables, discussion 203–207
influence on vegetable industry 306–307
practices of fruit growers 206–207
relation to melon growing 420–421
sources of water supply, remarks 203
systems of distribution 203–206
use against plant-enemy insects 566
Italy, early use of tomato 414–415

Japanese beetle, injury and control 508–509
JARDINE, Secretary, review of year in agriculture in report to President 1–105
Jelly, manufacture industry 613, 615, 616
Juice, fruit, manufacture 614–617

Kafir, receipts, prices, etc 857–858
Kale—
description and uses 387
production 387–388
seed production 332
KARLSEFNE, discovery of corn 412
Kerosene, insecticide use 498
KINCER, J. B., article on "Fruit and vegetable production" (with others) 151–452
KNAPP, S. A., work of, notice 458
Kohl-rabi, production and uses 289

Labeling, foods, truthful 74–75
Labor—
farm—
supply and demand, 1918–1925 1351
wage rates 1344–1346

Labor—Continued. Page
farm—continued.
wages by States, 1923–1926 1347–1350
wages, index numbers 1346, 1374
fruit and vegetable growing, distribution 129–130
Lamb—
cold-storage holdings, 1916–1925 1167
prices, wholesale, Chicago and New York 1195
statistics 1167–1168
Lambs, prices—
by months, 1909–1925 1161
by months, 1910–1925 1158
on farm, by States 1160
See also Sheep.
LANE, RALPH, note on grapes, early American 110
Lard—
consumption, 1907–1925 1183
exports—
by countries, 1910–1925 1143
by months, 1910–1926 1141
prices—
by months, 1905–1925 1143
in Liverpool, 1909–1925 1146
wholesale and retail, 1913–1925 1135
production 1919–1925 1127
storage holdings, 1916–1925 1139
substitutes, production 1919–1925 1127
Laspeyresia molesta, pest of peach, control 510
Laws, regulatory, statistics 1447
Leafhopper, sugar-beet, cause of curlytop 59–60
LE BARON, suggestions for insect control 497
Legislation—
agricultural education 713–715
agriculture, regulatory 717
experiment stations, agricultural 714
Leguminous vegetables, discussion 398–411
Lemons—
imports 698
production and marketing 870–875
Lettuce—
acreage 1921, 1924, 1925 391
commercial production—
location 392
requirements 391–392
crop value 1924, 1925 391, 906
origin 390–391
production—
1921, 1924 391
and marketing 906–907
seed production 332–333
vitamin content 392
Library—
department, function and use 47–48
loans of books to the States 48
Lice, plant, insecticides for 64
Light, influence in fruit growing 476
Lime—
production and value 1415, 1416
use against clubroot of crucifers 523
Limestone springs, suitable for water-cress production 390
Lime-sulphur-salt wash, discovery 498
LINCOLN, WILLIAM, remarks on Endecott pear tree 117
Linseed—
meal, prices at 11 markets 843
oil, exports and imports 842
oil, prices in New York 842
Linseed—Continued. Page
oil, trade international by countries 842
See also Flaxseed.
Liverpool—
corn prices, 1912–1925 803, 804
prices spot for wheat 769
Livestock—
breeding, improvement and increased profit 68–69
condemnation under inspection, 1907–1925 1180, 1181
estimating, notes 741, 742
farm values, by States, 1920–1926 1179
outlook for, discussion by Secretary 8–10
receipts, 1915–1925 1178
research problems 70
shipments in 1915–1925 1178
slaughter—
1915–1925 1178
statistics, 1922–1925 1184–1187
under inspection, 1907–1925 1178
statistics 1178–1187
London purple, early use 497
Loquats, origin, production, etc 217, 220
"Love apples," name of tomato, early 415
LOWELL, J., note on rhubarb 448
Lumber—
distribution, by States to States 1468–1473
prices, fir and pine 1474
production—
by States 1462–1464
kinds of wood, by States 1464–1467
Lychee nut, production 304

MAGNESS, J. R., article on "Marketing fruits and vegetables" (with others) 623–710
Maine, early use of tomato 415
Maize. *See* Corn.
Malaria, destruction of mosquito larvæ by airplane dusting 65
Mammals, relation to crops 587–598
Mangos, origin, production, etc 240, 253–254
Maple, sugar and sirup, statistics 1010–1011
Market—
news service, value to farmer 36–37, 41
reports, broadcasted to farmers 47
Marketing—
auctions f. o. b 658
barley, prices, markets, etc 823, 827–831
butter by leading markets 1085–1091
cheese 1097–1101
cooperative aims and methods, remarks by Secretary 18–20
corn, receipts, prices, etc 799–804
cucumbers, remarks 426–428
danger of vegetable disease spread 538–540
discussion by Secretary 17–20
fruits and vegetables—
adjustments of claims 661–662
article by A. W. McKay, H. W. Samson, R. R. Pailthrop, L. B. Flohr, L. C. Corbett, L. A. Hawkins, J. R. Magness, H. P. Gould, and W. R. Beattie 623–710
auctions 658–659
buyers' claims 661
commission merchants 658–659, 661

Page

Marketing—Continued.
fruits and vegetables—continued.
cooperative agencies 634, 643, 655–657, 664–669
distributing agencies 655–659
harvesting methods 628–630
inspection 662–664
methods of sale 659–661
news service 653–655
outlets 650–652
pooling of returns 667–668
retail costs 659
standardization for 628, 642–644
terminal facilities 647–650
losses, control, remarks 538–540
muskmelon, change in 420–421
news service 716
oats, with markets, prices, etc 813–820
pecans, by shelling, and cracking devices 287–288
Service Bureau, aid in transportation 644–645
Markets—
and marketing, explanation of estimates of prices, etc 741–742
foreign, review by Secretary 11–13
local, developing 42–43
terminal, spread in prices, analysis 34–35
world, fruits and vegetables 693–697
Marl, production and value, 1909–1924 1416
Maryland—
fruits in early days 118
peaches in 1800 121
Massachusetts—
canker worm, prize offer on 494
colonial fruit growing, remarks 115–118
State books on insects 489
McAtee, W. L., article on—
Fruits. "Diseases and pests of fruits and vegetables" (with others) 453–599
Vegetables. "Diseases and pests of fruits and vegetables" (with others) 453–599
McKay, A. W., article on "Marketing fruits and vegetables" (with others) 623–710
Meals—
make-up of 134–135
vegetables in 146–148
Meat—
cold-storage holdings, 1917–1925 1192
consumption, 1907–1925 1183
inspection, Federal, accomplishment 67–68
prepared under inspection, 1907–1925 1180
prices, wholesale, Chicago and New York 1192–1195
products, prepared under inspection 1180
products, trade international, by countries 1191
standards, acceptance 10
supply on market, by months, 1925 1188–1190
trade international, by countries 1191
Mediterranean fruit fly, distribution and control 511
Medlars, origin, production, etc 217, 220
Melopepo, note on 419
Mercuric chloride, use against leaf spot 528
Meteorology, statistics 1486–1514
Mexican—
bean beetle, spread, etc 556–557
fruit fly, note 511

Page

Mexico, growing of muskmelons, note 421
Mice—
injury to crops and control 589–591, 596
meadow, injuries and control 591
Middlings, prices in Minneapolis 778
Mildew. *See* Fruit diseases.
Milk—
condensed—
and evaporated, manufacturers' stocks 1077
and evaporated, production 1076
trade international, by countries 1076
dry—
production, 1914–1924 1082
skim, stocks by months, 1921–1925 1083
plant, management studies 51
prices—
retail, by market and years 1080–1082
wholesale, by markets and years 1077–1079
production and use, 1920–1924 1072
yield, dairy cattle, research 49–51
Millardet, work of, notice 457
Miller, note on use of tomato 414
Milling capacity, wheat, by States 770
Minerals, requirement in diet 139–142
Minnesota, wheat dockage 760
Moisture, relation to fruit diseases 475–476
Mold—
raisins, standardization test 74
study of Aspergillus by department scientists 74
Moles, control as crop enemy 598
Morrill Act, provisions and significance 713–714
Mosaic, sugar-cane, immunity studies 59
Mosquitoes, malaria, destruction of larvae by airplane dusting 65
Moth—
codling, early control 121–122
oriental fruit, pest of peach, control 509–510
Motion pictures—
in use by Department of Agriculture 63
use in cattle tick eradication 68
Mules—
losses from disease 1204
on farm, value by age groups, 1910–1926 1208
production on farms—
number and value, by States 1203–1204
number and value, tables 1200
receipts—
market, 1900–1925 1205
stockyard, by markets 1206
stockyard, by years 1205
Muskmelons—
distribution, with map 420, 421
growing, varieties, etc 420–422
origin, production, etc 419–420
seed, production 333
Mustard, origin and uses 389–390
Mutton—
cold-storage holdings, 1916–1925 1167
prices, wholesale, Chicago and New York 1195
statistics 1168–1169
trade, international, by countries 1169
Myrtaceous fruits, description 240

Naval Stores— Page
Act, purpose and enforcement 48
exports 1235
Nectarines, origin, production, etc 226–227
Nemas—
control methods, remarks 581
signs of, remarks 580
Nematode, sugar-beet, control 59
Nematodes, life cycle, distribution, and control 575–584
New England—
farm population, increase in 1924 33
fruits in colonial days 115–116
New Jersey, fruits in early days 118
New Mexico, apple orchard of year 1675 114
News service, crop estimates and outlook, aid to farmers 716
NEWTON, ISAAC, first Commissioner of Agriculture 712
Nicotine, use against insects 570–571
Nitrogen fixation, research developments 70–71
Nursery—
grades of trees 177–178
propagation—
methods 174–175
stocks in use 175–177
relation to fruit growing 173–178
stock, inspection, note 496
Nutrition—
alkaline reserve in 139
bulk in, fruits and vegetables 138–139
needs of human body 135–146
protein for, requirements and percentages 136–137
Nuts—
advantages as a crop 286
date of first use in America 286
exports 1233
food value 147–148
imports—
and exports 695, 697, 698–699
statistics 1246, 1247
native, list 112
nutritive value—
article by Caroline L. Hunt (with fruits and vegetables) 133–149
remarks 133–150
production—
and importance 284–304
etc., California 876–877
weather relations 156–157
relation to fruit and vegetable industries 285–286
value of products, comparison 107–109
See also Almonds; Brazil nuts; Butternuts; Cashew nuts; Chestnuts; Coconuts; Filberts; Hickories; Lychee nuts; Pecans; Pili nuts; Pine nuts; Pistache nuts; Queensland nuts; Walnuts.
Oats—
acreage, value, etc., by periods, by States, and by countries 806, 807, 809–812
classification, by cars 815
cost of production—
and yields, 1924 1335, 1336
by States, 1924 1334–1335
comparison with corn and wheat 1337
Oats—Continued. Page
exports, prices, etc. by periods 806, 813, 816, 817–820
marketing and markets, prices, etc 813–820
prices—
by periods and by markets 806, 815–820
future 820
on farm, by States 817
production—
of world, 1909–1925 812
yields, etc 806–811
receipts and shipments 813–814
statistics 806–820
stocks, supplies, receipts, etc 812–814
supplies visible, 1909–1925 814–815
trade international, by periods 816
value per acre, by States, 1909–1925 1316–1317
values on farm, 1924 and 1925 807
weight per bushel 1361
yield reduction with causes, 1909–1924 806
yields, etc., by periods, by States, and by countries 806, 808, 809–810
Oil—
cake and oil-cake meal 1032
corn, prices at Chicago, 1909–1925 804
linseed. *See* Linseed oil.
See also Cottonseed; Olive; Peanut.
Oils—
exports 1233
imports 1247
Oilseed and products, exports 1233
Oleomargarine—
manufacture, by months, 1924 1104
materials used in 1105
prices, monthly, 1914–1925 1107
production and consumption 1104
statistics 1103–1107
Olive oil—
imports and exports 875
trade international 875
Olives, origin, production, etc 240, 250–252
Onions—
Bermuda—
cultural methods 378
marketing of 377, 379
production and acreage 377–378
crops, uses, and cultural methods 382
importation 706–707
main crop—
commercial importance and production 381
cultural methods 381
storage 381–382
origin, production, etc 374–377
production and—
marketing 907–910
methods of growing 375–377
seed, production 333–335
smut, control 523
Valencia—
commercial development 379–380, 381
cultural methods 380
origin and production 379
Ophthalmia, cause and remedy 143
Oranges—
Florida, of early date 114
imports and exports, statistics 624, 697–698
production and marketing 870–875

Orchards— Page
cultural practices 186–207
development 186–207
heating for frost protection, methods 212–215
irrigation methods 203–207
manures and fertilizers 194–198
planting—
systems of arrangement 189–190
time 187–189
pruning—
at planting time 190–191
principles 199–203
size determination 127–128
topography relations 154

Packing, fruits and vegetables, processes 636–642
PAILTHROP, R. R., article on "Marketing fruits and vegetables" (with others) 623–710
Paleacrita vernata Peck, study of 494
Panama Canal, shipping by 691
Papaw, distinction from papaya 240
Papaws, origin, production, etc 237–238, 240
Papayas, origin, production, etc 240, 256
PARKINSON, note on tomato 414
Parsnips—
origin, production, etc 372
winter storage 372
Pasture lands, acreage in farms, 1924 1382–1383
Pastures, condition, 1909–1925 990
Paradichlorobenzene, insecticide use 499
Parasites, source of fruit diseases 478–479
Paris green, early use 121, 497
Pawpaw. *See* Papaw.
Peach—
leaf curl, note 466, 482
trees, dusting by airplane for control of plum curculio 64
yellows, note 458, 463, 481
Peaches—
canned and dried, exports 701, 702, 703, 704
canning industry 607–608, 610, 611, 612
drying industry 604–606
growing in Maryland in 1635 118
kinds in catalogue of 1823 120–121
origin, production, etc 223–226, 239, 258
planting beginnings 121
production and marketing 881–883
Peanut—
butter, making and uses 410–411
oil—
trade international 996–997
uses and making 409–410
Peanuts—
acreage, origin, production, etc 403–411, 993–997
by-products 409–411
cultural methods 406, 407, 408
handling of crop, etc 408, 409
production and marketing 993–997
rotation with other crops 405
soil, fertilizers, etc 405–406
uses, distribution, etc 404, 405, 407
Pear—
blight, note 458, 463, 480, 482
tree, Endecott, remarks 115–118
Pears—
canning industry 610, 611, 612
exportation 700, 701
Pears—Continued. Page
origin, production, etc 217, 218
production and marketing 884–885
Peas—
breeding for disease resistance 532
canning—
acreage, value, etc 438–442
contracts of growers and canners 439
discussion 438–442
distribution, with map 438–439
harvesting and shelling 441–442
industry 438–442, 602, 607–608, 612
seed requirements 440
varieties 440
production and marketing 402, 910–912
seed production 336–337
uses 402
Peat, production and value 1416
Pecan scab, remarks 479–480
Pecans—
area of production in United States 285
improvement of nuts and planting orchards 287–288
marketing, agencies, etc 286–287
plantings, early 286
prices 288
production, industry, etc 284, 286–290, 294, 295, 296–297, 298
propagation methods, notes 286
use early, and growth of industry 287
PECK, WILLIAM D., study of canker worm 494
PENN, WILLIAM, notes on fruits, early American 111
Pepper, seed production 336
Peppers, origin, growing, etc 417–418
Perennial crops, remarks on canning 446
Persimmons, origin, production, etc 231–234
Peru, origin of tomato 414
Pests—
fruits and vegetables, article by M. B. Waite, W. W. Gilbert, N. A. Cobb, W. R. Beattie, F. E. Brooke, J. E. Graf, W. B. Bell, and W. L. McAtee (with diseases) 453–599
insect, campaign 64–65, 76–78
Phosphate rock—
prices, wholesale 1422
production and value 1414, 1416
Phosphorus, sources in food 142
Phthalic anhydride, process discovered by department scientists 75–76
Pickles, cucumbers for, note 426
Pili nuts, production, industry, etc 304
Pine—
mice, injury to crop and control 589–590
nuts, production, industry, etc 303
white, blister rust control 57–58
Pineapples—
importation and exportation, statistics 698, 701
origin, production, etc 240, 250
Pistache nuts, production, industry, etc 304
Plant—
beds, tomato, remarks 434–435
diseases—
early discoveries, etc 456
pioneer books 456–457
study by Department, origin 455–456

Plant—Continued. Page
industry, investigations 51–61
inspection, value 536
pathology—
development 455–463
development in Department, early 459–460
early workers in 455–461, 463
personnel 459–460
work in States, etc 461–462
quarantine, value 536
Planting intentions, farmers' reports 45
Plants—
disease-free, use in vegetables growing 524–525
resistance to insect enemies 567
Plow lands, value per acre, by States, 1920–1925 1344
Plum curculio—
control by dusting from airplane 64
work on 493, 494
Plums—
canning industry 610
importation and exportation 696
origin, production, etc 227–229, 239
Poisons—
formulas for—
ground squirrels 593–594
rabbits 593
woodchucks 595–596
kinds, for vegetable insects 568–569
Pokeweed, use as a green food 398
Pomegranates, origin, production, etc 234
Population, farm and total, statistics 1402–1406
Porcupines, control as crop enemy 596
Pork—
exports by months, 1910–1926 1140
prices—
in Great Britain, 1909–1925 1144
wholesale and retail 1135
products, statistics 1137–1146
storage holdings, 1916–1925 1138–1139
trade international, by periods 1140
Porthetria dispar, spread by floating in air 500
Porto Rico—
experiment station, accomplishments 95–96
farm products, shipments 1253
Potash, recovery from greensand 80
Potato—
beetle, Colorado, remarks 549–550
wart disease, remarks 530–532
Potatoes—
acreage and yield, by periods 346, 347–348, 349
breeding for disease resistance 530
commercial varieties, where grown 342–345
cost of production, 1923 and 1924 1338, 1339
culture—
practices, discussion 352–360
requirements 355–357
development of American varieties 342–345
early history and development 341–342
flour manufacture and use 621–622
grading in the field 630–633
immunity to wart disease 530–532
importance as a food crop 346
losses from disease, note 513–515
marketing, yield, etc 914, 916–928
markets and production 624, 627

Potatoes—Continued. Page
production—
centers 348, 349–350, 351–352
crop rotation 352–353
influence of farm machinery 360
soils, temperature, etc 350–352
trends 347–348
world 919–920
origin 340–341
rotation 57
"running out," cause 525
seed-certification work 526–527
starch—
manufacture from 618–621
uses 621
sweet. *See* Sweet potatoes.
utilization statistics 617
value per acre, by States, 1909–1925 1320–1321
values, etc 913, 916–920
Poultry—
cold storage holdings 1215
dressed, receipts on market, and origin 1210–1215
remarks by Secretary 11
trade international, by countries 1216
Precipitation, normal and mean, statistics, 1914–1925 1499–1511
Prices—
apples, with stocks, etc 859–869
bacon 1146
barley 830–831
beans, farm and market 948
beef, live, and retail cuts 1052, 1054, 1065–1066
beeswax 1221
buckwheat, farm and market 855–856
butter 1092, 1094–1095
calves, veal 1053–1054
cattle 1052–1054, 1055–1066
cheese, American 1103
chickens, 1910–1925 1217
citrus fruit 874–875
corn, spot, etc 788, 799–805
cows, by months 1051
eggs 1222, 1224–1225
explanation of estimates 741, 742
farm products, 1908–1925 1366–1369
farmers', by articles 1362–1363
flaxseed 840–842
hams 1145
hay, farm and market 983–989
hides 1199–1200
hogs 1128–1133, 1135–1136
honey 1227–1228
horses 1208–1209
index numbers 1370–1374
lard 1143, 1146
livestock, remarks by Secretary 8–9
milk, wholesale and retail 1077–1082
meats 1192–1195
oats, by periods and by markets 806, 815–820
oleomargarine, monthly, 1914–1925 1107
peanuts, farm and market 994–995
pork and pork products 1135, 1144
potatoes, farm and market 925–928
remarks by Secretary in report 1–13
rice, farm and market 851–853
seeds, farm and market 1014–1020

Prices—Continued. Page
sheep and lamb 1158–1166
silk 1226
sorghum and kafir 857–858
sugar, wholesale and retail 1007–1008
sweet potatoes, farm and market 932–935
tobacco, farm 1028
tomatoes, farm and market 938–939
turkeys, 1912–1925 1217
turpentine and rosin 1481–1483
weighted averages 742
wheat and flour 764–769, 771–775
wholesale, index numbers 1375–1377
wood pulp 1479
wool 1173–1176
PRINCE, catalogue of fruits, note 120–121
Produce—
growers, aid of Department of Agriculture to 40–42
perishable, inspection service 41
Protein—
calories, in vegetables, table 137
requirements and percentages in food 136–138, 148
wheat, content determination, standard method 44
Prunes—
canning industry 610
drying industry 604–606
importation and exportation 696, 702, 703, 704
Pruning, fruit trees—
at planting time 190–191
principles 199–203
Publications, classified list, issued July 1, 1923, to January 31, 1926 728–740
Puccinia asparagi, injury to asparagus 447
Pulp wood, consumption, by kinds of wood 1477
Pumpkin, seed, production 337
Pumpkins—
canning industry 607, 609
origin, production, etc 428–429
Purnell Act, provisions, purpose, and value 78–79, 715
Pyrites, production, price, and value 1413–1414, 1416

Quarantine—
plant—
act, purpose and accomplishments 76–78
diseases 433, 486
value against disease spread 536–537
Queensland nuts, production 304
Quinces, origin, production, etc 217, 218–220

Rabbits, control as crop enemy 591–593
Radio, use by the farmer 47, 63–64
Radishes—
origin, production, etc 373
seed, production 337
source of Vitamin C 373–374
Rainfall, relation to fruit diseases 475–476
Raisins—
imports and exports 694, 695–696, 698, 702, 703, 704
industry, remarks 604–606
origin, production, etc 282
standardization, test for mold 74
RALEIGH, note on grapes, American 110
Ranges, national forests, stability in use of 85–87

Raspberries— Page
canning industry 610, 612
origin, production, etc 258, 263, 264, 266–267
See also Berries.
Rats, control as crop enemy 596–597
Red clover—
seed—
production 60–61
susceptible to anthracnose 60–61
winterkilling, discussion 61
See also Clover.
REED, C. A., article on "Fruit and vegetable production" (with others) 151–452
Refrigeration—
fruits and vegetables—
cars for 646, 683–685, 688
express service 684–685
shipments 646, 683–685, 687–689, 691, 693
relation to muskmelon industry 421
Research service, Federal and State, article by H. P. Gould 711–718
Retailing, effect upon prices 35–36
Rhagoletis pomonella, note 512
Rheum rhaponticum, origin 448
Rhubarb—
distribution, culture, etc 449
forcing 449
origin, production, etc 448–449
Ribes nigrum, infection of white pine 58
Rice—
acreage, value, etc, by periods and States 844–846–847
prices, imports, etc 851–853
production—
exports and prices 844, 847–849, 851–853
of world 846–849
receipts at New Orleans 849
removal of weed seed, invention 43
stocks and trade international 850–851
value per acre, by States, 1909–1925 1320
yields, and causes of reduction 845–847
Roads—
demand for highway service 93–94
Federal-aid, accomplishments 91–92
funds for, sources 1438–1442
kinds, etc. statistics 1426–1442
local, mileage, by kinds 1432–1433
marking, Federal-aid highway system 93
revenues from—
gasoline 1443
licenses, etc 1444–1445
See also Highways.
Robins, damage to fruits and vegetables 586
ROBINSON, T. R., article on "Fruit and vegetable production" (with others) 151–452
Rodents—
injury to crops 587–588
relation to crops 587–597
Root—
disease, sugar cane, immunity studies 59
vegetables, remarks 369
Rosin—
grading and branding under naval stores act 48
production and marketing 1480, 1481, 1480, 1483

Rotation— Page
crop—
discussion 129
for disease control 517
for nematode control 581, 582, 583
study of effects 56–57
cucumber, note 444
potato 57
tomato 432–433
Rota, fruit, remarks 464, 465, 466, 467, 471
Rubber—
imports 1252
prices and trade 1484–1485
production possibilities in the United States 51–53
Rust—
apple, remarks 468–469
asparagus, losses from 447
blister, white pine, control 57–58
stem, of wheat, due to barberries 55–56
Rye—
acreage, value etc., by years and States 779, 783
classification by cars 785
crop of world, 1909–1925 783
exports, prices etc 779, 785, 786–787
farm value 783
imports 785
marketing, prices etc 779, 784–787
prices, by periods 786–787
production, etc., by periods and countries 779, 781, 783
receipts at leading markets 784
statistics 779–787
trade, international, by periods 785
value per acre, by States, 1909–1925 1313–1314
yields by States and by countries 780, 781

Salad crops, remarks 382–384, 398
Salamander, control, as crop enemy 599
Sales. *See* Marketing.
Salsify—
origin and value 372–373
production and winter storage 373
SAMSON, H. W., article on "Marketing fruits and vegetables" (with others) 623–710
San José scale, control 64, 499–500
Sapotaceous, fruits, description 240
Sauces, hot, peppers for 417–418
Sauerkraut, cabbage—
crop for 893–894
growing for 446
SAUNDERS, WILLIAM, work for Department, notes 712–713
Scab. *See* Fruits, diseases.
Scale, San José, control 64, 499–500
SCHNECK, notes on sweet corn 413
Science, aid against fruit insects 503
Screw worm, safe control of 74
Seed industry, discussion 323–340
Seeds—
cucumber, for pickle growing 444
disease-free, use in vegetable growing 524–525
exports 1234
imports 1248
pea, importance and types 440
peanut, remarks 405–406
production and prices 1101–1020
sprouting, injury by nemas 579

Seeds—Continued. Page
sweet corn, testing, etc 437
tomato—
importance, etc 433–434
plant growing 434
treatment—
at community plants 528
for disease control 527–529
vegetable—
imports, 1910–1925 944–945
production trends 399–340
weed, removal from grain and rice, invention for 43
Seedsmen, treatment of seeds against diseases 528
Selling. *See* Marketing.
Sheep—
condemnation under inspection, causes 1182
losses from disease and exposure 1151
numbers by countries and periods 1149–1150
prices—
advance and production 10
at Chicago, 1910–1925 1166
at leading markets, by months 1162–1165
by months, 1909–1925 1161–1165
by months, 1910–1925 1158
on farm, by ages 1158
on farm, by States 1159
production on farms, number and value 1147–1148
receipts—
at stockyards 1152–1153, 1155
market, and shipments, 1909–1925 1151
shipments—
by markets, 1916–1925 1155
by stockyards, 1925 1155–1157
slaughter—
by markets, 1916–1925 1154
by States and periods 1166
statistics 1184–1187
under inspection, 1907–1925 1167
statistics 1147–1168
Shipments—
agricultural products to Alaska, Hawaii, and Porto Rico 1238–1241
cars for fruits and vegetables 686–687
fruits and vegetables, relation to seasonal variations 649
See also under crops shipped, as Corn.
Shipping. *See* Transportation.
Ships, refrigerated, for fruits and vegetables 691
SHOEMAKER, D. N., article on "Fruit and vegetable production" (with others) 151–452
Silage, pea, note 441
Silk—
prices, by months, 1909–1925 1226
production by countries and periods 1226
Sirup—
cane, sorgo and maple, statistics 1008–1011
cane sugar, new process of clarifying 72–73
Skins—
stocks, by kinds, 1921–1925 1196–1197
trade international, by periods 1198
SMITH, Capt. JOHN, notes early fruits, etc 110, 425
Smith-Hughes Act, provisions and results 715
Smith-Lever Act—
effects on agricultural practices 61–62
origin and results 458, 462
provisions and results 714–715

Page

Soil—
cucumber, for pickle growing 444
fruit and vegetable growing, maintenance of fertility 128–129
inoculation for peas 440
maintenance, in fruit and vegetable growing 128–129
orchard—
maintenance 191–199
relation to preparation 186–187
relation to distribution of fruit production 167–170
rhubarb, note 449
surveys—
accomplishments 79–81
by States 1448–1449
tomato, notes 430, 433
types, influence on vegetable industry 308–311
Soils—
kinds for sweet corn 436–437
pea, for canning crop 439–440
peanut, remarks
sterilization, note 485
treatment for disease control 518–524
SORAUER, PAUL, book 456
Sorghum sirup, prevention of crystallization 73
Sorghums, acreage, prices 857
Sorgo, sirup, production, etc 1009
Sorrel, production 397
Soy beans, production and marketing 949
Sphaerostilbe coccophila, use against insects, note 504
Spices—
exports 1234
imports 1248
Spinach—
acreage 1924, 1925 393
breeding for disease resistance 530
canning industry 609, 611
crop value 1924, 1925 393
cultivation 393
food value 393
marketing 393–394
origin, production, etc 393
production and marketing 928–930
seed production 337
Spraying—
comparison with dusting for insects 533, 569–570, 575
fruit, first attempts 121–123
nozzles for, notes 457
practice, developments in 532–534
suggestion early 494
Sprays—
combination with dusting 572–575
fruit, forecasting weather for application of 63–64
materials and application 574–575
Spring wheat. *See* Wheat.
SQUANTO, teaching of corn growing 412
Squash—
growing for market, etc 428–429
origin, production, etc 428–429
seed, production 337
SOUIER, discovery of corn, note 411

Page

Squirrels, ground, control as crop enemy 593–595
Standards, hay, made official 44–45
STANDISH, MILES, discovery of corn 412
Starch, potato, manufacture and use 618–621
Statistics—
agricultural 741–1514
explanation and review of tables 741–742
field crops other than grain 947–1032
Steam, use in treatment of soil 519–522
Stem—
nema, notes 583
rust of wheat 55–56
Storage—
cold—
holdings, of fruit and vegetables 680–682
plant for fruits and vegetables 648, 679–680
space refrigerated October 1, 1925 1387
fruits and vegetables—
discussion 672–693
factors 682–683
warehouses 675–679
muskmelon, note 422
peanuts, conditions proper 409
rhubarb 449
watermelons 424
Straw, wheat, prices 986, 987
Strawberries—
canning industry 611, 612
production and marketing 886–888
shipping precautions 629, 646, 686, 688, 689, 691, 692
See also Berries.
Strawberry—
bunch symptoms 584
origin, production, etc 258, 259–263
Strychnine, use as poison for predatory animals 598
See also Poisons.
STUART, WILLIAM, article on "Horticultural manufactures" (with others) 601–622
STURTEVANT, notes on vegetable origins 411, 414–415, 416, 419
Sugar—
beet nema, note 583
exports 1234
fuel value 135
imports 1249
maple, production, etc 1010–1011
production—
and prices 999–1001, 1004–1008
of world 1004–1005
Sulphur, use against vegetable diseases 524
Sunshine, percentages possible, statistics 1514
Sweet clover, seed prices 1015
Sweet corn—
canning—
crop, distribution, with map 436
culture 436–437
discussion 435–438
factory requirements 436
handling for canning 437–438
industry, growers' and canners' agreements 437
yields, value, etc 438
See also Corn, sweet.

Sweet potatoes— Page
adaptability to diversification 362
canning industry 607–608, 609, 611
cultural requirements 366–368
losses from disease, note 513–515
origin and distribution 361
production—
and marketing 930–935
crop rotation 363–364
seed stock requirements 364–365
transportation problem 361
value per acre, by States, 1909–1925 1324
weevil control in Florida 65
Swine—
condemnation under inspection 1182
losses from disease, 1909–1925 1110
shipments under inspection, 1925 1123
slaughter—
by States and periods 1134
statistics 1186
See also Hogs.
Swiss chard, use as summer vegetable 370
Tabasco sauce, manufacture 418
TALLEY, H. R., article on farming. "Relation of the fruit and vegetable industry to other farm enterprises" (with others) 125–131

TAYLOR, WM. A., note on pecan propagation 286
Tea—
imports 1249
trade and prices 1031–1032
Temperature—
control, prevention of vegetable disease spread 539–540
fruit-growing, effect of water 163–164
normal and mean, statistics, 1914–1925 1486–1498
relation to fruit growing 474–475
Terminals, facilities for marketing fruits and vegetables 647–650
Texas, screw-worm control 74
Ticks, cattle—
eradication methods 68
eradication work, status, June 30, 1925 1110
TILTON, JAMES, work on plum curculio 494
Timber—
removal from forests annually, by use 460
stand, by regions 1454
white pine, control of blister rust 57–58
Timothy—
hay production 978, 985, 986, 988
seed production 1012–1013, 1014, 1015, 1019, 1020
Tobacco—
behavior in rotation 57
imports 1249
production and marketing 1021–1029
production of the world 1026–1028
value per acre, by States, 1909–1925 1325
wireworm control by new poison bait 65
Tomato, leaf spot, note 518
Tomatoes—
agreements of canners 433
canning—
distribution, with graph 430–432
handling crop 435

Tomatoes—Continued. Page
canning—continued.
industry 602, 607–608, 609, 611
plant requirements 434–435
seed quality 433–434
distribution of growing, with map 416, 430–432
importation and exportation 705, 708
origin, production and canning 414–415
production—
and distribution 416
and marketing 936–939
for canning 430–435
resistance to wilt 531
rotation 57, 432–433
seed production 338–339
varieties, relation of canning industry 416
Topography, relation to frost damage 154
Toxotrypana curricauda, note 5 511
Transportation—
American Railway Association, aid 645
diversion and reconsignment 646
fruit 170–173
fruits and vegetables—
discussion 672–693
heater service 646–647, 689–690
in relation to marketing 644–647
perishable 646, 686, 688, 689, 691, 692
precooling 689
refrigeration 646, 683–685, 688
terminal facilities 647–650
ventilation rules 687
motor, for fruits and vegetables 692–693
Service Bureau aid 644–645
water, for fruits and vegetables 691
Traps—
rat, remarks 596
use against animal pests 597, 598
Truck crops—
losses and changes by insects 515–517
production 941–942
Trucks, motor, advantages for transportation of fruits and vegetables 692–693
TSCHUDI, discovery of corn, note 411
Tuberculin testing, cattle, statistics 1107
Tuberculosis—
eradication work, by States, June 30, 1925 1108–1109
livestock, control 67
Turkeys, prices, 1912–1925 1217
Turnips, origin, production, etc 374
Turpentine—
grading and branding under Naval Stores Act 48
production and marketing 1480–1482
Tylenchus dipsaci, note 583
Tylenchulus semipenetrans, note 583

VAN DEMAN, H. E., pomologist, work for the department 713
Veal—
prices, wholesale, Chicago and New York 1192, 1193, 1195
statistics 1069–1070
Vegetable products—
exports 1231–1232
imports 1245
seed. *See* Seeds, vegetable.

Vegetables— Page
American origin, note 124
animals injurious to 587–599
article by L. C. Corbett, H. P. Gould, and W. R. Beattie (with fruits and nuts) 107–124
bird injuries 584, 585
breeding for disease resistance 529–532
canning industry 606–613
crops of special use 411
disease control—
combination with control of insects 571–575
in marketing 538–540
methods 517–529
organization 537–538
diseases—
article by M. B. Waite, W. W. Gilbert, N. A. Cobb, W. R. Beattie, F. E. Brooke, J. E. Graf, W. B. Bell, and W. L. McAtee (with fruits) 453–599
importance of insect control 535–536
losses from 512–517
wild hosts, eradication 535
drying industry 606
exports 1234
field control of diseases 538–539
fuel values 135–136
grading for shipment 630–633, 637–639, 543
growing, labor distribution 129–130
growth, groups in relation to temperatures 157
harvesting for shipment 628–630
imports—
and exports 694–695, 705–710
statistics 1249
industry—
and production, outlook 719–727
distribution, influence of streams 306
evolution of 313–314
geographical distribution, discussion 304–312
history, early 123–124
influence of irrigation upon 306–307
influence of soil types 308–311
relation to other farm enterprises, article by L. C. Corbett, W. R. Beattie, and H. R. Talley (with fruit) 125–131
insect injuries—
discussion 540–544
types 541–544
insect pests, control by bird enemies 586–587
inspection for shipping 942–943
losses in transit and storage prevention 538–540
manufactures—
article by L. C. Corbett, J. S. Caldwell, William Stuart, W. R. Beattie, and L. B. Flohr (with fruit) 601–622
as basic industry 604–613
market outlets 650–652
marketing—
article by A. W. McKay, H. W. Samson, R. R. Pailthrop, L. B. Flohr, L. C. Corbett, L. A. Hawkins, J. R. Magness, H. P. Gould, and W. R. Beattie (with fruits) 623–710

Vegetables—Continued. Page
marketing—continued.
distributing agencies 655–659
trade associations 664
"unloads," etc 945–946
needs of human body 135–146
nematode enemies 575–584
nutritive value, article by Caroline L. Hunt (with fruit and nuts) 133–149
packing—
houses 633–636
processes 636–642
pests, article by M. B. Waite, W. W. Gilbert, N. A. Cobb, W. R. Beattie, F. E. Brooke, J. E. Graf, W. B. Bell, and W. L. McAtee (with fruits) 453–599
production—
article by L. C. Corbett, H. P. Gould, T. R. Robinson, G. M. Darrow, George C. Husmann, C. A. Reed, D. N. Shoemaker, C. J. Hunn, J. H. Beattie, W. R. Beattie, J. B. Kincer, and L. B. Flohr (with fruits) 151–452
cultural practices 340–368
development and economic factors, discussion 312–323
special types 314–317
weather effect 157–159
protection—
by birds, mammals, etc 584–599
from frost 208, 210
recommendation for diet 146–148
resistance to insect injuries 567
special crop, relation to other farm enterprises 126–127
sales inspection 662–664
shipment, increase 624–625
standardization for marketing 628, 642–644
statistics, production, etc 889–946
value of products, comparison 107–109
values in 1919 107–108
vitamins in 143–146
world production and world markets 693–697
See also Horticulture.
Vehicles—
motor, registration, etc., by States 1444–1445
See also Automobiles; Motor vehicles; Wagons.
Veneers, by kinds of woods, statistics 1476
Ventilation, fruits and vegetables—
car equipment for 686–687
in transit 685–687
Vermont, asparagus bed, duration of growing 447
Vine crops, discussion 418–419
Vinegar, manufacture 614–617
VINEGAS, note on muskmelon 419
Virgin Islands, experiment station, accomplishments 96–97
Virginia, fruits in early days 110–112
Vitamins—
function and presence in food 143–146
relation to disease 143, 144

WAITE, M. B., article on—
Fruits. "Diseases and pests of fruits and vegetables" (with others) 453–599
Vegetables. "Diseases and pests of fruits and vegetables" (with others) 453–599

Walnuts— Page
black, production, industry, etc. 298–300
Japanese, production, industry, etc. 303
Persian—
acreage and production in California, by years 285
marketing, etc. 292
origin and types 290–291
production, industry, etc. 284, 290–292, 296, 297, 298
use of shells 292
Warehouses—
storage for fruits and vegetables 675–679
use, suggestions 16
Wart, potato, immunity of American potatoes 530–532
Washes, protective against rabbits 592–593
Water cress, production and uses 390
Watermelons—
acreage, distribution, production, etc., with map 423
keeping for winter 424
origin, production, etc. 422–424
production and marketing 940–941
seed, production 333
storage 424
varieties 423–424
Weather—
critical temperature in fruit production 152
effect on—
fruit production 151–156
nut production 156–157
vegetable production 157–159
reports, broadcasting to the farmer 47, 63–64
Weeds, seed removal from grain and rice, invention for 43
Weevil—
bean, control in California 65
sweet-potato, control in Florida 65
Wheat—
acreage—
abandoned, 1909–1925 749
by countries, and periods 750–751
values, etc., by States, etc. 743–745
classification by cars 759
cost of production—
and yields, 1924 1328, 1329
by States, 1924 1326–1327
comparison with corn and oats 1337
crop, discussion by Secretary of market relations 4
dockage, in Minnesota, 1909–1924 760
exports, prices, etc. 743, 760–769
freight rates 1409–1411
futures trading 778–779
imports, tables 761
index numbers of freight rates 1409
inspection and classes 759, 762
marketing—
by farmers, 1917–1924 751
exports, dockage, etc. 743, 751, 754–769, 771–779
Wheat—Continued. Page
milling by States 770
planting intentions, suggestions of Secretary 6
prices—
in American markets 5
spot in foreign markets 769
production—
etc., by countries and periods 752–753
world 1909–1925 753
protein content determination, standard method 44
receipts and shipments 755–756
reduction of yield, statistics and causes, 1909–1924 748
requirements and supplies, by States 757
statistics 743–779
stem rust, due to barberries 55–56
stocks and distribution 751, 754–758
supplies visible, 1909–1925 758
value per acre, by States, 1909–1925 1312–1313
weight per bushel 1361
yields of several kinds by States 746–748
See also Bran; Bread; Flour; Middlings.
White pine. *See* Pine.
Wind, agent in spread of insects 590
Winds, velocity normal, statistics 151
Winter wheat. *See* Wheat.
Wireworm, tobacco fields, improved poison bait 65
Wood—
distillation, by States 1483–1484
exports 1236
imports 1252
pulp—
prices 1749
production by States 1478
trade international 1479
WILLIAM, notes on fruits, in early American colony 111
Woodchucks, control as crop enemy 595–596
Woodlands—
acreage, by States and division 1384–1385
farm, acreage by States, etc. 1453–1454
Wool—
consumption by classes, 1918–1925 1176–1177
fleece, production by States 1170
holdings by dealers and manufacturers 1172
prices—
at Boston 1174–1175
in England, 1909–1925 1175–1176
production—
and consumption 1169
in terms of grease 1173
increase and prices 10–11
trade international, by countries 1171
unwashed, prices, 1910–1925 1173
World crops. *See* Corn; Cotton, etc.
Worms,-canker. *See* Canker worms.

ADDITIONAL COPIES

OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
$1.50 PER COPY

▽